

Quartus Message Archives

These message archives are all from the Quartus Forth Discussion Forum at the old [Quartus](#) site. Enjoy! Questions and comments to info@quartus.net.

- [Click here for archived messages from September 15, 1999 and earlier. \(approximately 1M\)](#)
- [Click here for archived messages from July 12, 1999 and earlier. \(approximately 500K\)](#)
- [Click here for archived messages from May 14, 1999 and earlier. \(approximately 450K\)](#)
- [Click here for archived messages from March 20, 1999 and earlier. \(approximately 450K\)](#)
- [Click here for archived messages from February 8, 1999 and earlier. \(approximately 400K\)](#)
- [Click here for archived messages from January 10, 1999 and earlier. \(approximately 500K\)](#)
- [Click here for archived messages from November 1, 1998 and earlier. \(approximately 500K\)](#)

QUARTUS

How to Contact Quartus

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Quartus

Welcome to daVinci Forth 1.1.

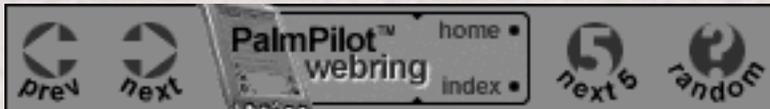
Build: 1999.08.07 5:36:43pm

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Today is March 19, MM. 55334 visitors since 1999.10.9.



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Quartus Discussion Forum messages from before September 15, 1999

[Return to the Quartus Discussion Forum](#)

Emulator Palm

Posted by [Bill](#) on September 14, 1999 at 20:08:30:

I need Image of ROM. Help!

Re: Emulator Palm

Posted by Barron Snyder on September 15, 1999 at 17:27:43:

In Reply to: [Emulator Palm](#) posted by Bill on September 14, 1999 at 20:08:30:

> I need Image of ROM. Help!

There are two ways to get one:

- 1) Upload the image from your Palm device.
- 2) Sign up with the Palm developer program (Free), and download all you want!

- [More info](#)
-

OS3.3 API Docs

Posted by [Erwin Schomburg](#) on September 14, 1999 at 16:47:35:

I made the Web version of the combined OS3.3 reference and companion one big chunker (750k) in fully crosslinked iSilo format. On request for participants of this forum.

May the Forth be with you!

/Erwin

Re: OS3.3 API Docs

Posted by [Neal Bridges](#) on September 14, 1999 at 17:14:35:

In Reply to: [OS3.3 API Docs](#) posted by Erwin Schomburg on September 14, 1999 at 16:47:35:

> I made the Web version of the combined OS3.3 reference and companion one big
> chunker (750k) in fully crosslinked iSilo format. On request for participants
of
> this forum.

Thanks Erwin!

Neal

Re: OS3.3 API Docs

Posted by Erwin on September 15, 1999 at 01:08:56:

In Reply to: [Re: OS3.3 API Docs](#) posted by Neal Bridges on September 14, 1999 at 17:14:35:

> > I made the Web version of the combined OS3.3 reference and companion one big
> > chunker (750k) in fully crosslinked iSilo format. On request for
participants
> of
> > this forum.

> Thanks Erwin!

> Neal

I finally managed to manage my page again, so no tedious mailing required, see link below

- [iSilo-ed doc file](#)

OS call problem.

Posted by [Jim Deakin](#) on September 14, 1999 at 09:57:55:

Hi,

I've run into a record initialization problem, that I hope someone can spot. It's in the DmSet call in NewRecord@ in the snippet below.

The first part of the word runs ok when I create the new record, and the record is there when I check with RsrcEdit but when I call the DmSet OS function, I get a DmWriteCheck failed error. According to the docs, the parameters for DmSet

```
are: ( value[>byte] bytes. offset. &recordP. -- Err )
```

In my test both value and offset are 0, and bytes equals the size of the record. I've also tried reducing the number of bytes, or starting at a positive offset.

It's probably obvious, but it's got me stumped!

What I did was 'needs dbase', opendb, then either appendrec, or
1 newrecord@

Thanks for any help.

Jim Deakin

```
\ dbase  
needs ids  
needs zstrings  
needs DataMgr
```

```
ID Data  
ID JNDs  
: DBNAME z" MedDB-JNDs" ;
```

```
dmModeReadWrite  
variable Mode Mode !
```

```
0. 2variable gDB  
gDB 2!
```

```
0. 2variable hcurrentrecord  
hcurrentrecord 2!
```

```
0. 2variable ptrcurrentrecord  
ptrcurrentrecord 2!
```

```
0 variable currentrecordindex  
currentrecordindex !
```

```
: openDb ( -- )  
mode @ JNDs Data ( m ID. ID. )  
DmOpenDatabaseByTypeCreator  
( handle.|0. )  
2dup or 0= ( handle.|0. f )  
if ( 0. = no Db to open )  
2drop ( -- )  
0 Data JNDs DBNAME  
CreatedB ( so make it )  
mode @ DBNAME  
OpenDB  
then  
gDB 2! ;
```

```
: NewRecord@ ( size posn -- )  
currentrecordindex ! ( size ) 1-  
>r 0 >byte r> 0 ( 0 size. )  
2dup ( 0 size. size. )  
currentrecordindex >abs
```

```
( 0 size. size. & )
gDB 2@ DmNewRecord ( 0 size. h. )
2dup
hcurrentrecord 2!
memhandlelock ( 0 size. h2. )
0. 2swap ( 0 size. 0. h2. )
ptrcurrentrecord 2! ( 0 size. 0. )
ptrcurrentrecord >abs ( 0 size. 0. & )
DmSet ;

: appendrec ( u -- )
gDB 2@ DmNumRecords
( u #)
newrecord@ ;
```

Re: OS call problem.

Posted by [Neal Bridges](#) on September 14, 1999 at 11:20:07:

In Reply to: [OS call problem.](#) posted by Jim Deakin on September 14, 1999 at 09:57:55:

Looks like the problem is here:

```
> ptrcurrentrecord >abs ( 0 size. 0. & )
> DmSet ;
```

Should instead be

```
ptrcurrentrecord 2@ DmSet
```

What's needed there is the address of the new record.

Neal

Re: OS call problem.

Posted by [Jim Deakin](#) on September 15, 1999 at 06:01:10:

In Reply to: [Re: OS call problem.](#) posted by Neal Bridges on September 14, 1999 at 11:20:07:

> Looks like the problem is here:

```
> > ptrcurrentrecord >abs ( 0 size. 0. & )
> > DmSet ;
```

> Should instead be

> ptrcurrentrecord 2@ DmSet

> What's needed there is the address of the new record.

Thanks Neal, that was the problem. I was getting flummoxed trying to rationalize the differences between handles, pointers, and pointers to either, and completely blew my reading of the example in o'Reilly's
Sorry to have bothered you with a non-Quartus problem, but I don't think many people on the palm-dev-forum@3com.com would understand Forth. Maybe that'll change :-)

Jim

API calls vs. rolling your own

Posted by [Matthew Blair](#) on September 14, 1999 at 08:28:57:

Hi,

Last night I wrote a word to determine if a penDownEvent occurred within a PalmOS RectangleType structure. After finishing, and generally congratulating myself all around on my success, I discovered that the API has a function, RectPtInRectangle which does exactly what my function does (even takes the arguments in the same order!)

So my question is, does it make a difference which call I use? Does the API call tend to be slower than a Forth equivalent? I've attached the code below for reference.

Matt

```
: in-bounds? ( &r y x -- in? )
\ &r: one-cell Quartus address
\ y, x: coordinates of point
\      to be tested
  2dup >r >r
\ Check if x > rect.left
  rot dup >r @ > swap
\ Check if y > rect.top
  r@ cell+ @ > and
\ Check if x < rect.left + rect.width
  r> r> swap dup dup >r 3 cells +
  @ swap cell+ @ + < and
\ Check if y < rect.top + rect.height
  r> r> swap dup 2 cells +
  @ swap @ + < and
```

```
if true else false then ;
```

Re: API calls vs. rolling your own

Posted by [Neal Bridges](#) on September 14, 1999 at 09:11:37:

In Reply to: [API calls vs. rolling your own](#) posted by Matthew Blair on September 14, 1999 at 08:28:57:

```
> So my question is, does it make a difference which call I use?  
> Does the API call tend to be slower than a Forth equivalent?  
> I've attached the code below for reference.
```

[snip]

There is a certain overhead in making an API call -- you'd need to do a benchmark to see if your Forth equivalent was faster in any specific case.

One quick speedup:

```
if true else false then
```

can become

```
0= 0=
```

Neal

Dictionary Overflow

Posted by [Michael Rowe](#) on September 12, 1999 at 04:10:03:

I have been writting a Forth app for the last several months and have now apparently run out of memory, as indicated by the "Dictionary Overflow" error message. I have had this problem from time to time, but have thus far been able to avoid it by refactoring or removing less important features, but I have now reached the point that I can no longer do this. Is there some way to increase the dictionary size, or otherwise avoid this problem?

Re: Dictionary Overflow

Posted by [Neal Bridges](#) on September 12, 1999 at 11:29:01:

In Reply to: [Dictionary Overflow](#) posted by Michael Rowe on September 12, 1999 at 04:10:03:

> I have been writting a Forth app for the last several months
> and have now apparently run out of memory, as indicated by
> the "Dictionary Overflow" error message. I have had this
> problem from time to time, but have thus far been able to avoid
> it by refactoring or removing less important features, but
> I have now reached the point that I can no longer do this.
> Is there some way to increase the dictionary size, or otherwise
> avoid this problem?

It must be a monstrous application! I can expand the dictionary somewhat in the current version; I'll send you an interim update.

If you can send your sources to me, I can check that it's actually a dictionary overflow condition caused by the code size, and not caused by some other condition. I may also be able to suggest methods of reducing the size of the code.

Neal

Re: Dictionary Overflow

Posted by [Michael Rowe](#) on September 26, 1999 at 13:23:27:

In Reply to: [Re: Dictionary Overflow](#) posted by Neal Bridges on September 12, 1999 at 11:29:01:

> > I have been writting a Forth app for the last several months
> > and have now apparently run out of memory, as indicated by
> > the "Dictionary Overflow" error message. I have had this
> > problem from time to time, but have thus far been able to avoid
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> > avoid this problem?

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> dictionary
> overflow condition caused by the code size, and not caused by some other
> condition. I may also be able to suggest methods of reducing the size of the

> code.

> Neal

Hello Neal,

I have now returned from vacation, and have looked at my problem some more. I have partitioned my app in to working sets which I select via conditional compilation, depending on what I am doing. This enables me to keep working, but does not solve my problem. I have reduced symbol sizes, which helped a bit, but if I were to persue this to the point at which it provided some real relief, my code would unreadable.

I have pondered cutting my app into separate programs which I would call with sysAppLaunch as overlays, but I cannot get sysAppLannch to work on even a trivial pair of forth programs.

Is there some way of expanding the dictionary?

If not, is it possible to call one forth app from another via sysAppLaunch?

As far as sendig my source goes, it is in 75 files and somewhat inconvenient to collect from the memo database. And I am quite sure that the dictionary is really full.

Regards, mrr

Re: Dictionary Overflow

Posted by [Neal Bridges](#) on September 26, 1999 at 13:40:30:

In Reply to: [Re: Dictionary Overflow](#) posted by Michael Rowe on September 26, 1999 at 13:23:27:

> I have now returned from vacation, and have looked at my problem some more.
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> compilation, depending on what I am doing. This enables me to keep working,
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> a trivial pair of forth programs.

I have some source which implements sysAppLaunch that I can share, but that's not an ideal solution for you at any rate.

> Is there some way of expanding the dictionary?

Yes -- I have made an interim update that I'll forward to you to work with.

> As far as sendig my source goes, it is in 75 files and somewhat inconvenient
> to collect from the memo database. And I am quite sure that the dictionary
> is really full.

I'm quite sure also, at 75 files (!) -- my offer to look at it was to perhaps to help find ways to factor the code. One easy way to gather the source would be to make a MemoPad Archive (.MPA) file using the Palm Desktop software; however, the update I've mailed you may well solve your problem. Let me know.

Neal

Re: Dictionary Overflow

Posted by [Michael Rowe](#) on September 28, 1999 at 06:31:11:

In Reply to: [Re: Dictionary Overflow](#) posted by Neal Bridges on September 26, 1999 at 13:40:30:

> > I have now returned from vacation, and have looked at my problem some more.
> > I have partitioned my app in to working sets which I select via conditional
> > compilation, depending on what I am doing. This enables me to keep working,
> > but does not solve my problem. I have reduced symbol sizes, which helped
> > a bit, but if I were to persue this to the point at which it provided some
> > real relief, my code would unreadable.

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> > a trivial pair of forth programs.

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> help find ways to factor the code. One easy way to gather the source would
be
> to make a MemoPad Archive (.MPA) file using the Palm Desktop software;
however,
> the update I've mailed you may well solve your problem. Let me know.

> Neal

The new program version has fixed my memory problem. Thanks for your help!!

I noticed that if I compile a certain module, I get an error message: "DataMgr.c line 2281 error closing DB", followed by a system reset. However, I have not had time to persue the matter further. I will investigate the matter further.

Regards, Michael Rowe

Re: Dictionary Overflow

Posted by [Neal Bridges](#) on September 28, 1999 at 09:07:29:

In Reply to: [Re: Dictionary Overflow](#) posted by Michael Rowe on September 28, 1999 at 06:31:11:

> The new program version has fixed my memory problem. Thanks for your help!!
> I noticed that if I compile a certain module, I get an error message:
> "DataMgr.c line 2281 error closing DB", followed by a system reset.
> However, I have not had time to persue the matter further. I will
> investigate the matter further.

Let me know if you need help tracking down the problem. Glad to help.

Neal

String resource

Posted by [Dave Bennett](#) on September 10, 1999 at 15:32:41:

I want to create a text area for user input that is greater the 254 bytes. I can't find much information about the String resource. Is this what I want? I'm really looking for something akin to the input area in a memo pad file. While my application will typically have 20 - 50 characters in a string, I want to be able to allow bodies of text. Thanks for any advice.

--

Dave Bennett

Re: String resource

Posted by [Neal Bridges](#) on September 10, 1999 at 15:40:16:

In Reply to: [String resource](#) posted by Dave Bennett on September 10, 1999 at 15:32:41:

> I want to create a text area for user input that is greater the 254 bytes. I
> can't find much information about the String resource. Is this what I want?
I'm
> really looking for something akin to the input area in a memo pad file. While
my
> application will typically have 20 - 50 characters in a string, I want to be
> able to allow bodies of text. Thanks for any advice.

The input area in the Memo Pad is a field object. The scrollbars are handled separately, as is scrolling. The source to the Memo Pad application is available from 3Com, and may help provide some guidance. It's not as simple as simply asking the OS for a scrollable text-entry area; it's a shame that it's not that simple, but there it is.

Neal

Re: String resource

Posted by [Dave Bennett](#) on September 10, 1999 at 16:32:03:

In Reply to: [Re: String resource](#) posted by Neal Bridges on September 10, 1999 at 15:40:16:

> > I want to create a text area for user input that is greater the 254 bytes. I
> > can't find much information about the String resource. Is this what I want?
> I'm
> > really looking for something akin to the input area in a memo pad file.
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> my
> > application will typically have 20 - 50 characters in a string, I want to be
> > able to allow bodies of text. Thanks for any advice.

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> separately, as is scrolling. The source to the Memo Pad application is
> available from 3Com, and may help provide some guidance. It's not as simple
as
> simply asking the OS for a scrollable text-entry area; it's a shame that it's
> not that simple, but there it is.

> Neal

Ugh. What about something like either a simple input field? or letting them select a memo? Does that sound feasible. If it was short, they could paste it or

write it, if long, they could create a memo that I'd grab. Does that sound realistic? (And of course, how'd I go about it? :))

--

Dave Bennett

Re: String resource

Posted by [Neal Bridges](#) on September 12, 1999 at 11:36:58:

In Reply to: [Re: String resource](#) posted by Dave Bennett on September 10, 1999 at 16:32:03:

> Ugh. What about something like either a simple input field? or letting them
> select a memo? Does that sound feasible. If it was short, they could paste it
or
> write it, if long, they could create a memo that I'd grab. Does that sound
> realistic? (And of course, how'd I go about it? :))

A non-scrollable multi-line field is straightforward enough; you can create such a field resource using RsrcEdit. Selecting a memo from a list is trickier, because there could be one memo or a thousand in the database. Ron Doerfler wrote such a routine in his ActiveKey application.

To read the text a memo once one is selected, look at *newmemo.txt* in the File Area.

Neal

Peeking under the Stack

Posted by [Barron Snyder](#) on September 10, 1999 at 15:01:24:

While playing around with some of the common words, I noticed that I could go below the stack. For example, when I type (with an empty stack):

```
1 SWAP .S
```

I get:

```
<1> 24944
```

Where is it pulling this number from? Is it a memory address or what is in a memory address? Is the '1' that I put on the stack now there? ('Cuz if I type SWAP again, my '1' comes back...)

Curious,

Barron

Re: Peeking under the Stack

Posted by [Neal Bridges](#) on September 10, 1999 at 15:04:22:

In Reply to: [Peeking under the Stack](#) posted by Barron Snyder on September 10, 1999 at 15:01:24:

> While playing around with some of the common words, I noticed that I could go
> below the stack. For example, when I type (with an empty stack):

> 1 SWAP .S

> I get:

> <1> 24944

> Where is it pulling this number from? Is it a memory address or what is in a
> memory address? Is the '1' that I put on the stack now there? ('Cuz if I type
> SWAP again, my '1' comes back...)

It's pulling it from memory beyond the end of the stack. It's arbitrary and not
of any use.

Neal

Re: Peeking under the Stack

Posted by [Barron Snyder](#) on September 10, 1999 at 15:09:19:

In Reply to: [Re: Peeking under the Stack](#) posted by Neal Bridges on September 10, 1999 at 15:04:22:

> It's pulling it from memory beyond the end of the stack. It's arbitrary
> and not of any use.

> Neal

If I leave my '1' there (below the stack), will it mess up some other app or
its data?

Thanks,
Barron

Re: Peeking under the Stack

Posted by [Neal Bridges](#) on September 10, 1999 at 15:38:06:

In Reply to: [Re: Peeking under the Stack](#) posted by Barron Snyder on September 10, 1999 at 15:09:19:

>
> > It's pulling it from memory beyond the end of the stack. It's arbitrary
> > and not of any use.

> > Neal

> If I leave my 'l' there (below the stack), will it mess up some other app or
> its data?

No. A major stack underflow would corrupt the system stack and cause a fatal error, but wouldn't affect any other application's data. Application data is kept in 'storage RAM' which is protected from accidental changes.

Neal

coords@ question

Posted by [Matthew Blair](#) on September 10, 1999 at 13:13:17:

I want to capture the penDownEvent and check to see if the pen landed in a certain cell on my table. I was testing it out interactively last night, with the following procedure:

```
needs Events
500 (ekey)
```

```
(tap pen somewhere)
```

```
coords@
.s
```

After the .s, it appeared that the y-coordinate was sometimes > 160. Are the (x,y) coordinates returned by coord@ measured in pixels or something else?

Thanks,

Matthew

Re: coords@ question

Posted by [Neal Bridges](#) on September 10, 1999 at 13:54:41:

In Reply to: [coords@ question](#) posted by Matthew Blair on September 10, 1999 at 13:13:17:

```
> I want to capture the penDownEvent and check to see if the pen
> landed in a certain cell on my table. I was testing it out
> interactively last night, with the following procedure:
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>
> (tap pen somewhere)
>
> coords@
> .s
>
> After the .s, it appeared that the y-coordinate was sometimes > 160.
> Are the (x,y) coordinates returned by coord@ measured in pixels or
> something else?
```

Pixels, but there are 240 pixels as measured all the way to the bottom of the graffiti area. '160 max' can be used to ensure an upper limit.

Neal

Re: coords@ question

Posted by [Neal Bridges](#) on September 10, 1999 at 14:02:04:

In Reply to: [Re: coords@ question](#) posted by Neal Bridges on September 10, 1999 at 13:54:41:

```
> > I want to capture the penDownEvent and check to see if the pen
> > landed in a certain cell on my table. I was testing it out
> > interactively last night, with the following procedure:
> >
> > needs Events
> > 500 (ekey)
> >
> > (tap pen somewhere)
> >
> > coords@
> > .s
> >
```

> > After the .s, it appeared that the y-coordinate was sometimes > 160.
> > Are the (x,y) coordinates returned by coord@ measured in pixels or
> > something else?

> Pixels, but there are 240 pixels as measured all the way to the bottom of the
> graffiti area. '160 max' can be used to ensure an upper limit.

Correction -- my IIIx will go from 0 at the top of the screen to 215 at the
bottom edge of the Graffiti area.

Neal

Re: coords@ question

Posted by [Matthew Blair](#) on September 10, 1999 at 14:09:18:

In Reply to: [Re: coords@ question](#) posted by Neal Bridges on September 10, 1999
at 14:02:04:

> > > I want to capture the penDownEvent and check to see if the pen
> > > landed in a certain cell on my table. I was testing it out
> > > interactively last night, with the following procedure:

> > >
> > > needs Events
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> > Pixels, but there are 240 pixels as measured all the way to the bottom of
the
> > graffiti area. '160 max' can be used to ensure an upper limit.

> Correction -- my IIIx will go from 0 at the top of the screen to 215 at the
> bottom edge of the Graffiti area.

> Neal

Is the max number of pixels the same from model to model?

Specifically, is the usable screen area 160x160 for every palm?

Is the screen area + Graffiti 160x215 for every palm?

Matt

Re: coords@ question

Posted by [Neal Bridges](#) on September 10, 1999 at 14:16:22:

In Reply to: [Re: coords@ question](#) posted by Matthew Blair on September 10, 1999 at 14:09:18:

- > Is the max number of pixels the same from model to model?
- > Specifically, is the usable screen area 160x160 for every palm?
- > Is the screen area + Graffiti 160x215 for every palm?

Looks like 160x216, for all the models to date. Bear in mind the various silk-screened areas are active -- tap on the calculator button, the calculator will come up; this makes the region 160..216 (Y) not generally useful in an application.

Neal

Re: coords@ question

Posted by [Ron Doerfler](#) on September 10, 1999 at 15:20:41:

In Reply to: [Re: coords@ question](#) posted by Neal Bridges on September 10, 1999 at 14:16:22:

Hi,

- > > Is the max number of pixels the same from model to model?
- > > Specifically, is the usable screen area 160x160 for every palm?
- > > Is the screen area + Graffiti 160x215 for every palm?
- > Looks like 160x216, for all the models to date. Bear in mind the various
- > silk-screened areas are active -- tap on the calculator button, the calculator
- > will come up; this makes the region 160..216 (Y) not generally useful in an
- > application.

I might mention a couple of things here to save someone else from some effort.

First, I have found an anomaly on the X-value, at least with my Pilot that has the PalmIII upgrade. It turns out that the leftmost edge of the glass (outside the display area!) will return 0, and then all pixels as you move right to the display area will return 0 until you get there (or one pixel before).

Then you get a 1, and then the next pixel is 0, and then it counts up to 159 at the right edge of the display area. Then it gives you 160, and then 159 to the right edge of the glass. Go figure. Anyway, it had me fooled because I tapped the left edge of the glass to get the minimum value (0) and then the right edge to get the maximum (159), which seemed like the reasonable range of X-values. However, I found later that tapping that one pixel that returns 160 at the right edge of the display area crashed my code because it was out of range. So I guess the upshot is that you should do a "159 min" after you read the X-value if that makes a difference to your code. Whew!

Also, I wanted to use the Graffiti area in my ActiveKey app to switch my screens. There is no way to intercept the pen-down event in the Graffiti area, even with your own event handler, since it is a hardware interrupt to the Graffiti recognition routines. So I disabled Graffiti through an API command. Even then, though, the pen-down event does not get to the event handler--it seems to be ignored. Therefore, if you need to detect pen events in the Graffiti area, you have to detect a *pen-up*, and then test to see if the Y-value is greater than 160. It has to be in the Graffiti entry box, though, because the silkscreen keys (Menu, etc) are not disabled when Graffiti is disabled.

Anyway, that's one time when the lower region of the display might be useful to you.

Ron

Visor (Palm clone)

Posted by [E. Ross Helton](#) on September 10, 1999 at 10:56:30:

Hi Neal;

Looks like you have a new place for Quartus. The Visor which is to be released looks as if it will be a great place to use Quartus.

Make it a good day!

Ross

- [New Visor](#)

Re: Visor (Palm clone)

Posted by [Neal Bridges](#) on September 10, 1999 at 11:51:49:

In Reply to: [Visor \(Palm clone \)](#) posted by E. Ross Helton on September 10, 1999 at 10:56:30:

> Looks like you have a new place for Quartus. The Visor which is to be released

> looks as if it will be a great place to use Quartus.

I agree. I'll certainly integrate any new Visor features into Quartus Forth.

Neal

Re: Visor (Palm clone)

Posted by [E. Ross Helton](#) on September 10, 1999 at 11:00:12:

In Reply to: [Visor \(Palm clone \)](#) posted by E. Ross Helton on September 10, 1999 at 10:56:30:

Hi Neal;

More information about the Visor

Make it a good day!

Ross

- [More Visor info](#)

Fatal Exception when including a file

Posted by [Matthew Blair](#) on September 10, 1999 at 08:46:34:

When I load the following code into Quartus, I'm getting a Fatal Exception error. I think that it has to do with the do-event loop, but I don't know what's wrong with it. Can anybody else spot it?

Thanks,

Matthew

```
needs Events
needs ids
needs resources

needs LCD
needs jhutt-table
needs time_funcs

\ form constants
needs formconst

\ define resources
(ID) JhUt (ID) rsrc use-resources

variable trun
2variable mfp

17 constant LCD_x
117 constant LCD_y

: update-time ( -- )
get-ztime time-diff
get-dtime d+
time>str LCD_x LCD_y LCD-out
;

: do-event ( ekey -- )
trun @ if
update-time
then

ctlSelectEvent = if
event >abs itemid

dup pOK = if
mfp 2@ FrmReturnToForm

else
dup tstart = if

trun @ false = if
TimGetSeconds
put-ztime
true trun !
then

else
tstop = if
false trun !
get-ztime time-diff
get-dtime d+
put-dtime

then
then ;
```

```
: go
TTForm ShowForm
false trun !
\ init delta_time and LCD display
0 s>d 2dup put-dtime
time>str LCD_x LCD_y LCD-out
init-table
begin
98. (ekey)
do-event
again ;
```

Re: Fatal Exception when including a file

Posted by [Neal Bridges](#) on September 10, 1999 at 09:17:51:

In Reply to: [Fatal Exception when including a file](#) posted by Matthew Blair on September 10, 1999 at 08:46:34:

```
> When I load the following code into Quartus, I'm getting
> a Fatal Exception error. I think that it has to do with
> the do-event loop, but I don't know what's
> wrong with it. Can anybody else spot it?
```

Have you done 'needs safe' at the top to see if you have a control-structure mismatch? I'll load it into my system later today and see what happens when it compiles.

Neal

Re: Fatal Exception when including a file

Posted by [Matthew Blair](#) on September 10, 1999 at 09:27:15:

In Reply to: [Re: Fatal Exception when including a file](#) posted by Neal Bridges on September 10, 1999 at 09:17:51:

```
> > When I load the following code into Quartus, I'm getting
> > a Fatal Exception error. I think that it has to do with
> > the do-event loop, but I don't know what's
> > wrong with it. Can anybody else spot it?
```

```
> Have you done 'needs safe' at the top to see if you have a control-structure
> mismatch? I'll load it into my system later today and see what happens when
it
> compiles.
```

> Neal

I just loaded 'safe' into the system -- that's a handy utility!
Indeed, I have a control-structure mismatch. Back to the
drawing board!

Thanks,

Matt

Re: Fatal Exception when including a file

Posted by [Neal Bridges](#) on September 10, 1999 at 09:32:42:

In Reply to: [Re: Fatal Exception when including a file](#) posted by Matthew Blair
on September 10, 1999 at 09:27:15:

> I just loaded 'safe' into the system -- that's a handy utility!
> Indeed, I have a control-structure mismatch. Back to the
> drawing board!

That's a pretty hairy nested conditional structure you've built there; factor
that into sections and you'll be in good shape.

Neal

Re: Fatal Exception when including a file

Posted by [Matthew Blair](#) on September 10, 1999 at 09:59:42:

In Reply to: [Re: Fatal Exception when including a file](#) posted by Neal Bridges on
September 10, 1999 at 09:32:42:

> > I just loaded 'safe' into the system -- that's a handy utility!
> > Indeed, I have a control-structure mismatch. Back to the
> > drawing board!

> That's a pretty hairy nested conditional structure you've built there; factor
> that into sections and you'll be in good shape.

> Neal

Here's my attempt at trimming the complexity down. Now I get a fatal
exception immediately upon execution.

Would this be better if I used the *condthens* package?

I've looked at it, but I'm not quite sure what it does or how
to use it.

Matt

```
: do-event ( ekey -- )
  trun @ if
    update-time
  then

  ctlSelectEvent = if
    event >abs itemid

    dup pOK = if
      mfp 2@ FrmReturnToForm

    else
      dup tstart = if
        start-timer
      then

    else
      tstop = if
        stop-timer
      then

  then
then ;
```

Re: Fatal Exception when including a file

Posted by [Neal Bridges](#) on September 10, 1999 at 11:49:41:

In Reply to: [Re: Fatal Exception when including a file](#) posted by Matthew Blair on September 10, 1999 at 09:59:42:

> Here's my attempt at trimming the complexity down. Now I get a fatal
> exception immediately upon execution.

>

```
> : do-event ( ekey -- )
>   trun @ if
>     update-time
>   then

>   ctlSelectEvent = if
>     event >abs itemid

>     dup pOK = if
>       mfp 2@ FrmReturnToForm
>
>   else
```

```
>     dup tstart = if
>         start-timer
>     then
>
>     else
>         tstop = if
>             stop-timer
>         then
>
>     then
> then ;
>
```

Looks to me like you're not doing a DUP before the 'tstop' comparison. You need to DUP before each test, and then DROP at the end of the structure.

condthens would help clarify your code. Here's a cond/thens version -- untested:

needs condthens

```
: do-event ( ekey -- )
  trun @ if update-time then
  ctlSelectEvent = if
    event >abs itemid
  cond
    dup pOK = if mfp 2@ FrmReturnToForm
    else dup tstart = if start-timer
    else dup tstop = if stop-timer
  thens
  drop
then ;
```

Neal

Re: Fatal Exception when including a file

Posted by [Matthew Blair](#) on September 10, 1999 at 13:02:56:

In Reply to: [Re: Fatal Exception when including a file](#) posted by Neal Bridges on September 10, 1999 at 11:49:41:

> >

```
> > : do-event ( ekey -- )
> >   trun @ if
> >     update-time
> >   then
> >
> >   ctlSelectEvent = if
```

```
> >      event >abs itemid
> >
> >      dup pOK = if
> >          mfp 2@ FrmReturnToForm
> >
> >      else
> >          dup tstart = if
> >              start-timer
> >          then
> >
> >      else
> >          tstop = if
> >              stop-timer
> >          then
> >
> >      then
> >  then ;
> >
```

> Looks to me like you're not doing a DUP before the 'tstop' comparison. You need

> to DUP before each test, and then DROP at the end of the structure.

It appears that my program is not even getting to the event loop. I traced the problem back to my table code (again!) I've attached the code at the end of this post and commented where I'm getting the error. It's really weird since I have not edited the table code for several days now (it was working fine before).

> *condthens* would help clarify your code. Here's a cond/thens version

```
--
> untested:
```

```
>
> needs condthens
>
> : do-event ( ekey -- )
>   trun @ if update-time then
>   ctlSelectEvent = if
>     event >abs itemid
>     cond
>       dup pOK = if mfp 2@ FrmReturnToForm
>       else dup tstart = if start-timer
>       else dup tstop = if stop-timer
>     thens
>     drop
>   then ;
>
```

> Neal

Thanks for the sample -- I've cut and pasted directly into my code. So basically, the way to use *condthens* is to

preface a block of if-then-else with cond,
and not use then keyword until the end of the block.
That certainly looks less confusing.

Thanks,

Matt

```
needs toolkit
needs formconst
needs Tables
needs backlight
needs facility
```

```
2variable tblptr
variable row
variable col
variable cellbounds
```

```
\ Fatal Exception error in this callback. Please note that
\ this is exactly the same as draw-time below, just displaying
\ a different string.
```

```
: draw-project
  callback
  2>r dup >r row ! dup >r col ! 2dup
  >rel cellbounds ! r> r> 2r>
  cellbounds @ cell+ @ \ THIS IS WHERE I GET A FATAL EXCEPTION ERROR
  cellbounds @ @
  s" budget " swap >abs
  WinDrawChars
end-callback ;
```

```
: draw-time
  callback
  2>r dup >r row ! dup >r col ! 2dup
  >rel cellbounds ! r> r> 2r>
  cellbounds @ cell+ @
  cellbounds @ @
  row @ s>d <# #s #> swap >abs
  WinDrawChars
end-callback ;
```

```
: init-table
  FrmGetActiveForm
  2dup 2>r ptable 2r>
  FrmGetObjectIndex
  rot rot
  FrmGetObjectPtr
  2dup tblptr 2!
  TblGetNumberOfRows

  0 do
    11 i tblptr 2@
```

```
TblSetRowHeight
customTableItem 0 i
tblptr 2@
TblSetItemStyle
customTableItem 1 i
tblptr 2@
TblSetItemStyle
true i tblptr 2@
TblSetRowSelectable
true i tblptr 2@
TblSetRowUsable
loop

['] draw-project xt>abs
0 tblptr 2@
TblSetCustomDrawProcedure
['] draw-time xt>abs
1 tblptr 2@
TblSetCustomDrawProcedure

true 0 tblptr 2@
TblSetColumnUsable
true 1 tblptr 2@
TblSetColumnUsable

FrmGetActiveForm
FrmDrawForm ;
```

until then en

Re: Fatal Exception when including a file

Posted by [Neal Bridges](#) on September 10, 1999 at 13:18:01:

In Reply to: [Re: Fatal Exception when including a file](#) posted by Matthew Blair on September 10, 1999 at 13:02:56:

```
> > : do-event ( ekey -- )
> > trun @ if update-time then
> > ctlSelectEvent = if
> > event >abs itemid
> > cond
> > dup pOK = if mfp 2@ FrmReturnToForm
> > else dup tstart = if start-timer
> > else dup tstop = if stop-timer
> > thens
> > drop
> > then ;
> >
```

> Thanks for the sample -- I've cut and pasted directly into my
> code. So basically, the way to use *condthens* is to
> preface a block of if-then-else with *cond*,
> and not use *then* keyword until the end of the block.
> That certainly looks less confusing.

I think you have the general idea, though 'then' isn't required as part of a *cond/thens* structure. Here's the same code, factored to make my point more clearly:

```
: HandleSelect ( itemid -- )
  cond
    dup pOK = if mfp 2@ FrmReturnToForm
    else dup tstart = if start-timer
    else dup tstop = if stop-timer
  then
  drop ;

: do-event ( ekey -- )
  trun @ if update-time then
  ctlSelectEvent = if
    event >abs itemid HandleSelect
  then ;
```

Neal

Re: Fatal Exception when including a file

Posted by [Matthew Blair](#) on September 10, 1999 at 13:06:43:

In Reply to: [Re: Fatal Exception when including a file](#) posted by Matthew Blair on September 10, 1999 at 13:02:56:

Neal,

Forget that last post -- on a hunch I removed the needs safe from the main file, and now the program works as expected.

I seem to remember an earlier thread which mentioned a similar conflict. Have you seen this before?

Thanks,

Matt

Re: Fatal Exception when including a file

Posted by [Neal Bridges](#) on September 10, 1999 at 13:52:55:

In Reply to: [Re: Fatal Exception when including a file](#) posted by Matthew Blair on September 10, 1999 at 13:06:43:

> Neal,
>
> Forget that last post -- on a hunch I removed the
> needs safe from the main file, and
> now the program works as expected.
>
> I seem to remember an earlier thread which mentioned
> a similar conflict. Have you seen this before?

Yes -- *safe* inserts extra code around certain words, which can cause problems in callbacks.

Neal

PalmOS App Launcher Info / Version No.

Posted by [Barry Ekstrand](#) on September 10, 1999 at 08:08:22:

Does anyone know how the PalmOS App Launcher gets the version number of a program (seen when you choose App / Info and then Version)? The value shown for is not in sync with re-compiled updates, so there must be a flag or something that needs to be set. Any help is appreciated.

Regards,

Barry Ekstrand

Re: PalmOS App Launcher Info / Version No.

Posted by [Neal Bridges](#) on September 10, 1999 at 09:20:31:

In Reply to: [PalmOS App Launcher Info / Version No.](#) posted by Barry Ekstrand on September 10, 1999 at 08:08:22:

> Does anyone know how the PalmOS App Launcher gets the version number of a
> program (seen when you choose App / Info and then Version)? The value shown
> for
> is not in sync with re-compiled updates, so there must be a flag or something
> that needs to be set. Any help is appreciated.

The version string is retrieved from a resource called 'tver' with an ID of 1 or 1000 (your choice).

Neal

Re: PalmOS App Launcher Info / Version No.

Posted by [Erwin Schomburg](#) on September 10, 1999 at 13:51:21:

In Reply to: [Re: PalmOS App Launcher Info / Version No.](#) posted by Neal Bridges on September 10, 1999 at 09:20:31:

> > Does anyone know how the PalmOS App Launcher gets the version number of a
> > program (seen when you choose App / Info and then Version)? The value shown
> for
> > is not in sync with re-compiled updates, so there must be a flag or
something
> > that needs to be set. Any help is appreciated.

> The version string is retrieved from a resource called 'tver' with an ID of 1
or
> 1000 (your choice).

> Neal

Not really "your choice" if you want to outsmart utilities like FPSPro, some
expect 1 tver, others 1000 tver. I am nowadys setting up both /shrug/

/Erwin

Event handling and dialog boxes

Posted by [Matthew Blair](#) on September 09, 1999 at 07:54:19:

Hi,

I've a couple of questions today :^)

1) How do I invoke a modal dialog? Is it as simple as
FrmGetFrmPtr with the ID of the form I wish to display,
and then a call to FrmDoDialog?

2) The dialog I want to display has a field which I
want the user to enter information into. How do I handle
events relating to that dialog? It appears that the
FrmDoDialog returns an unsigned integer specifying
which button was pushed; this seems to imply that any
events generated in the dialog are not passed to the

application.

3) I've noticed that many of the event handlers written in other languages return a "handled" flag to the OS. Does Quartus do this by default? If not, where would I specify the "handled" flag?

Thanks,

Matt

Re: Event handling and dialog boxes

Posted by [Neal Bridges](#) on September 09, 1999 at 09:35:57:

In Reply to: [Event handling and dialog boxes](#) posted by Matthew Blair on September 09, 1999 at 07:54:19:

> 1) How do I invoke a modal dialog? Is it as simple as
> FrmGetFrmPtr with the ID of the form I wish to display,
> and then a call to FrmDoDialog?

Check out *input.txt* in the File Area for an example of this.

> 2) The dialog I want to display has a field which I
> want the user to enter information into. How do I handle
> events relating to that dialog? It appears that the
> FrmDoDialog returns an unsigned integer specifying
> which button was pushed; this seems to imply that any
> events generated in the dialog are not passed to the
> application.

Again, *input.txt* shows a way to do this. If you were to use *FrmDoDialog*, however, you're correct -- dialog events are consumed until the dialog exits. This is fine in many cases; when it's not, fortunately there are alternatives.

> 3) I've noticed that many of the event handlers written
> in other languages return a "handled" flag to the OS.
> Does Quartus do this by default? If not, where would
> I specify the "handled" flag?

Quartus Forth handles all event interaction within EKEY. The only time you might need to explicitly return such a flag is in a callback -- there it'd be done via

0. d0!

or

1. d0!

Neal

Re: Event handling and dialog boxes

Posted by [Matthew Blair](#) on September 09, 1999 at 10:30:26:

In Reply to: [Re: Event handling and dialog boxes](#) posted by Neal Bridges on September 09, 1999 at 09:35:57:

> > 1) How do I invoke a modal dialog? Is it as simple as
> > FrmGetFrmPtr with the ID of the form I wish to display,
> > and then a call to FrmDoDialog?
> Check out *input.txt* in the File Area for an example of this.

This is exactly what I need to do! Thanks, Neal.

I seem to be having another problem, though, not related to Quartus. I have defined a form almost similar to the one used by *input.txt*. However, when I preview it (in RsrcEdit and at execution), all I see is the blank form that I defined and the title bar. Other controls are not shown. Is this a common error? The only discernable difference between the two forms seems to be the dimensions.

Thanks,

Matt

Re: Event handling and dialog boxes

Posted by [Neal Bridges](#) on September 09, 1999 at 10:54:01:

In Reply to: [Re: Event handling and dialog boxes](#) posted by Matthew Blair on September 09, 1999 at 10:30:26:

> I seem to be having another problem, though, not related to Quartus.
> I have defined a form almost similar to the one used by *input.txt*.
> However, when I preview it (in RsrcEdit and at execution), all
> I see is the blank form that I defined and the title bar.
> Other controls are not shown. Is this a common error?
> The only discernable difference between the two forms seems to be the
> dimensions.

There must be some other difference. Is it set to be modal?

Neal

Re: Event handling and dialog boxes

Posted by [Neal Bridges](#) on September 09, 1999 at 11:14:29:

In Reply to: [Re: Event handling and dialog boxes](#) posted by Neal Bridges on September 09, 1999 at 10:54:01:

> > I seem to be having another problem, though, not related to Quartus.
> > I have defined a form almost similar to the one used by *input.txt*.
> > However, when I preview it (in RsrcEdit and at execution), all
> > I see is the blank form that I defined and the title bar.
> > Other controls are not shown. Is this a common error?
> > The only discernable difference between the two forms seems to be the
> > dimensions.

> There must be some other difference. Is it set to be modal?

Had another thought. Control coordinates are relative to the top of the form --
could be that you're positioning them relative to the top of the screen, and
hence placing them outside of the form itself.

Neal

Re: Event handling and dialog boxes

Posted by [Matthew Blair](#) on September 09, 1999 at 12:16:40:

In Reply to: [Re: Event handling and dialog boxes](#) posted by Neal Bridges on September 09, 1999 at 11:14:29:

> > > I seem to be having another problem, though, not related to Quartus.
> > > I have defined a form almost similar to the one used by
input.txt.
> > > However, when I preview it (in RsrcEdit and at execution), all
> > > I see is the blank form that I defined and the title bar.
> > > Other controls are not shown. Is this a common error?
> > > The only discernable difference between the two forms seems to be the
> > > dimensions.

> > There must be some other difference. Is it set to be modal?

> Had another thought. Control coordinates are relative to the top of the form --
--
> could be that you're positioning them relative to the top of the screen, and
> hence placing them outside of the form itself.

> Neal

That's exactly it! I'm glad I read this message before responding
to the previous one! I read the previous message before lunch, and I

planned to follow up with a listing of the "vital statistics" of your form and my form to see if that would trigger anything. Thanks again! I think I'm going to have to send you a royalty check if/when I ever get this thing going -- that'll put you on your second million :^)

By the way, I'm encountering a Quartus error that is inconsistent, i.e., the error does not have a specific frequency. What happens is that sometimes when I start up Quartus, and type include filename, Quartus will start to compile and then respond with "xxx - no such file" or something to that effect (but it's always a complaint about a missing file). When I exit Quartus, and enter Quartus again I encounter no problems (I'm not mucking with the files in between these steps).

The only thought I had was that I have SwitchHack enabled. Perhaps when I switch from MemoPad to Quartus, something is not getting closed? I should add, though, that the file in question (it's always a needed file, but not the same one each time) is not always edited by me, i.e., I've not opened that file in MemoPad before switching to Quartus.

This is not a major problem for me -- but I thought you would like to know since you seem to be pretty concerned with potential conflicts/bugs.

Thanks again for all your help.

Matt

Re: Event handling and dialog boxes

Posted by [Neal Bridges](#) on September 09, 1999 at 12:33:40:

In Reply to: [Re: Event handling and dialog boxes](#) posted by Matthew Blair on September 09, 1999 at 12:16:40:

> That's exactly it! I'm glad I read this message before responding
> to the previous one! I read the previous message before lunch, and I
> planned to follow up with a listing of the "vital statistics" of your
> form and my form to see if that would trigger anything. Thanks again!
> I think I'm going to have to send you a royalty check if/when I ever
> get this thing going -- that'll put you on your second million :^)

That's a nice thought. :)

> By the way, I'm encountering a Quartus error that is inconsistent, i.e.,
> the error does not have a specific frequency. What happens is that
> sometimes when I start up Quartus, and type include filename,
> Quartus will start to compile and then respond with "xxx - no such file"
> or something to that effect (but it's always a complaint about a missing
> file). When I exit Quartus, and enter Quartus again I encounter no
> problems (I'm not mucking with the files in between these steps).

If you're entering graffiti characters while the files are being included, this will sometimes trip it up. Beyond that, running AfterBurner or another accelerator can cause this also.

SwitchHack doesn't cause this problem.

> This is not a major problem for me -- but I thought you would like to
> know since you seem to be pretty concerned with potential conflicts/bugs.

I appreciate the heads up!

Neal

Re: Event handling and dialog boxes

Posted by [Matthew Blair](#) on September 09, 1999 at 12:56:16:

In Reply to: [Re: Event handling and dialog boxes](#) posted by Neal Bridges on September 09, 1999 at 12:33:40:

> > By the way, I'm encountering a Quartus error that is inconsistent, i.e.,
> > the error does not have a specific frequency. What happens is that
> > sometimes when I start up Quartus, and type include filename,
> > Quartus will start to compile and then respond with "xxx - no such file"
> > or something to that effect (but it's always a complaint about a missing
> > file). When I exit Quartus, and enter Quartus again I encounter no
> > problems (I'm not mucking with the files in between these steps).

> If you're entering graffiti characters while the files are being included,
this
> will sometimes trip it up. Beyond that, running AfterBurner or another
> accelerator can cause this also.

> SwitchHack doesn't cause this problem.

> Neal

You just described my modus operandi, that is, scribble the startup word while waiting for the compilation to end. I will cease and desist, and report back to you if I encounter the problem again.

Matt

Thens option

Posted by [E. Ross Helton](#) on September 08, 1999 at 18:09:53:

Hi;

Can someone tell me what is wrong with this picture? The following code is supposed to work when a drop down menu is selected (etc: About) and then bring up the file related to it (aboutstring).

Tried it several different ways. Most of the time it just crashes the Pilot Help!!!

+++++

```
: ProcessEvents ( ekey -- )
cond
  menuEvent = if
    event >abs itemid
  dup AboutMenuItem = if
    AboutString FrmHelp else
  dup HelpMenuItem = if
    HelpString FrmHelp else
thens ;
```

+++++

Make it a good day!
Ross

Re: Thens option

Posted by [Neal Bridges](#) on September 08, 1999 at 19:14:27:

In Reply to: [Thens option](#) posted by E. Ross Helton on September 08, 1999 at 18:09:53:

> Can someone tell me what is wrong with this picture? The following code is
> supposed to work when a drop down menu is selected (etc: About) and then bring
> up the file related to it (aboutstring).

>
> Tried it several different ways. Most of the time it just crashes the Pilot
> Help!!!

>

```
> : ProcessEvents ( ekey -- )
> cond
> menuEvent = if
>   event >abs itemid
>   dup AboutMenuItem = if
>     AboutString FrmHelp else
>   dup HelpMenuItem = if
>     HelpString FrmHelp else
> thens ;
>
```

You're not doing a DROP to abandon the value at the end, and so you're leaving a menuItem on the stack, which is likely causing problems in the calling routine.

```
: ProcessEvents ( ekey -- )
  menuEvent = if
    event >abs itemid
    cond
      dup AboutMenuItem = if
        AboutString FrmHelp else
      dup HelpMenuItem = if
        HelpString FrmHelp else
    thens
    drop \ important to drop the menu item number
  then ;
```

You see, if it's not a menuEvent, you have no menu item on the stack. And if it is a menuEvent, you need to discard the menu item when you're done testing it.

Re: Thens option

Posted by [E. Ross Helton](#) on September 08, 1999 at 19:39:58:

In Reply to: [Re: Thens option](#) posted by Neal Bridges on September 08, 1999 at 19:14:27:

Hi Neal;

Thanks for the help, but we're not there yet. I had tried the drop but I didn't have the final 'then'.

The problem, not is I have put the lines in exactly as you have them written below and the systems crashes semihard. I have to use paper clip.

I get the crash when I try to open one of the two menu items. The menus work, because I can access in another version of this program with a longer set of code which uses case to make it work.

Do you have any idea why the code below doesn't work?

> You're not doing a DROP to abandon the value at the end, and so you're leaving
a
> menuItem on the stack, which is likely causing problems in the calling
routine.

```
>
: ProcessEvents ( ekey -- )
>   menuItem = if
>     event >abs itemid
>     cond
>       dup AboutMenuItem = if
>         AboutString FrmHelp else
>       dup HelpMenuItem = if
>         HelpString FrmHelp else
>     thens
>     drop \ important to drop the menu item number
>   then ;
>
```

> You see, if it's not a menuItem, you have no menu item on the stack. And if
it
> is a menuItem, you need to discard the menu item when you're done testing it.

Make it a good day!

Ross

Re: Thens option

Posted by [Neal Bridges](#) on September 08, 1999 at 19:46:05:

In Reply to: [Re: Thens option](#) posted by E. Ross Helton on September 08, 1999 at 19:39:58:

> Hi Neal;

> Thanks for the help, but we're not there yet. I had tried the drop but I
didn't
> have the final 'then'.

> The problem, not is I have put the lines in exactly as you have them written
> below and the systems crashes semihard. I have to use paper clip.

> I get the crash when I try to open one of the two menu items. The menus
work,
> because I can access in another version of this program with a longer set of
> code which uses case to make it work.

> Do you have any idea why the code below doesn't work?

[code snipped]

That code does work, but apparently not in the larger context of your application. Can you send me the source file?

Neal

Re: Thens option

Posted by [E. Ross Helton](#) on September 08, 1999 at 19:54:54:

In Reply to: [Re: Thens option](#) posted by Neal Bridges on September 08, 1999 at 19:46:05:

Hi Neal;

I will email that to you as soon as I can.

Thanks

Make it a good day!

Ross

> That code does work, but apparently not in the larger context of your
> application. Can you send me the source file?

Hurray!!!! Thanks A Bunch Got it!!!

Posted by [E. Ross Helton](#) on September 08, 1999 at 20:13:05:

In Reply to: [Re: Thens option](#) posted by E. Ross Helton on September 08, 1999 at 19:54:54:

Hi Neal;

>

> > That code does work, but apparently not in the larger context of your
> > application. Can you send me the source file?

The code does trully work and it works in context of my program! What happened was there was another occurance of the work 'drop' and it hadn't gotten deleted. It was in the ekey line which started the code you and I were discussing. When use with my other code it worked correctly, but with the 'thens' code it bombed.

Thanks this 'thens' option will save me a lot of coding. I can do away with a lot of the case and other if type of code lines.

Again I want to say thanks! And Again Thanks!!

Make it a good day! (you certainly have helped mine)

Ross

Re: Hurray!!!! Thanks A Bunch Got it!!!

Posted by [Neal Bridges](#) on September 08, 1999 at 20:21:34:

In Reply to: [Hurray!!!! Thanks A Bunch Got it!!!](#) posted by E. Ross Helton on September 08, 1999 at 20:13:05:

> Again I want to say thanks! And Again Thanks!!

Glad it's working!

Neal

More annoying newbie questions

Posted by [E.](#) on September 07, 1999 at 18:13:41:

When I'm testing new words, I often use something like this in my loops:

```
...do...
  pause
loop
```

Where pause is

```
: pause
  begin
    0. (ekey) 0=
  until
  begin
    ekey?
  until
  ekey drop
;
```

This (barring any mistakes introduced because I'm not near my Palm and thus working from memory) works adequately.

I figured I could save a little bit of space and teach myself something useful if I wrote a word step-loop, that did the same thing, but without the need to call pause.

I got it to work, but it's really horribly ugly and there's GOT to be a better

way, I believe.

Using gforth (not being near my palm), I changed pause to:

```
: pause
  begin
    key?
  until
  key
  drop
;
```

I had to do that because gforth lacks ekey and friends, y'see.

Now, when I converted that into step-loop, I get the following:

```
: step-loop
  postpone begin
  postpone key?
  postpone until
  postpone key
  postpone drop
  postpone loop
; immediate
```

And to me, that looks really ugly.

Please tell me there's a better way that I just can't figure out.

-E (wishing he had brought his Brodie along on the trip)

Re: More annoying newbie questions

Posted by [Neal Bridges](#) on September 08, 1999 at 00:43:18:

In Reply to: [More annoying newbie questions](#) posted by E. on September 07, 1999 at 18:13:41:

> When I'm testing new words, I often use something like this in my loops:

What you've posted looks like a couple of pretty long ways of doing
key drop

key is a continuous loop that goes nowhere until a character is
received. No begin/until, key? ekey? or others are required to achieve what
you're after.

Neal

Re: More annoying newbie questions

Posted by [E.](#) on September 08, 1999 at 04:43:52:

In Reply to: [Re: More annoying newbie questions](#) posted by Neal Bridges on September 08, 1999 at 00:43:18:

> No begin/until, key? ekey? or others are required to achieve what
> you're after.

Not to accomplish that effect, certainly. But to teach me the basic principles of POSTPONE and IMMEDIATE (which I certainly meant to mention, if I didn't), it is a bit more helpful.

Ah well.

-E (going to look up the various Forth tutorials on the web)

Re: More annoying newbie questions

Posted by [Neal Bridges](#) on September 08, 1999 at 09:24:46:

In Reply to: [Re: More annoying newbie questions](#) posted by E. on September 08, 1999 at 04:43:52:

> > No begin/until, key? ekey? or others are required to achieve what
> > you're after.

> Not to accomplish that effect, certainly. But to teach me the basic principles

> of POSTPONE and IMMEDIATE (which I certainly meant to

> mention, if I didn't), it is a bit more helpful.

> Ah well.

Ok, I didn't realize what you were asking. I can walk through the basics of POSTPONE and IMMEDIATE. However -- in the example you show, POSTPONE and IMMEDIATE add no value; you're just taking the long road to compiling a simple word.

Consider these versions of 'pause', all functionally equivalent and none offering greater functionality than the simple original version:

```
: pause key drop ;
```

This is the simplest; it will work in any circumstance.

```
: pause s" key drop" evaluate ; immediate
```

This version will behave as a macro -- as though you typed 'key drop' and pressed Return.

```
: pause postpone key postpone drop ; immediate
```

The Standard requires only that this last version will work while compiling. Under Quartus Forth, it happens to work whether you're compiling or interpreting. It appends the function of KEY and DROP to the current definition (or, under Quartus Forth, if not compiling, it simply executes KEY and DROP).

Neal

Re: More annoying newbie questions

Posted by [E.](#) on September 10, 1999 at 21:27:22:

In Reply to: [Re: More annoying newbie questions](#) posted by Neal Bridges on September 08, 1999 at 09:24:46:

> However -- in the example you show, POSTPONE and
> IMMEDIATE add no value; you're just taking the long road to compiling a
> simple word.

Perhaps Quartus (or the spec) has behavior different from gforth, then.

Removing all the POSTPONES and IMMEDIATEs from my definition of step-loop above gives me the following error:

```
in file included from :-1
./step.fth:20
  loop
  ^^^^
expected dest, do-dest or scope
```

And since I am rewriting loop, I need SOME sort of mechanism in there to prevent it from attempting compilation of loop at the time of definition, yes? That was my basic assumption, anyway.

gforth's builtin loop ends with

```
; immediate compile-only
```

I tried variations on this theme, but to no avail.

> Consider these versions of 'pause'

Hm. This seems to be a bit larger than I originally thought, and I am hesitant to use this forum for what seems to be basic Forth knowledge. I'll bone up on this on my own.

Thanks for your replies.

-E

Re: More annoying newbie questions

Posted by [Neal Bridges](#) on September 11, 1999 at 11:58:25:

In Reply to: [Re: More annoying newbie questions](#) posted by E. on September 10, 1999 at 21:27:22:

> > However -- in the example you show, POSTPONE and
> > IMMEDIATE add no value; you're just taking the long road to compiling a
> > simple word.

> Perhaps Quartus (or the spec) has behavior different from gforth, then.

> Removing all the POSTPONEs and IMMEDIATEs from my definition of
> step-loop above gives me the following error:

Same spec -- to do what you were doing the way you were doing it, yes, you need
POSTPONE and IMMEDIATE -- my point was that using that method is long and
convoluted. Perhaps I misunderstand what you're trying to achieve.

> Thanks for your replies.

No problem -- happy to entertain any questions relating to Forth.

Neal

Re: More annoying newbie questions

Posted by [E.](#) on September 11, 1999 at 19:41:36:

In Reply to: [Re: More annoying newbie questions](#) posted by Neal Bridges on
September 11, 1999 at 11:58:25:

> Perhaps I misunderstand what you're trying to achieve.

Trying to increase my understanding of Forth by messing around with things I
don't actually NEED to mess around with in order to write a working program,
basically.

Perhaps not the best way to learn, but it seems to work moderately well for me.

-E

Random Variables Package Available

Posted by [Matthew Burke](#) on September 07, 1999 at 08:40:29:

What are random variables? Well, you'll have to read the paper I wrote! (See the link below.)

Anyway since I've been asking so many questions (and believe me, I have a long list of qs I haven't gotten to yet), I thought I should offer something in return. So, also at the following link you can find Quartus files for doing random variables. I will email copies to Neal so that he can post them in the file area (if he finds them worthwhile :)

Matt

P.S. Ignore the rest of my web site. I don't even have enough time to do all the Quartus programming I want---you think I have time to finish any of the half-baked ideas I have for a web site?

- [Random Variables in Forth](#)

FldReleaseFocus - Fatal Error

Posted by [Steve Gibson](#) on September 06, 1999 at 09:11:53:

When my form loads and the fields get their data loaded into them (having been read from the preferences), the last field loaded always has the focus (the blinking cursor is in it). I'd like to have it so that after everything loads none of the fields have focus. I've been trying to use FldReleaseFocus to accomplish this. Unfortunately I keep getting a Fatal Error that requires a reset. Maybe this isn't the correct way to go about accomplishing this?

Here's what I've got so far:

```
: ReleaseFocus (fieldID -- )
  FrmGetActiveForm 2dup 2>r
  FrmGetObjectIndex
  2r@ FrmGetObjectPtr
  FldReleaseFocus FlushQueue ;
```

```
LoadForm
someField ReleaseFocus
```

I've tried it with and without the FlushQueue and get the same result. The stack is empty on exit.

Thanks in advance for any advice/ideas.

--Steve

Re: FldReleaseFocus - Fatal Error

Posted by [Neal Bridges](#) on September 06, 1999 at 09:44:17:

In Reply to: [FldReleaseFocus - Fatal Error](#) posted by Steve Gibson on September 06, 1999 at 09:11:53:

>

```
> : ReleaseFocus (fieldID -- )
>   FrmGetActiveForm 2dup 2>r
>   FrmGetObjectIndex
>   2r@ FrmGetObjectPtr
>   FldReleaseFocus FlushQueue ;
```

```
> LoadForm
> someField ReleaseFocus
>
```

It looks correct to me, though you shouldn't require FlushQueue. I use the shorthand in *Forms* to accomplish the same thing:

```
someField GetObjectPtr FldReleaseFocus
```

Are you testing the FldReleaseFocus in isolation -- that is, is it definitely that which is failing, and not some subsequent code?

Neal

Re: FldReleaseFocus - Fatal Error

Posted by [Neal Bridges](#) on September 06, 1999 at 09:52:10:

In Reply to: [Re: FldReleaseFocus - Fatal Error](#) posted by Neal Bridges on September 06, 1999 at 09:44:17:

> >

```
> > : ReleaseFocus (fieldID -- )
> >   FrmGetActiveForm 2dup 2>r
> >   FrmGetObjectIndex
> >   2r@ FrmGetObjectPtr
> >   FldReleaseFocus FlushQueue ;
```

```
> > LoadForm
> > someField ReleaseFocus
```

> >

I should drink coffee before answering these questions. In fact there's an error in your code -- use 2R> instead of 2R@ and it should be fine.

Neal

Re: FldReleaseFocus - Fatal Error

Posted by [Steve Gibson](#) on September 06, 1999 at 12:05:28:

In Reply to: [Re: FldReleaseFocus - Fatal Error](#) posted by Neal Bridges on September 06, 1999 at 09:52:10:

> > >

```
> > > : ReleaseFocus (fieldID -- )
> > >   FrmGetActiveForm 2dup 2>r
> > >   FrmGetObjectIndex
> > >   2r@ FrmGetObjectPtr
> > >   FldReleaseFocus FlushQueue ;
```

>

```
> > > LoadForm
> > > someField ReleaseFocus
> > >
```

> I should drink coffee before answering these questions. In fact there's an error in your code -- use 2R> instead of 2R@ and it should be fine.

Had my coffee...didn't seem to help much! :)

Okay, now I'm not getting the fatal (thanks!). For some reason, though, when my form loads and the fields all load, the last field loaded still has a blinking cursor after doing a "someField ReleaseFocus" on it. Does the the form need to be updated somehow to reflect the field's non-focus status?

--Steve

Re: FldReleaseFocus - Fatal Error

Posted by [Neal Bridges](#) on September 06, 1999 at 12:25:27:

In Reply to: [Re: FldReleaseFocus - Fatal Error](#) posted by Steve Gibson on September 06, 1999 at 12:05:28:

> Okay, now I'm not getting the fatal (thanks!). For some reason, though, when my

> form loads and the fields all load, the last field loaded still has a blinking
> cursor after doing a "someField ReleaseFocus" on it. Does the the form need
to
> be updated somehow to reflect the field's non-focus status?

Does the field actually still have focus -- that is, do characters entered still
appear in it? I've found that releasing focus normally also turns off the
cursor.

Neal

Re: FldReleaseFocus - Fatal Error

Posted by [Steve Gibson](#) on September 06, 1999 at 12:34:10:

In Reply to: [Re: FldReleaseFocus - Fatal Error](#) posted by Neal Bridges on
September 06, 1999 at 12:25:27:

> Does the field actually still have focus -- that is, do characters entered
still
> appear in it? I've found that releasing focus normally also turns off the
> cursor.

Hmm, actually it doesn't, but the cursor is still blinking in it. Odd. Just a
quirk/bug in PalmOS?

--Steve

Re: FldReleaseFocus - Fatal Error

Posted by [Neal Bridges](#) on September 06, 1999 at 13:03:29:

In Reply to: [Re: FldReleaseFocus - Fatal Error](#) posted by Steve Gibson on
September 06, 1999 at 12:34:10:

> > Does the field actually still have focus -- that is, do characters entered
> still
> > appear in it? I've found that releasing focus normally also turns off the
> > cursor.

> Hmm, actually it doesn't, but the cursor is still blinking in it. Odd. Just
a
> quirk/bug in PalmOS?

A curiosity; when I release focus in my apps the cursor vanishes. Try expressly
giving the field focus (with FieldFocus from the *Fields* library) and
then releasing it.

Neal

Re: FldReleaseFocus - Fatal Error

Posted by [Steve Gibson](#) on September 06, 1999 at 13:15:36:

In Reply to: [Re: FldReleaseFocus - Fatal Error](#) posted by Neal Bridges on September 06, 1999 at 13:03:29:

> A curiosity; when I release focus in my apps the cursor vanishes. Try
> expressly
> giving the field focus (with FieldFocus from the *Fields* library) and
> then releasing it.

Curious indeed! That did the trick!

--Steve

Re: FldReleaseFocus - Fatal Error

Posted by [Neal Bridges](#) on September 06, 1999 at 15:22:13:

In Reply to: [Re: FldReleaseFocus - Fatal Error](#) posted by Steve Gibson on September 06, 1999 at 13:15:36:

> Curious indeed! That did the trick!

Great!

Neal

About memory

Posted by [SAUVARD Michel](#) on September 04, 1999 at 06:08:21:

I have some problems in memory use.

what is the meaning of 16-bits and 32-bits data space, and why >abs >rel don't give the initial address. Is 16-bits dataspace a part of the 32-bits dataspace, or what ?

when calling PalmOs Functions which type of memory may I use, for code to work properly, in all case:

- memory allocated whith ALLOCATE

- memory from a forth variable (QF data space)
- part allocated in code space
- literals

when using 'literal' values for strings (like z" s" ...) it is not clear for me when the memory space is freed, depending on the QF status (compile, interp, PRC ?).

I have a look to the ANS Forth but things about memory use are guidelines. It is not clear how they apply to QF on Palm, and what are the interaction with the palm memory.

Thanks for some light on these newbie questions.

Re: About memory

Posted by [Neal Bridges](#) on September 04, 1999 at 11:03:20:

In Reply to: [About memory](#) posted by SAUVARD Michel on September 04, 1999 at 06:08:21:

> what is the meaning of 16-bits and 32-bits data space, and why >abs >rel don't
> give the initial address. Is 16-bits dataspace a part of the 32-bits
dataspace,
> or what ?

Quartus Forth is a 16-bit Forth (due to the memory model and the granularity required by the OS interface). When passing a 16-bit address to the operating system, it's necessary first to make it a 32-bit address using >ABS, which adds a 'base address'.

>REL will in fact reverse >ABS:

12345 >abs >rel . -> 12345

> when calling PalmOs Functions which type of memory may I use, for code to work
> properly, in all case:
> - memory allocated whith ALLOCATE
> - memory from a forth variable (QF data space)
> - part allocated in code space
> - literals

All of the above. Bear in mind to convert a codespace address to 32-bits, you must use XT>ABS.

Literals (such as S" strings) are placed in dataspace. So are variables. Memory allocated with ALLOCATE is allocated near to dataspace, and is accessed using the same base address.

There's an article in the archives about this, but I'll mention it again briefly: if you use ALLOCATE, be sure to use it only at run-time. This is because during compilation, dataspace may be resized, causing a shift of allocated regions in dataspace, or even a change in the base address.

> when using 'literal' values for strings (like z" s" ...) it is not clear for
> me when the memory space is freed, depending on the QF status (compile,
interp,
> PRC ?).

When you exit Quartus Forth (or a stand-alone app generated by Quartus Forth), all dynamic memory is freed.

> I have a look to the ANS Forth but things about memory use are guidelines. It is
> not clear how they apply to QF on Palm, and what are the interaction with the
> palm memory.

The basics: you have as much as 32K of dataspace (less on many Palm models); as much as 32K of additional dynamic memory available via ALLOCATE (again, less on many models).

> Thanks for some light on these newbie questions.

No problem -- let me know if that covers it, or if you need more detail.

Neal

Re: About memory

Posted by [SAUVARD Michel](#) on September 04, 1999 at 11:44:46:

In Reply to: [Re: About memory](#) posted by Neal Bridges on September 04, 1999 at 11:03:20:

snip
>
> > Thanks for some light on these newbie questions.

> No problem -- let me know if that covers it, or if you need more detail.

> Neal

a few more to be sure.

I noted that the 16-bits data-space uses a register base for data-space in 32-bits memory (and another for code-space ?).

Isn't it a problem using >rel on an address supplied by a PalmOs function if this address is not in the possible range.

You said to use ALLOCATE only at runtime. Does it means that it is not possible, or safe, to use words that manipulate the dataspace (end-struct , create, >does

...) at run-time or in a prc.

Are there differencies between interpretation and runtime.

Re: About memory

Posted by [Neal Bridges](#) on September 04, 1999 at 12:56:56:

In Reply to: [Re: About memory](#) posted by SAUVARD Michel on September 04, 1999 at 11:44:46:

> a few more to be sure.

> I noted that the 16-bits data-space uses a register base for data-space in
> 32-bits memory (and another for code-space ?).

> Isn't it a problem using >rel on an address supplied by a PalmOs function if
> this address is not in the possible range.

Yes, >ABS and >REL are for addresses in dynamic RAM. Keep other addresses as
32-bit, manipulate them with @a and !a.

> You said to use ALLOCATE only at runtime. Does it means that it is not
possible,

> or safe, to use words that manipulate the dataspace (end-struct , create,
>does

> ...) at run-time or in a prc.

There's no dictionary in a stand-alone PRC, so defining words can't be used at
run-time.

> Are there differencies between interpretation and runtime.

I suspect you mean 'are there differences between running my code inside Quartus
Forth and running it as a stand-alone app'. The dictionary only exists within
Quartus Forth, and dataspace cannot be extended using ALLOT during run-time;
other than that, code runs the same within the compiler as it does in a
stand-alone app.

Neal

Re: About memory

Posted by [Erwin Schomburg](#) on September 04, 1999 at 06:58:10:

In Reply to: [About memory](#) posted by SAUVARD Michel on September 04, 1999 at
06:08:21:

> I have some problems in memory use.

> what is the meaning of 16-bits and 32-bits data space, and why >abs >rel don't

> give the initial address. Is 16-bits dataspace a part of the 32-bits
dataspace,
> or what ?

The processor's addressing allows 32bit addressing or 16bit addressing relative to a base-pointer(-register content). Not to discuss too deeply, but it was Neal's design decision to make Quartus a 16-bit-word Forth environment, to keep things simple. This requires to have words like >abs and >rel to allow for Quartus to hook into OS functions, as these require pointer parameters to be passed as fully qualified 32-bit addresses, so >abs expands a relative, current 16-bit dataspace, address to a full 32-bit pointer, >rel allows you to deduct a 16-bit dataspace address out of a returned 32-bit pointer.

> when calling PalmOs Functions which type of memory may I use, for code to work
> properly, in all case:
> - memory allocated whith ALLOCATE
> - memory from a forth variable (QF data space)
> - part allocated in code space
> - literals

You van use whatever you like, although you should leave the codespace alone and should not fiddle with memory occupied by literals.

> when using 'literal' values for strings (like z" s" ...) it is not clear for
> me when the memory space is freed, depending on the QF status (compile,
interp,
> PRC ?).

There is no concept of "freeing" memory in Quartus for literals, that memory is static. Even if a literal is compiled into memory at compile time and gives you an address and length at interpretation time, the data must still be stored somewhere. You can re-use variables and alloted/allocated space and you can explicitely free allocated space. Allotted space can only be "freed" consecutively, down from least recent allotted, but thats for advanced use, the data for variables is alloted in this section of memory.

> I have a look to the ANS Forth but things about memory use are guidelines. It is
> not clear how they apply to QF on Palm, and what are the interaction with the
> palm memory.

The interaction is fairly straightforward, codespace and dataspace are allocated via the OS on a need to basis, i.e. OS functions are used to get a chunk of memory for data space, if this is exceeded with allots and variables, a bigger chunk is requested, the old stuff copied over if necessary and the base pointer will be adjusted adjusted so you have the same relative, 16-bit, dataspace addresses for stuff already used. Allocated memory is requisitioned from the OS besides the dataspace scheme and needs your attention and control, i.e. you need to free it when it is no longer used.

>
> Thanks for some light on these newbie questions.

>
>
May the Forth be with you!
/Erwin

Double-length Floored Division

Posted by [Kennis Koldewyn](#) on September 03, 1999 at 17:36:47:

I'm doing some calculations that require floored division, so I've been making heavy use of FM/MOD (d1 n1 -- nq nr). I now need to divide by a double, so I either need a word like (d1 d2 -- dq dr) (call it FD/MOD), or I could divide twice (since my divisors are positive non-primes) using something like M*/ (d1 n1 +n2 -- dq), except that M*/ implements symmetric rather than floored division, so my results are wrong when the dividend is negative. Any ideas?

Much thanx,

- Kennis

Re: Double-length Floored Division

Posted by [Neal Bridges](#) on September 03, 1999 at 17:51:51:

In Reply to: [Double-length Floored Division](#) posted by Kennis Koldewyn on September 03, 1999 at 17:36:47:

> I'm doing some calculations that require floored division, so I've been making
> heavy use of FM/MOD (d1 n1 -- nq nr). I now need to divide by a double, so I
> either need a word like (d1 d2 -- dq dr) (call it FD/MOD), or I could divide
> twice (since my divisors are positive non-primes) using something like M*/ (d1
> n1 +n2 -- dq), except that M*/ implements symmetric rather than floored
> division, so my results are wrong when the dividend is negative. Any ideas?

Use **ud/mod** from the *dblmath* library module. Make your arguments positive, perform an unsigned division, then adjust the quotient and remainder according to the original signs.

I write the code out if you need it -- let me know.

Neal

Being an idiot, I've run into a wee problem.

Posted by [E.](#) on September 02, 1999 at 19:41:07:

I was experimenting with prefs and saving state, and created a prefs database with the id "CRAP" (my standard "I'm just messing around here" id, and yes, I'm aware that it's a bad plan, I just wasn't aware HOW bad, hence this post).

Anyway... Now I can't seem to remove it. *cough*

I've tried all my favorite utilities, and can't find it anywhere.

It's two whole bytes in size, so I'm not HUGELY worried about it, but still, I'd like to get rid of it.

Instead of doing something like

```
' rot (ID) CRAP MakePRC foo
```

and an immediate deletion, is there a simple way to remove arbitrary prefs databases?

Oh, while I'm posting, any idea why

```
needs ids
: get-stored
  prefsiz prefstart >abs 1 (ID) CRAP
  PrefGetAppPreferencesV10
;
```

would fail (it says CRAP is an undefined word), while

```
needs ids
(ID) CRAP 2constant CrID
: get-stored
  prefsiz prefstart >abs 1 CrID
  PrefGetAppPreferencesV10
;
```

works?

Oh, wait. Because (ID) is only valid when interpreting?

Aha. RingTFM, I see the word [ID].

So, would I be able to say

```
needs ids
CRAP ID
```

```
: get-stored
  prefsiz prefstart >abs 1 CRAP
  PrefGetAppPreferencesV10
;
```

and have it do what I think it would do?

-E (unused to writing partially-compiled/partially-interpreted programs)

Re: Being an idiot, I've run into a wee problem.

Posted by [Neal Bridges](#) on September 02, 1999 at 20:59:32:

In Reply to: [Being an idiot, I've run into a wee problem.](#) posted by E. on September 02, 1999 at 19:41:07:

```
> I was experimenting with prefs and saving state, and created a prefs database
> with the id "CRAP" (my standard "I'm just messing around here" id, and yes,
I'm
> aware that it's a bad plan, I just wasn't aware HOW bad, hence this post).
> Anyway... Now I can't seem to remove it. *cough*
```

I believe if you save a new preference with the same id and a length of 0 -- this will delete the old one.

```
> I've tried all my favorite utilities, and can't find it anywhere.
```

```
> It's two whole bytes in size, so I'm not HUGELY worried about it, but still,
I'd
> like to get rid of it.
```

```
> Oh, while I'm posting, any idea why
>
```

```
> needs ids
> : get-stored
>   prefsiz prefstart >abs 1 (ID) CRAP
>   PrefGetAppPreferencesV10
> ;
>
```

```
> would fail (it says CRAP is an undefined word), while
>
```

```
> needs ids
> (ID) CRAP 2constant CrID
> : get-stored
>   prefsiz prefstart >abs 1 CrID
```

```
> PrefGetAppPreferencesV10  
> ;  
>
```

> works?

> Oh, wait. Because (ID) is only valid when interpreting?

You got it.

> Aha. RingTFM, I see the word [ID].

> So, would I be able to say

>

> needs ids

> CRAP ID

> : get-stored

> prefsize prefstart >abs 1 CRAP

> PrefGetAppPreferencesV10

> ;

>

> and have it do what I think it would do?

Almost -- make that

id CRAP

or alternatively

: get-stored

prefsize prefstart >abs 1 [ID] CRAP

PrefGetAppPreferencesV10

;

> -E (unused to writing partially-compiled/partially-interpreted programs)

You'll get used to it. It's a powerful tool.

Neal

Re: Being an idiot, I've run into a wee problem.

Posted by [Ron Doerfler](#) on September 03, 1999 at 00:31:02:

In Reply to: [Re: Being an idiot, I've run into a wee problem.](#) posted by Neal Bridges on September 02, 1999 at 20:59:32:

An app called Preference Manager, which I've added a link to below, will identify "orphan" preferences and delete them at will (and non-orphan ones as well, I am pretty sure). I have used it off and on to clean out preference information left by deleted apps.

Ron

> > I was experimenting with prefs and saving state, and created a prefs database
> > with the id "CRAP" (my standard "I'm just messing around here" id, and yes, > I'm
> > aware that it's a bad plan, I just wasn't aware HOW bad, hence this post).
> > Anyway... Now I can't seem to remove it. *cough*
> I believe if you save a new preference with the same id and a length of 0 --
> this will delete the old one.
> > I've tried all my favorite utilities, and can't find it anywhere.
> > It's two whole bytes in size, so I'm not HUGELY worried about it, but still,
> I'd
> > like to get rid of it.

- [Preference Manager](#)

Re: Being an idiot, I've run into a wee problem.

Posted by [E.](#) on September 02, 1999 at 21:28:58:

In Reply to: [Re: Being an idiot, I've run into a wee problem.](#) posted by Neal Bridges on September 02, 1999 at 20:59:32:

> I believe if you save a new preference with the same id and a length of 0 --
> this will delete the old one.

Super. Thanks.

> > Oh, wait. Because (ID) is only valid when interpreting?

> You got it.

Wow. :)

> > CRAP ID
> id CRAP

Grrr. I knew that. *scowl*

> > -E (unused to writing partially-compiled/partially-interpreted programs)
> You'll get used to it. It's a powerful tool.

If this young language expresses itself in terms too deep for me...

-E (sigh)

Anybody familiar with the "Forth Encyclopedia"?

Posted by [Barron Snyder](#) on September 02, 1999 at 17:40:14:

Is anybody familiar with the book Forth Encyclopedia by Derick (published ~ 1990)? If so, what is your opinion of it?

I'm trying to read everything I can about Forth so that I can write better programs with Quartus Forth!

Thanks,
Barron

Re: Anybody familiar with the "Forth Encyclopedia"?

Posted by [Neal Bridges](#) on September 02, 1999 at 17:53:54:

In Reply to: [Anybody familiar with the "Forth Encyclopedia"?](#) posted by Barron Snyder on September 02, 1999 at 17:40:14:

> Is anybody familiar with the book Forth Encyclopedia by Derick (published ~
> 1990)? If so, what is your opinion of it?

The version I have is from '82 and is extremely out-of-date. I'm unfamiliar with the '90 revision.

Neal

Sources to "Swatch" now available in the File Area

Posted by [Neal Bridges](#) on September 02, 1999 at 14:56:29:

By request, I've posted the sources to *Swatch* in the Quartus Forth File Area as *swtchsrc.zip*. It demonstrates more sophisticated techniques than those used in Year and Duco.

Let me know what you think!

Neal

Compile error 3970 Invalid handle

Posted by [E. Ross Helton](#) on September 02, 1999 at 11:44:53:

Hi;

When I try to compile my app in an executable I get an error 3970 invalid handle.

Have tried to trouble shoot it from every angle and can't get past this. The program runs great in Quartus.

I am using RsrcEdit and have looked all through it and don't see any reason for an error.

Any suggestions?

Make it a good day!

Ross

Re: Compile error 3970 Invalid handle

Posted by [Neal Bridges](#) on September 02, 1999 at 11:56:20:

In Reply to: [Compile error 3970 Invalid handle](#) posted by E. Ross Helton on September 02, 1999 at 11:44:53:

> When I try to compile my app in an executable I get an error 3970 invalid
> handle.

> Have tried to trouble shoot it from every angle and can't get past this. The
> program runs great in Quartus.

> I am using RsrcEdit and have looked all through it and don't see any reason
> for
> an error.

I've never seen a 3970 error -- it's not a documented error code.

Is it happening during the MakePRC, or after it? Put an ABORT after your MakePRC and see if it's a CopyRSRC that's giving you the error.

Neal

Re: Compile error 3970 Invalid handle

Posted by [E. Ross Helton](#) on September 02, 1999 at 12:41:48:

In Reply to: [Re: Compile error 3970 Invalid handle](#) posted by Neal Bridges on September 02, 1999 at 11:56:20:

Hi Neal;

> I've never seen a 3970 error -- it's not a documented error code.
> Is it happening during the MakePRC, or after it? Put an ABORT after your
> MakePRC and see if it's a CopyRSRC that's giving you the error.

Sorry that should have read line 3970 Invalid handle.

added an abort just after the MakePrc

```
' go ...    MakePrc ....  
abort
```

line and got the message
exception in file make-rface

This the file which I use to make the compile.

Re: Compile error 3970 Invalid handle

Posted by [Neal Bridges](#) on September 02, 1999 at 13:21:46:

In Reply to: [Re: Compile error 3970 Invalid handle](#) posted by E. Ross Helton on September 02, 1999 at 12:41:48:

> added an abort just after the MakePrc

>

```
> ' go ...    MakePrc ....  
> abort
```

>

> line and got the message
> exception in file make-rface

> This the file which I use to make the compile.

That's good -- it means the error is in a line that follows the MakePRC. Move

the ABORT after successive CopyRsrc lines, see which one is at fault.

Neal

Thanks Neal

Posted by [E. Ross Helton](#) on September 02, 1999 at 19:03:02:

In Reply to: [Re: Compile error 3970 Invalid handle](#) posted by Neal Bridges on September 02, 1999 at 13:21:46:

Hi Neal;

> That's good -- it means the error is in a line that follows the MakePRC. Move
> the ABORT after successive CopyRsrc lines, see which one is at fault.

Did the 'abort' thing and found a menu which kept it from compiling. Got it compiled and then the would crash when I ran the compiled program.

It turns out that it was crashing when I activated the 'WinFillRectangele' option. Remarked that out and the program works. This works in Quartus but now when it is compiled. Can accomplish the background that this adds by using a bitmap file, but that adds tons to the size of the program.

Any ideas?

Thanks for the Help. Looks like you've been busy! Guess that's why you get the BIG BUCKS!

make it a good day!

Ross

Re: Thanks Neal

Posted by [Neal Bridges](#) on September 02, 1999 at 19:05:59:

In Reply to: [Thanks Neal](#) posted by E. Ross Helton on September 02, 1999 at 19:03:02:

> It turns out that it was crashing when I activated the 'WinFillRectangele'
> option. Remarked that out and the program works. This works in Quartus but
now

> when it is compiled. Can accomplish the background that this adds by using a
> bitmap file, but that adds tons to the size of the program.

> Any ideas?

Show me the code -- there shouldn't be any difference.

> Thanks for the Help. Looks like you've been busy! Guess that's why you get the
> BIG BUCKS!

It's fortunate money isn't my only motivation :)

Neal

Re: Thanks Neal

Posted by [E. Ross Helton](#) on September 02, 1999 at 19:31:30:

In Reply to: [Re: Thanks Neal](#) posted by Neal Bridges on September 02, 1999 at 19:05:59:

Okay Neal;

> Show me the code -- there shouldn't be any difference.

The first set of code below is the pattern maker. The second set is the portion of the main program which activates the fill program. After this screen is filled the other three bitmaps then appear and take the place of the fill. The three bitmaps work correctly if the 'WinFillRectangle' option isn't activated.

Any ideas?

```
+++++
```

```
1st set
```

```
\ rface-ext
```

```
\ fix for WinSetPattern:
```

```
page
```

```
: WinSetPattern
```

```
WinSetPattern drop ;
```

```
(binary) 10101010 constant p1
```

```
(binary) 01010101 constant p2
```

```
create pattern
```

```
p1 c, p2 c, p1 c, p2 c, p1 c, p2 c, p1 c, p2 c,
```

```
pattern >abs WinSetPattern
```

```
create rectangle 0 , 15 , 160 , 150 ,
```

```
0 rectangle >abs \ WinFillRectangle
```

+++++

2nd set

```
: go ( -- )
  1001 ShowForm
WinFillRectangle

begin ekey drop

  800 ms 15 0 1002 Tbmp DrawBitmapResource
  800 ms 15 0 1005 Tbmp DrawBitmapResource
  800 ms 15 0 1007 Tbmp DrawBitmapResource
again ;
```

make it a good day!

Ross

Re: Thanks Neal

Posted by [Neal Bridges](#) on September 02, 1999 at 21:05:20:

In Reply to: [Re: Thanks Neal](#) posted by E. Ross Helton on September 02, 1999 at 19:31:30:

> The first set of code below is the pattern maker. The second set is the
> portion
> of the main program which activates the fill program. After this screen is
> filled the other three bitmaps then appear and take the place of the fill.
The
> three bitmaps work correctly if the 'WinFillRectangle' option isn't activated.

It looks like you're doing the '`>abs WinFillRectangle`' outside of a definition, as part of the compilation process. Put that inside of your startup word, should take care of it. The result returned by `>abs` differs in a stand-alone app, needs to be recalculated at run-time.

Neal

Problems with Palm VII development (long post)

Posted by [Matthew Burke](#) on September 02, 1999 at 10:50:11:

You know the saying about trying to walk without first learning how to crawl...

I am trying to get Quartus to work with the Clipper program on Palm VII. For those of you unfamiliar with the P7, Clipper is an invisible app that lets you do (limited) web browsing via the built-in wireless internet connection. Essentially, Clipper lets you set up HTML forms on your P7 which you can then send out to web servers and get HTML pages back. I won't go into detail here, but suffice it to say that after the initial gee-whiz wears off, you realize that for a large class of applications this is a little limited.

There is a way, however, for Clipper to interact with apps on the Palm and vice versa. In any of the HTML documents displayed by Clipper you can have a URL of the form palmcall:crid.appl?data1=value1;data2=value2 and if the user selects that link, the Palm app with Creator ID 'crid' would be launched and could access the data in the query string of the URL. This requires the Palm app to respond to some new launch codes and since Quartus does not respond to any but the normal launch code, this mechanism won't work (although I thought I saw somewhere a mention of launch code support in Quartus v. 2...)

The other way around, however, should work but I am running into problems implementing it. A Palm App can invoke Clipper with the new sysAppLaunchURLCmd. And I can get Clipper invoked using this, but when I try to exit to the launcher or another application, I get a Fatal Error:

```
MemoryMgrNew.c
Line:4222,Invalid chunk ptr
```

Below is the C code I am trying to replicate and my Forth code.

```
/*
 *
 * FUNCTION:      GoToURL
 *
 * DESCRIPTION:  Copies the given URL and launches clipper to view it.
 *              If clipper isn't on the device, will bring up an error
 *              dialog. Other errors should be handled by the caller.
 *
 * PARAMETERS:  the url to have clipper go to
 *
 * RETURNED:    an OS error code; zero means no error
 *
 *****/
#endif sysAppLaunchCmdGoToURL
```

```

#define sysAppLaunchCmdGoToURL 54
#endif
#ifndef sysFileCClipper
#define sysFileCClipper 'clpr' // Creator type for clipper app.
#endif

Err GoToURL(CharPtr origurl)
{
    Err err;
    CharPtr url;
    DmSearchStateType searchState;
    UInt cardNo;
    LocalID dbID;

    // make a copy of the URL, since the OS will free the parameter
    //once clipper quits
    url = MemPtrNew(StrLen(origurl)+1);
    if (!url) return sysErrNoFreeRAM;
    StrCopy(url, origurl);
    MemPtrSetOwner(url, 0);

    // find clipper and launch it
    err = DmGetNextDatabaseByTypeCreator (true, &searchState,
    sysFileTApplication, sysFileCClipper, true, &cardNo, &dbID);
    if (err) {
        FrmAlert(NoClipperAlert);
        MemPtrFree(url);
    }
    else
        err = SysUIAppSwitch(cardNo, dbID, sysAppLaunchCmdGoToURL,
url);

    return err;
}

```

Now my Forth code:

```

needs ids
needs zstrings

54 constant urllaunch
ID clpr
ID appl

2variable dbID
variable card
2variable info

: url z" file:catex.pqa" drop ;

: getID dbID >abs card >abs
    true clpr appl info >abs
    true DmGetNextDatabaseByTypeCreator ;

: launch url >abs urllaunch

```

```
dbID 2@ card @ SysUIAppSwitch ;
```

```
: go getID 0= if launch  
else ." error" cr then ;
```

Now I got to thinking about the comment in the C code about needing to copy the string since Clipper will try to free it on exiting. So, I tried the following:

```
needs ids  
needs zstrings  
needs mem
```

```
54 constant urllaunch  
ID clpr  
ID appl
```

```
2variable dbID  
variable card  
2variable info  
2variable mh
```

```
: url2 z" file:catex.pqa" ( c-adr len )  
dup chars 1 + (allocate) drop  
( c-adr len a. )  
mh 2! ( c-adr len )  
swap >r s>d r> >abs  
( len. c-adr. )  
mh 2@ MemMove drop ;  
  
: getID dbID >abs card >abs  
true clpr appl info >abs  
true DmGetNextDatabaseByTypeCreator ;
```

```
url2
```

```
: launch mh 2@  
urllaunch  
dbID 2@  
card @  
SysUIAppSwitch ;
```

```
: go getID 0= if launch  
else ." error" cr then ;
```

With this approach, Clipper gets launched but it doesn't bring up the PQA (the HTML file). I can, however, exit from Clipper without getting a Fatal Error.

I would really appreciate any thoughts, help, etc. If I can get this to work then I might be able to persuade the other people in my group to use Quartus as our development environment. Otherwise they'll saddle me with CodeWarrior and no more development work by the pool-side :)

Matt

Re: Problems with Palm VII development (long post)

Posted by [Neal Bridges](#) on September 02, 1999 at 15:59:42:

In Reply to: [Problems with Palm VII development \(long post\)](#) posted by Matthew Burke on September 02, 1999 at 10:50:11:

```
> : url2 z" file:catex.pqa" ( c-adr len )
> dup chars 1 + (allocate) drop
> ( c-adr len a. )
> mh 2! ( c-adr len )
> swap >r s>d r> >abs
> ( len. c-adr. )
> mh 2@ MemMove drop ;
```

This looks incorrect to me. 'mh' is a 2variable that holds an address and a length -- 'mh 2@ MemMove' can't work. Perhaps 'mh 2@ drop >abs MemMove'.

Neal

Re: Problems with Palm VII development (long post)

Posted by [Matthew Burke](#) on September 02, 1999 at 16:37:29:

In Reply to: [Re: Problems with Palm VII development \(long post\)](#) posted by Neal Bridges on September 02, 1999 at 15:59:42:

```
> > : url2 z" file:catex.pqa" ( c-adr len )
> > dup chars 1 + (allocate) drop
> > ( c-adr len a. )
> > mh 2! ( c-adr len )
> > swap >r s>d r> >abs
> > ( len. c-adr. )
> > mh 2@ MemMove drop ;
```

> This looks incorrect to me. 'mh' is a 2variable that holds an address and a length -- 'mh 2@ MemMove' can't work. Perhaps 'mh 2@ drop >abs MemMove'.

Unless I'm missing something, mh holds the absolute address returned by (allocate)

Matt

Re: Problems with Palm VII development (long post)

Posted by [Neal Bridges](#) on September 02, 1999 at 16:47:13:

In Reply to: [Re: Problems with Palm VII development \(long post\)](#) posted by Matthew Burke on September 02, 1999 at 16:37:29:

> Unless I'm missing something, mh holds the absolute address returned
> by (allocate)

Quite so. See my retraction in my last message.

Neal

Re: Problems with Palm VII development (long post)

Posted by [Neal Bridges](#) on September 02, 1999 at 16:34:14:

In Reply to: [Re: Problems with Palm VII development \(long post\)](#) posted by Neal Bridges on September 02, 1999 at 15:59:42:

```
> > : url2 z" file:catex.pqa" ( c-adr len )
> > dup chars 1 + (allocate) drop
> > ( c-adr len a. )
> > mh 2! ( c-adr len )
> > swap >r s>d r> >abs
> > ( len. c-adr. )
> > mh 2@ MemMove drop ;
```

> This looks incorrect to me. 'mh' is a 2variable that holds an address and a
> length -- 'mh 2@ MemMove' can't work. Perhaps 'mh 2@ drop >abs MemMove'.

Bah, my mistake, sorry. I mis-read it.

Can you confirm that your filename ("file:catex.pqa") is being correctly copied, including its terminating zero byte, to the memory location you specify?

Neal

Re: Problems with Palm VII development (long post)

Posted by [Matthew Burke](#) on September 02, 1999 at 17:05:57:

In Reply to: [Re: Problems with Palm VII development \(long post\)](#) posted by Neal Bridges on September 02, 1999 at 16:34:14:

> Can you confirm that your filename ("file:catex.pqa") is being correctly copied,
> including its terminating zero byte, to the memory location you specify?

Yes, I tried this

```
:t 14 0 do mh 2@ i s>d d+ c@a emit loop mh 2@ 15 s>d d+ c@a . ;  
which yields:
```

```
t file:catex.pqa0
```

Matt

Re: Problems with Palm VII development (long post)

Posted by [Neal Bridges](#) on September 02, 1999 at 17:57:00:

In Reply to: [Re: Problems with Palm VII development \(long post\)](#) posted by Matthew Burke on September 02, 1999 at 17:05:57:

> > Can you confirm that your filename ("file:catex.pqa") is being correctly
> copied,
> > including its terminating zero byte, to the memory location you specify?

> Yes, I tried this

```
> :t 14 0 do mh 2@ i s>d d+ c@a emit loop mh 2@ 15 s>d d+ c@a . ;  
> which yields:
```

```
> t file:catex.pqa0
```

Not having a VII makes it hard for me to diagnose. At this juncture I'd suggest you replicate the 'C' code line by line -- it seems like the filename isn't being passed correctly to the Clipper application (do you get similar results if you pass a deliberately false filename?).

I've launched apps using SysUIAppSwitch before -- there aren't any bugaboos relating to Quartus Forth. Something is awry someplace, it's just hard for me

to spot at this distance.

Neal

Re: Problems with Palm VII development (long post)

Posted by [Matthew Burke](#) on September 07, 1999 at 08:34:50:

In Reply to: [Re: Problems with Palm VII development \(long post\)](#) posted by Neal Bridges on September 02, 1999 at 17:57:00:

> Not having a VII makes it hard for me to diagnose. At this juncture I'd suggest
> you replicate the 'C' code line by line -- it seems like the filename isn't
> being passed correctly to the Clipper application (do you get similar results
> if you pass a deliberately false filename?).

Yes, if I use a garbage file name I still get the same results. It's really starting to bug me that if I pass the OS a Quartus zstring after >abs-ing the address that it works fine (other than that pesky fatal error on quitting the clipper app :)

Well I may have to put this on the backburner 'cause I'm stumped too. Would it help if I sent you a P7 ROM image to run in POSE? (I know I'm not supposed to do this....)

Matt

Re: Problems with Palm VII development (long post)

Posted by [Neal Bridges](#) on September 07, 1999 at 09:16:51:

In Reply to: [Re: Problems with Palm VII development \(long post\)](#) posted by Matthew Burke on September 07, 1999 at 08:34:50:

> > Not having a VII makes it hard for me to diagnose. At this juncture I'd
> suggest
> > you replicate the 'C' code line by line -- it seems like the filename isn't
> > being passed correctly to the Clipper application (do you get similar
results
> > if you pass a deliberately false filename?).

> Yes, if I use a garbage file name I still get the same results. It's really

> starting to bug me that if I pass the OS a Quartus zstring after >abs-ing
> the address that it works fine (other than that pesky fatal error on quitting
> the clipper app :)

I wasn't clear on that -- so that works, does it? Interesting.

Neal

Re: Problems with Palm VII development (long post)

Posted by [Neal Bridges](#) on September 02, 1999 at 11:30:27:

In Reply to: [Problems with Palm VII development \(long post\)](#) posted by Matthew Burke on September 02, 1999 at 10:50:11:

> I would really appreciate any thoughts, help, etc. If I can get this to
> work then I might be able to persuade the other people in my group to
> use Quartus as our development environment. Otherwise they'll saddle me
> with CodeWarrior and no more developement work by the pool-side :)

Can't have that! I don't see that you're doing a MemPtrSetOwner anywhere in your Quartus Forth code -- you need that when doing an app switch, or you get errors on exit (as you've discovered). Try it and let me know.

Neal

Re: Problems with Palm VII development (long post)

Posted by [Matthew Burke](#) on September 02, 1999 at 15:29:23:

In Reply to: [Re: Problems with Palm VII development \(long post\)](#) posted by Neal Bridges on September 02, 1999 at 11:30:27:

> Can't have that! I don't see that you're doing a MemPtrSetOwner anywhere in
> your Quartus Forth code -- you need that when doing an app switch, or you get
> errors on exit (as you've discovered). Try it and let me know.

Neal,

Umm...I did overlook that MemPtrSetOwner didn't I? Well, I just tried it both with and without it (To mimic the C code I tried 0 mh 2@ MemPtrSetOwner drop) and got the exact same result: It launches clipper but nothing shows up, exiting Clipper causes no errors.

Matt

Mail problems

Posted by [Neal Bridges](#) on September 02, 1999 at 10:37:22:

Hi folks -- I lost a few emails from the last week, things I haven't responded to yet. If you're expecting to hear back and haven't, please re-mail.

Neal

Icons and bitmaps in RsrcEdit

Posted by [E. Ross Helton](#) on September 02, 1999 at 08:58:53:

Hi;

Can someone tell me how to put the statement for bitmap in the makePRC file?

For the icon in RsrcEdit; I have used for instance:

```
1005 constant IconBitmap
.
.
.
' go .....
1005 (id) tAIB copyrsrc
```

Do I use the same line for the first line if it is a bitmap and then:

```
1007 constant IconBitmpa
.
.
' go .....
1007 (id) Tbmp copyrscr
```

Thanks for the help

Make it a good day!

Ross

Re: Icons and bitmaps in RsrcEdit

Posted by [Neal Bridges](#) on September 02, 1999 at 10:35:29:

In Reply to: [Icons and bitmaps in RsrcEdit](#) posted by E. Ross Helton on September 02, 1999 at 08:58:53:

> Do I use the same line for the first line if it is a bitmap and then:

```
>
> 1007 constant IconBitmpa
> .
> .
> ' go .....
> 1007 (id) Tbmp copyrscr
>
```

That's right!

Neal

Callback functions continued

Posted by [Matthew Blair](#) on September 02, 1999 at 08:19:53:

Sorry about the duplicate posting -- I didn't mean to post the following in the middle of a previous thread where it would likely not get noticed... :(

- Matt

> Hi,

> I tried to implement the callback function last night using
> the guidance I found here. The callback function comes from
> the section on tables in *_Palm Programming: The Developer's Guide_*
> found online at the 3Com Web site. I would like to reproduce
> the C code here and list my Forth code. Perhaps someone can
> see where I'm failing.

> First the C code. I should mention that my table only has
> one text column, so I have modified the C code slightly.
>

```
> static Boolean StartApplication(void)
> {
>     int i;
>     for(i = 0; i < knumRows; i++)
```

```

> {
>   CharPtr s;
>   gHandles[i] = MemHandleNew(1);
>   s = MemHandleLock(gHandles[i]);
>   *s = '\0';
>   MemHandleUnlock(gHandles[i]);
> }
> return false;
> }
>
> static Err CustomLoadItem(VoidPtr table, Word row, Word column,
>                           Boolean editable, VoidHand * dataH,
>                           WordPtr dataOffset, WordPtr dataSize,
>                           FieldPtr fld)
> {
> #ifdef __GNUC__
>   CALLBACK_PROLOGUE
> #endif
>   /* gHandles is an array of MemHandles */
>   *dataH = gHandles[row];
>   *dataOffset = 0;
>   *dataSize = MemHandleSize(*dataH);
> #ifdef __GNUC__
>   CALLBACK_EPILOGUE
> #endif
>   return 0;
> }

```

> Ok. Now we can leave the land of Sodom and Gomorrah :)
> This is the Forth callback I wrote.

```

> \ memhandles holds 10 32-bit addresses
> create memhandles 20 cells allot
> variable dSize
> variable dOffset
> variable dH
> variable row
>
> \ initialize memhandles
> : init-memhandles ( numRows -- )
>   0 do
>     \ Get new Handle
>     \ size 1? That's what the
>     \ sample code had...
>     1 s>d MemHandleNew
>     2dup 2dup
>     \ find the offset from memhandles
>     \ to store this new handle

```

```
> memhandles 2 i * cells + 2!  
> MemHandleLock >rel  
> 0 swap !  
> MemHandleUnlock  
> drop  
> loop ;  
>  
> \ callback function  
> : loaditem  
> \ See Palm OS docs for stack  
> \ variables -- too many to  
> \ list here! But I will comment  
> \ as to what I think I'm  
> \ manipulating...!  
>  
> callback  
>  
> \ Put tableptr, row, col,  
> \ and editable on stack  
> \ and store row  
> 2>r dup row ! >r >r >r  
> \ store relative address of  
> \ dataH, dataOffset, and dataSize  
> 2dup 2>r >rel dH !  
> 2dup 2>r >rel dOffset !  
> 2dup >rel dSize !  
> \ put all the variables back  
> 2r> 2r> r> r> r> 2r>  
> \ find the offset into memhandles  
> row @ 2 * cells memhandles + 2@  
> \ store offset into dataH  
> dH @ 2!  
> \ store 0 into dataOffset  
> 0 dOffset !  
> \ store size into dataSize  
> dH @ 2@ MemHandleSize  
> dSize @ 2!  
> \ return Err  
> 0. d0!  
> end-callback  
> ;  
>  
> Thanks to whoever made it to the bottom of  
> this post. Any help is appreciated...  
> Thanks,  
> Matthew Blair
```

Callback functions and Palm OS

Posted by [Matthew Blair](#) on September 01, 1999 at 08:46:19:

Hi,

I need to write a callback function for a table which has a field in it (item style textTableItem). I register the callback with TblSetLoadDataProcedure. The Palm OS docs for this function state:

The callback procedure is used to obtain the data values of a table item. It should have this prototype:

```
Err TableLoadDataFuncType (VoidPtr table,  
Word row, Word column, Boolean editable,  
VoidHand *dataH, WordPtr dataOffset,  
WordPtr dataSize, FieldPtr fld)
```

For a text style item, the callback procedure should return the handle of a block that contains a null-terminated text string, the offset from the start of the block to the start of the string, and the amount of space allocated for the string.

How do I return the handle, offset, and space? Do I just put them on the stack? In what order? Which stack (since I'm using a callback)?

Also, a general question about callbacks: The documentation states that the callback word temporarily switches the data and return stacks. Does that mean that >r and r> push and pull words off of the return stack or the data stack?

Thanks,

Matthew

Re: Callback functions and Palm OS

Posted by [Neal Bridges](#) on September 01, 1999 at 10:56:04:

In Reply to: [Callback functions and Palm OS](#) posted by Matthew Blair on September 01, 1999 at 08:46:19:

> The callback procedure is used to obtain the data values of a table
> item. It should have this prototype:

```
> Err TableLoadDataFuncType (VoidPtr table,  
> Word row, Word column, Boolean editable,  
> VoidHand *dataH, WordPtr dataOffset,  
> WordPtr dataSize, FieldPtr fld)
```

```
> For a text style item, the callback procedure should return the  
> handle of a block that contains a null-terminated text string, the  
> offset from the start of the block to the start of the string, and the  
> amount of space allocated for the string.
```

```
> How do I return the handle, offset, and space? Do I just put them  
> on the stack? In what order? Which stack (since I'm using a callback)?
```

The three values VoidHand *dataH, WordPtr dataOffset, and wordPtr dataSize are all 32-bit absolute addresses of where you should store the information you want to 'return'.

```
> Also, a general question about callbacks: The documentation states that  
> the callback word temporarily switches the data and return stacks. Does  
> that mean that >r and r> push and pull words off of the return stack or  
> the data stack?
```

I've never tried >R and R> in a callback, but they would in fact manipulate the data stack. This would be a very odd thing to do. Callbacks are called asynchronously by the operating system; if you manipulate the data stack from within a callback, you'd suddenly have new data on the stack when you didn't expect it.

Neal

Re: Callback functions and Palm OS

Posted by [Matthew Blair](#) on September 02, 1999 at 08:16:13:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Neal Bridges on September 01, 1999 at 10:56:04:

Hi,

I tried to implement the callback function last night using the guidance I found here. The callback function comes from the section on tables in `_Palm Programming: The Developer's Guide_` found online at the 3Com Web site. I would like to reproduce the C code here and list my Forth code. Perhaps someone can see where I'm failing.

First the C code. I should mention that my table only has one text column, so I have modified the C code slightly.

```
static Boolean StartApplication(void)  
{  
    int i;
```

```

for(i = 0; i < knumRows; i++)
{
    CharPtr s;
    gHandles[i] = MemHandleNew(1);
    s = MemHandleLock(gHandles[i]);
    *s = '\0';
    MemHandleUnlock(gHandles[i]);
}
return false;
}

static Err CustomLoadItem(VoidPtr table, Word row, Word column,
                          Boolean editable, VoidHand * dataH,
                          WordPtr dataOffset, WordPtr dataSize,
                          FieldPtr fld)
{
#ifdef __GNUC__
    CALLBACK_PROLOGUE
#endif
    /* gHandles is an array of MemHandles */
    *dataH = gHandles[row];
    *dataOffset = 0;
    *dataSize = MemHandleSize(*dataH);
#ifdef __GNUC__
    CALLBACK_EPILOGUE
#endif

    return 0;
}

```

Ok. Now we can leave the land of Sodom and Gomorrah :)
This is the Forth callback I wrote.

```

\ memhandles holds 10 32-bit addresses
create memhandles 20 cells allot
variable dSize
variable dOffset
variable dH
variable row

\ initialize memhandles
: init-memhandles ( numrows -- )
0 do
    \ Get new Handle
    \ size 1? That's what the
    \ sample code had...
    1 s>d MemHandleNew
    2dup 2dup
    \ find the offset from memhandles
    \ to store this new handle
    memhandles 2 i * cells + 2!
    MemHandleLock >rel
    0 swap !

```

```
MemHandleUnlock
drop
loop ;
```

```
\ callback function
: loaditem
\ See Palm OS docs for stack
\ variables -- too many to
\ list here! But I will comment
\ as to what I think I'm
\ manipulating...!

callback

\ Put tableptr, row, col,
\ and editable on stack
\ and store row
2>r dup row ! >r >r >r
\ store relative address of
\ dataH, dataOffset, and dataSize
2dup 2>r >rel dH !
2dup 2>r >rel dOffset !
2dup >rel dSize !
\ put all the variables back
2r> 2r> r> r> r> 2r>
\ find the offset into memhandles
row @ 2 * cells memhandles + 2@
\ store offset into dataH
dH @ 2!
\ store 0 into dataOffset
0 dOffset !
\ store size into dataSize
dH @ 2@ MemHandleSize
dSize @ 2!
\ return Err
0. d0!
end-callback
;
```

Thanks to whoever made it to the bottom of this post. Any help is appreciated...

Thanks,

Matthew Blair

Re: Callback functions and Palm OS

Posted by [Neal Bridges](#) on September 02, 1999 at 10:34:11:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Matthew Blair on September 02, 1999 at 08:16:13:

> Thanks to whoever made it to the bottom of
> this post. Any help is appreciated...

How is it not working? Which part of the code is failing? How far do you need to whittle-down the callback until it stops failing?

Neal

Re: Callback functions and Palm OS

Posted by [Matthew Blair](#) on September 02, 1999 at 10:51:31:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Neal Bridges on September 02, 1999 at 10:34:11:

> > Thanks to whoever made it to the bottom of
> > this post. Any help is appreciated...

> How is it not working? Which part of the code is failing? How far do you need
> to whittle-down the callback until it stops failing?

> Neal

Neal,

So far, my experience with debugging Quartus apps has been to, as you say, whittle-down the suspect code to find a "safe" point, and then build back up. In this case, however, I did not think I could apply that technique to the debugging of the callback because the OS expects to have data returned to it (dHandle, dOffset, and dSize).

Is there a way for me to "stop" the program at the callback entry point, and step through the code? I'm thinking maybe I could put

key drop

at certain intervals along
with

." Diagnostic message #1"

To answer your first question, though, the program fails with a Fatal Exception at the callback. The memory handle initialization piece has already been checked out.

I included it only for reference (and the possibility that I am storing the MemHandles incorrectly).

On a tangential note, once an array has been declared (using the toolkit library, how does one access elements of that array?

Many thanks,

Matt

Re: Callback functions and Palm OS

Posted by [Neal Bridges](#) on September 02, 1999 at 11:33:36:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Matthew Blair on September 02, 1999 at 10:51:31:

> Is there a way for me to "stop" the program at the callback
> entry point, and step through the code? I'm thinking maybe
> I could put

key drop

at certain intervals along

> with

." Diagnostic message #1"

Put a 'beep' in, see if you get to the beep, move the beep forward accordingly. I/O and screen output will only complicate matters from within a callback.

> On a tangential note, once an array has been declared

> (using the

toolkit

library, how does one

> access elements of that array?

```
10 array myarray \ create a ten-cell array
```

```
6 5 myarray ! \ store 6 at element 5
```

```
5 myarray @ . -> 6
```

Neal

Re: Callback functions and Palm OS

Posted by [Matthew Blair](#) on September 02, 1999 at 12:14:41:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Neal Bridges on September 02, 1999 at 11:33:36:

> Put a 'beep' in, see if you get to the beep, move the beep forward accordingly.
> I/O and screen output will only complicate matters from within a callback.
> Neal

Neal,

As with an earlier thread where I asked a similar question about debugging, 'beep'ing is of little help to me since I am hearing impaired.

From my point of view, I can see where screen output would not work since it would necessarily involve a call to the API, and my callback makes use of the >r and r> words.

Is there something else I could try, short of enlisting the aid of a patient person with good hearing? :^)

BTW -- thanks for your help. I know that you are busy enough, which makes me really appreciate the assistance you give to even a lowly unregistered (not a permanent condition, though) user such as myself...

-- Matt

Re: Callback functions and Palm OS

Posted by [Neal Bridges](#) on September 02, 1999 at 12:17:52:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Matthew Blair on September 02, 1999 at 12:14:41:

> As with an earlier thread where I asked a similar question about debugging, 'beep'ing is of little help to me since I am hearing impaired.

Sorry; forgot that. Use the backlight module to turn the backlight on then.

> BTW -- thanks for your help. I know that you are busy enough, which makes me really appreciate the assistance you give to even a lowly unregistered (not a permanent condition, though) user such as myself...

I'm glad to help.

Neal

Re: Callback functions and Palm OS

Posted by [Matthew Blair](#) on September 02, 1999 at 13:35:55:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Neal Bridges on September 02, 1999 at 12:17:52:

> > As with an earlier thread where I asked a similar question about
> > debugging, 'beep'ing is of little help to me since I am hearing
> > impaired.

> Sorry; forgot that. Use the backlight module to turn the backlight on then.

> > BTW -- thanks for your help. I know that you are busy enough,
> > which makes me really appreciate the assistance you give to
> > even a lowly unregistered (not a permanent condition, though)
> > user such as myself...

> I'm glad to help.

> Neal

OK. I've got the information that you originally asked for!
I placed the words 'true backlight' just after the 'callback'
word. Backlight does not come on. I placed the words
'true backlight' just before the end of the table initialization
routine (where I would call FrmGetActiveFrm FrmDrawForm) and
the backlight comes on. Thus, I conclude that I've really
screwed up !! :^)

Does that help?

Thanks,

Matthew

Re: Callback functions and Palm OS

Posted by [Neal Bridges](#) on September 02, 1999 at 13:46:22:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Matthew Blair on September 02, 1999 at 13:35:55:

> OK. I've got the information that you originally asked for!
> I placed the words 'true backlight' just after the 'callback'
> word. Backlight does not come on. I placed the words
> 'true backlight' just before the end of the table initialization
> routine (where I would call FrmGetActiveFrm FrmDrawForm) and
> the backlight comes on. Thus, I conclude that I've really
> screwed up !! :^)

> Does that help?

Perhaps. Can I see the code where you tell the operating system about the callback?

Neal

Re: Callback functions and Palm OS

Posted by [Matthew Blair](#) on September 02, 1999 at 13:54:59:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Neal Bridges on September 02, 1999 at 13:46:22:

> > Does that help?

> Perhaps. Can I see the code where you tell the operating system about the
> callback?

> Neal

Here it is... I've included the whole init-table word
(which is pretty big, and I do plan to factor it once I
get it working!). At any rate, I've put comments throughout
to make it a bit clearer...Please note that column 0 is
the column in question.

Thanks,

Matt

```
: init-table  
  FrmGetActiveForm  
  2dup 2>r ptable 2r>
```

```
FrmGetObjectIndex
rot rot
FrmGetObjectPtr
2dup tblptr 2!
TblGetNumberOfRows
\ save # of rows for
\ init-memhandles
dup
0 do
\ Set row heights to 11 pixels
  11 i tblptr 2@
  TblSetRowHeight
\ Set item style, column 0
  textTableItem >byte 0 i
  tblptr 2@
  TblSetItemStyle
\ Set item style, column 1
  customTableItem >byte 1 i
  tblptr 2@
  TblSetItemStyle
  true i tblptr 2@
  TblSetRowUsable
loop
\ # of rows still on stack
init-memhandles
\ set callback for column 0
['] loaditem xt>abs
0 tblptr 2@
TblSetLoadDataProcedure
\ set callback for column 1
['] drawcell xt>abs
1 tblptr 2@
TblSetCustomDrawProcedure

true 0 tblptr 2@
TblSetColumnUsable
true 1 tblptr 2@
TblSetColumnUsable
FrmGetActiveForm
FrmDrawForm ;
```



Re: Callback functions and Palm OS

Posted by [Neal Bridges](#) on September 02, 1999 at 14:16:36:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Matthew Blair on September 02, 1999 at 13:54:59:

I assume your variables are all the right width, i.e. tblptr is a 2variable, etc.

Does it crash if you don't set the CustomDraw and LoadData procedures? Can you disable both, then enable one at a time, to see which one is failing -- again, by turning on the backlight after the 'callback'.

Neal

Re: Callback functions and Palm OS

Posted by [Matthew Blair](#) on September 02, 1999 at 14:27:14:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Neal Bridges on September 02, 1999 at 14:16:36:

> I assume your variables are all the right width, i.e. tblptr is a 2variable,
> etc.

> Does it crash if you don't set the CustomDraw and LoadData procedures? Can
you
> disable both, then enable one at a time, to see which one is failing --
again,
> by turning on the backlight after the 'callback'.

> Neal

Neal,

I've attached the whole file below. I believe that all of the variables are the right width.

The program crashes under all of the conditions above. I believe that is due to the fact that the Table Manager is expecting a callback for the "textTableItem". Supporting evidence: When I change the "textTableItem" to a "customTableItem" and comment out the TblSetLoadDataProcedure block, the code works (this is the configuration that Trevor Steele helped me reach).

init-table is the word that is called from my program. All of the other words support init-table.

Matt

```

\ table2_funcs 1999-08-30 MPB

needs toolkit
needs formconst
needs backlight

\ table item styles
0 enum tblItemStyles
  tblItemStyles checkboxTableItem
  tblItemStyles customTableItem
  tblItemStyles labelTableItem
  tblItemStyles numericTableItem
  tblItemStyles popupTableItem
  tblItemStyles textTableItem
  tblItemStyles textwNoteTableItem
  tblItemStyles timeTableItem
  tblItemStyles narrowTxtTableItem

create tblptr 2 cells allot
variable row
variable col
variable cellbounds

20 array memh
variable dSize
variable dOffset
variable dH

: drawcell
  callback
  2>r dup >r row ! dup >r col ! 2dup
  >rel cellbounds ! r> r> 2r>
  cellbounds @ cell+ @
  cellbounds @ @
  col @ 0 = if
    s" budget " swap >abs
  else
    row @ s>d <# #s #> swap >abs
  then
  WinDrawChars
  end-callback ;

: loaditem
  callback
  true backlight
  2>r dup row ! >r >r >r
  2dup 2>r >rel dH !
  2dup 2>r >rel dOffset !
  2dup >rel dSize !
  2r> 2r> r> r> r> 2r>
  row @ 2 *
  memh 2@
  dH @ 2!

```

```

0 dOffset !
dH @ 2@ MemHandleSize
dSize @ 2!
0. d0!
end-callback
;

: init-memhandles ( rows -- )
0 do
  1 s>d MemHandleNew
  2dup 2dup
\ memh is an array
  2 i * memh 2!
  MemHandleLock >rel
  0 swap !
  MemHandleUnlock
  drop
loop ;

: init-table
FrmGetActiveForm
2dup 2>r ptable 2r>
FrmGetObjectIndex
rot rot
FrmGetObjectPtr
2dup tblptr 2!
TblGetNumberOfRows
dup
0 do
  11 i tblptr 2@
  TblSetRowHeight
  textTableItem >byte 0 i
  tblptr 2@
  TblSetItemStyle
  customTableItem >byte 1 i
  tblptr 2@
  TblSetItemStyle
  true i tblptr 2@
  TblSetRowUsable
loop
\ # of rows still on stack
init-memhandles
['] loaditem xt>abs
0 tblptr 2@
TblSetLoadDataProcedure
['] drawcell xt>abs
1 tblptr 2@
TblSetCustomDrawProcedure

true 0 tblptr 2@
TblSetColumnUsable
true 1 tblptr 2@

```

```
TblSetColumnUsable  
FrmGetActiveForm  
FrmDrawForm ;
```

Re: Callback functions and Palm OS

Posted by [Neal Bridges](#) on September 02, 1999 at 14:39:12:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Matthew Blair on September 02, 1999 at 14:27:14:

> I've attached the whole file below. I believe that all of the
> variables are the right width.

FYI, '2VARIABLE' can be used instead of CREATE ... 2 CELLS ALLOT.

> The program crashes under all of the conditions above. I believe
> that is due to the fact that the Table Manager is expecting a
> callback for the "textTableItem". Supporting evidence: When
> I change the "textTableItem" to a "customTableItem" and comment
> out the TblSetLoadDataProcedure block, the code works (this is
> the configuration that Trevor Steele helped me reach).

So it appears that the 'loaditem' function is the one that's failing. I find it curious that a 'true backlight' right after the 'callback' in 'loaditem' doesn't turn on the backlight; if in fact the callback is being called by the table routines in the OS, it should turn on.

I'd like to test this myself -- looking at your code isn't giving me any additional clues, I also need your table resource to do any testing. Mail it off to me and I'll try a few things.

Neal

Re: Callback functions and Palm OS

Posted by [Matthew Blair](#) on September 02, 1999 at 14:45:36:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Neal Bridges on September 02, 1999 at 14:39:12:

> FYI, '2VARIABLE' can be used instead of CREATE ... 2 CELLS ALLOT.

Thanks -- that will certainly save me quite a few pen strokes!

> So it appears that the 'loaditem' function is the one that's failing. I find

```
it
> curious that a 'true backlight' right after the 'callback' in 'loaditem'
doesn't
> turn on the backlight; if in fact the callback is being called by the table
> routines in the OS, it should turn on.

> I'd like to test this myself -- looking at your code isn't giving me any
> additional clues, I also need your table resource to do any testing. Mail it
> off to me and I'll try a few things.

> Neal
```

I've just sent it off to you. I think that I've sent everything that you will need. If you'd like all of the files, just let me know and I'll send them off.

Thanks again,

Matthew

Re: Callback functions and Palm OS

Posted by [Neal Bridges](#) on September 02, 1999 at 20:56:51:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Matthew Blair on September 02, 1999 at 14:45:36:

Found one bug:

```
0 enum tblItemStyles
tblItemStyles checkboxTableItem
tblItemStyles customTableItem
tblItemStyles dateTableItem \ this line was missing!
tblItemStyles labelTableItem
tblItemStyles numericTableItem
tblItemStyles popupTableItem
tblItemStyles textTableItem
tblItemStyles textwNoteTableItem
tblItemStyles timeTableItem
tblItemStyles narrowTxtTableItem
```

This omission was causing it to treat your textTableItem as a popupTableItem, which it then crashed while trying to draw (no popup list was assigned).

There's still a problem -- I continue to search!

Neal

Re: Callback functions and Palm OS

Posted by [Matthew Blair](#) on September 01, 1999 at 11:04:34:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Neal Bridges on September 01, 1999 at 10:56:04:

```
> > The callback procedure is used to obtain the data values of a table
> > item. It should have this prototype:
> > Err TableLoadDataFuncType (VoidPtr table,
> > Word row, Word column, Boolean editable,
> > VoidHand *dataH, WordPtr dataOffset,
> > WordPtr dataSize, FieldPtr fld)
> > For a text style item, the callback procedure should return the
> > handle of a block that contains a null-terminated text string, the
> > offset from the start of the block to the start of the string, and the
> > amount of space allocated for the string.
> > How do I return the handle, offset, and space? Do I just put them
> > on the stack? In what order? Which stack (since I'm using a callback)?
> The three values VoidHand *dataH, WordPtr dataOffset, and wordPtr dataSize
are
> all 32-bit absolute addresses of where you should store the information you
want
> to 'return'.
```

I'm pretty sure I know the answer to this but...Should I also pop all of the passed in values off of the stack before ending the callback?

```
> > Also, a general question about callbacks: The documentation states that
> > the callback word temporarily switches the data and return stacks. Does
> > that mean that >r and r> push and pull words off of the return stack or
> > the data stack?
> I've never tried >R and R> in a callback, but they would in fact manipulate
the
> data stack. This would be a very odd thing to do. Callbacks are called
> asynchronously by the operating system; if you manipulate the data stack from
> within a callback, you'd suddenly have new data on the stack when you didn't
> expect it.
```

I'm not sure I totally understand this. Once the system calls the callback, doesn't control remain with the callback until the end-callback word?

Thanks,

Matthew

Re: Callback functions and Palm OS

Posted by [Neal Bridges](#) on September 01, 1999 at 11:26:41:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Matthew Blair on September 01, 1999 at 11:04:34:

> > The three values VoidHand *dataH, WordPtr dataOffset, and wordPtr dataSize
> are
> > all 32-bit absolute addresses of where you should store the information you
> want
> > to 'return'.

> I'm pretty sure I know the answer to this but...Should I also pop all
> of the passed in values off of the stack before ending the callback?

No -- leave the return-stack unchanged.

> > > Also, a general question about callbacks: The documentation states that
> > > the callback word temporarily switches the data and return stacks. Does
> > > that mean that >r and r> push and pull words off of the return stack or
> > > the data stack?

> > I've never tried >R and R> in a callback, but they would in fact manipulate
> the
> > data stack. This would be a very odd thing to do. Callbacks are called
> > asynchronously by the operating system; if you manipulate the data stack
from
> > within a callback, you'd suddenly have new data on the stack when you didn't
> > expect it.

> I'm not sure I totally understand this. Once the system calls the callback,
> doesn't control remain with the callback until the end-callback word?

It does. As long as you leave both stacks balanced and unchanged when leaving
the callback, you can use R> and >R inside a callback.

Neal

Re: Callback functions and Palm OS

Posted by [Matthew Blair](#) on September 01, 1999 at 11:05:45:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Matthew Blair on September 01, 1999 at 11:04:34:

> > > The callback procedure is used to obtain the data values of a table
> > > item. It should have this prototype:

> > > Err TableLoadDataFuncType (VoidPtr table,
> > > Word row, Word column, Boolean editable,

```
> > > VoidHand *dataH, WordPtr dataOffset,  
> > > WordPtr dataSize, FieldPtr fld)  
  
> > > For a text style item, the callback procedure should return the  
> > > handle of a block that contains a null-terminated text string, the  
> > > offset from the start of the block to the start of the string, and the  
> > > amount of space allocated for the string.  
  
> > > How do I return the handle, offset, and space? Do I just put them  
> > > on the stack? In what order? Which stack (since I'm using a callback)?  
  
> > The three values VoidHand *dataH, WordPtr dataOffset, and wordPtr dataSize  
> > are  
> > all 32-bit absolute addresses of where you should store the information you  
> > want  
> > to 'return'.
```

One other thing -- do I need to put an "Err" flag on the stack before the end-callback?

Thanks,

Matthew

Re: Callback functions and Palm OS

Posted by [Neal Bridges](#) on September 01, 1999 at 11:25:10:

In Reply to: [Re: Callback functions and Palm OS](#) posted by Matthew Blair on September 01, 1999 at 11:05:45:

```
> One other thing -- do I need to put an "Err" flag on the stack before  
> the end-callback?
```

0. d0!

will do the trick.

Neal

Conflict with PZip

Posted by [Mike Dunker](#) on August 31, 1999 at 21:23:58:

It's been a while since I worked on Quartus, and I went to compile Duco to just test out the system. When I try to compile Duco to run within Quartus, it works fine. However, when I try to compile Duco as stand-alone, I get a fatal error. By using a page-up reset, I found that the Duco compile works fine.

My guess is that the conflict is with PZip (I tried with all hacks turned

off). Is anyone out there successfully running PZip and compiling stand-alone apps? I suppose that I could just disable PZip when I want to compile a stand-alone app, but I worry that there may be more hidden gotchas. I don't want to get rid of PZip, because it lets me cram more stuff on my PalmV.

Thanks!

Re: Conflict with PZip

Posted by [Neal Bridges](#) on September 01, 1999 at 11:06:56:

In Reply to: [Conflict with PZip](#) posted by Mike Dunker on August 31, 1999 at 21:23:58:

> My guess is that the conflict is with PZip (I tried with all hacks turned
> off). Is anyone out there successfully running PZip and compiling stand-alone
> apps? I suppose that I could just disable PZip when I want to compile a stand-
> alone app, but I worry that there may be more hidden gotchas. I don't want to
> get rid of PZip, because it lets me cram more stuff on my PalmV.

There shouldn't be any hidden gotchas. I'll look at PZip, see if I can find what it's doing that it shouldn't be doing, see if I can convince the developer to fix it, or otherwise compensate for it. Thanks for letting me know.

Neal

Re: Conflict with PZip

Posted by [Mike Dunker](#) on September 02, 1999 at 00:35:12:

In Reply to: [Re: Conflict with PZip](#) posted by Neal Bridges on September 01, 1999 at 11:06:56:

Just so you know, I don't have Quartus compressed with PZip, so it wouldn't be related to that.

> There shouldn't be any hidden gotchas. I'll look at PZip, see if I can find
> what it's doing that it shouldn't be doing, see if I can convince the developer
> to fix it, or otherwise compensate for it. Thanks for letting me know.

> Neal

[OFF] Windows FORTH?

Posted by [Serg Koren](#) on August 30, 1999 at 23:12:13:

This is offtopic.

Are there any decent free Windows FORTHS available that anyone can recommend?

Thanks,
S

Re: [OFF] Windows FORTH?

Posted by [Neal Bridges](#) on August 31, 1999 at 00:12:27:

In Reply to: [\[OFF\] Windows FORTH?](#) posted by Serg Koren on August 30, 1999 at 23:12:13:

> Are there any decent free Windows FORTHS available that anyone can recommend?

Win32Forth comes to mind. It's freely available at www.forth.org.

Neal

Quartus Forth mentioned in a French magazine dedicated to palmtop computers!

Posted by [Philippe de Rochembeau](#) on August 30, 1999 at 16:40:12:

The first issue of a new French magazine dedicated to palmtops called "Team Palmtops", which is published by Posse Press (www.posse-press.com), briefly mentions Quartus Forth in an article entitled "Quelle solution de développement choisir pour le Palm?" (i.e., "Which development solution should you choose for the Palm?"). The lines on Quartus Forth can be roughly translated as follows: "Quartus Forth is Forth ISO/ANSI-compliant. It is a (development) environment which runs on the Palm." Brief, but to the point. A photograph of the Quartus Forth's main screen, which appears in the article, has the following label: "Quartus Forth is one of the alternative languages available on the Palm."

Philippe de Rochembeau

Re: Quartus Forth mentioned in a French magazine dedicated to palmtop computers!

Posted by [Neal Bridges](#) on August 30, 1999 at 16:49:46:

In Reply to: [Quartus Forth mentioned in a French magazine dedicated to palmtop computers!](#) posted by Philippe de Rochembeau on August 30, 1999 at 16:40:12:

> The first issue of a new French magazine dedicated to palmtops called "Team
> Palmtops", which is published by Posse Press (www.posse-press.com), briefly
> mentions Quartus Forth in an article entitled "Quelle solution de
développement
> choisir pour le Palm?" (i.e., "Which development solution should you choose
for
> the Palm?"). The lines on Quartus Forth can be roughly translated as follows:
> "Quartus Forth is Forth ISO/ANSI-compliant. It is a (development) environment
> which runs on the Palm." Brief, but to the point. A photograph of the Quartus
> Forth's main screen, which appears in the article, has the following label:
> "Quartus Forth is one of the alternative languages available on the Palm."

Neat! Thanks for letting us know.

Neal

RsrcEdit, Take 2 and call me in the morning

Posted by [Dave Bennett](#) on August 30, 1999 at 09:53:27:

Here is the text of trying to "troubleshoot" my RsrcEdit problem. Seems to be either an obscure problem. I couldn't duplicate the problem.

On Sat, 28 Aug 1999, you wrote:

> Hi Dave,
>
> Sorry I missed your question on the Quartus forum, I usually try to monitor
> that forum for RsrcEdit questions but hadn't looked for a couple of days.
>
> I tried reproducing the case you describe but had no problem building a
> functioning MBAR. The setting of the 'selected menu' and 'selected item'
fields
> from the menu bar editor form determine whether a menu is showing when the
Menu
> button is tapped, if they're set to 0,0 - which is the default I think, that
> explains why the first pull down appears. After that though, I can't figure
out
> why the menu would be 'disabled' as you describe.

I noticed that other applications (AddressBook, Calculator) had 0, -1 so I

changed mine to that as well. Same result. Only when I copied an existing one that already worked could I get functionality.

Here are my steps.

New database: Name: MyTest, Creator: DMBB, Type: rsrc (Resource DB is checked).
OK

MyTest appears as follows:

Records: 0

Size: 84

Creator: DMBB

Type: rsrc

Resource DB is checked.

Menu, New, Form

Top: 0, Left: 0, Width: 160, Height: 160; Usable is checked.

Title: MyTest,

Preview displays what I've made so far.

OK,

Back at Resource List.

Menu, New, MenuBar.

Size: 32, ID: 1100, Type: MBAR

Apply, Open.

Menu, New.

Title changed to: Main1, top: 0, left:4 width: 37, height: 14,
selected menu: 0, selected item: -1

Apply.

Menu New.

Title changed to: Main2, top: 0, left: 45, width: 20, height: 14
selected menu: 0, selected item: -1

Apply

Menu New.

Title changed to: Main3, top: 0, left: 90, width: 20, height: 14
selected menu: 0, selected item: -1

Apply.

OK

Back to Resource List

select tFRM, set MBar ID to 1100

Preview.

Select Menu and all three appear at the top of the screen. You can select between them with no problem.

Back to Resource List.

Select MBAR 1100, Open.

Select Main1, Open.

Menu, New.

Change title to M1i1 (Menu 1, Item 1).

Top: 15, Left: 2, ID: 1101 Calc size, apply. OK

If you go to the Resource List at this point and select tFRM and preview, this still works.

Go set this up on Main2 as M2i1 with an ID of 1201.

It still works.... Hmmmm. This is not the experience I had before. Before I created several items under Main1, then under Main2, then under Main3.

Perhaps there is an issue when creating multiple items under a Main? Let's try that.

OK, under Main3 I created 3 new items M3i1, M3i2, M3i3, IDs: 1301, 1302, 1303.

Back to Resource List, select tFRM, and... it still works. Excuse me.

(AAARRRGGGHHH).

I really dislike these kinds of things. I spent at least 12 hours trying to find out what was "wrong" with my first attempt on this. It is probably some kind of obscure bug like, "if you put in an invalid or duplicate ID somewhere, it causes the whole thing to break" or something.

I'll continue on with this. Thanks for taking the time. I have already deleted the original problem stuff inside my rsrc file and replaced it with a copy'd in menu. My pilot-xfer back-up overwrites daily so I don't even have it saved anywhere.

What a frustration.

>

> ...Ah, I just tried something which looks like the behaviour you're seeing - if

> tthe height field for each of the top level menus is set to 0, the menu will display correctly but be completely un-responsive. Is that the case?

>

> If not, I wonder if you could email me the prc file that contains the bad menubar and form? I'd be more quickly able to figure out the problem.

>

> thanks, and my apologies again for not getting back to you sooner

> -roger

>

> > ----- Begin Forwarded Message -----

> > Date: 8/27/99 5:26 AM

> > Received: 8/27/99 7:12 PM

> > From: Dave Bennett, daveb@inlandtruck.com

> > Reply-To: dave.bennett@inlandtruck.com

> > To: Keithen, keithen@individeo.net

> >

```
> > On Thu, 26 Aug 1999, you wrote:
> > > Dave-
> > >
> > > >I have a support question about RsrcEdit. Is there a specific forum for
> > > >support questions?
> > > >
> > > > I've sent off your question to the author with some suggestions for where
> > > > there could be a forum of Palm developers who could also lend support.
> > > > For now, we field all the questions.
> > > >
> > > > -Keithen
> > > >
> > I'm having a problem creating an MBAR with multiple top level items. If I
> > create a resource with the same top level items as in AddressBook, I can
> > never
> > pull down the 2nd and 3rd top level items. Once I select the anything, I
> > can no
> > longer pull down any top level submenus.
> > > >
> > If I copy the MBAR from AddressBook and paste it into my resources, it
> > works.
> > Some connection is being missed somewhere. I asked about this on the
> > Quartus
> > Forth forum and was told to do the Copy from an existing application
> > routine. I
> > suspect that there is a bug of some kind in the RsrcEdit program for this
> > function creation.
> > > >
> > --
> > > >
> > Dave Bennett
> > > >
> > ----- End Forwarded Message -----
--
```

Dave Bennett

'Thens' Option

Posted by [E. Ross Helton](#) on August 29, 1999 at 15:34:45:

Hi Neal;

Sometime back I asked you about a short way to to and if then statment and you pointed me to the 'Thens' option

pre

cond

```
dup 1 = if do-number one item
dup 2 = if do-number two item
dup 3 = if do-number three item
thens
drop ;

/pre
```

Tried it and had no success in the program which I was working on.

Had to do the following to make it work. Wonder if you had any idea why the 'thens' option didn't work in my program?

```
pre
: choose ( -- 13|18|23 )
ChooseBox FrmAlert
dup 0 = if 23 dup else
dup 1 = if 18 dup else
dup 2 = if 13 dup
then then then ;

/pre
```

The code above works just fine. Why couldn't I sub the 'thens' option in its place?

The alert box called above gives the user the three option choice that the code carries out.

Thanks for the help!

Make it a good day!

Ross

Re: 'Thens' Option

Posted by [Matthew Burke](#) on August 29, 1999 at 16:05:07:

In Reply to: ['Thens' Option](#) posted by E. Ross Helton on August 29, 1999 at 15:34:45:

Ross,

In the code:

```
cond
dup 1 = if do-number one item
dup 2 = if do-number two item
dup 3 = if do-number three item
thens
drop ;
```

First, did you include the library file: condthens?
Second, you still need 'else' at the end of each condition.

I.e. the following works on my P7:

```
\ trial
needs condthens
: try cond
dup 1 = if ." one" else
dup 2 = if ." two" else
." other"
thens drop ;
```

Matt

Re: 'Thens' Option

Posted by [E.Ross Helton](#) on August 29, 1999 at 16:33:10:

In Reply to: [Re: 'Thens' Option](#) posted by Matthew Burke on August 29, 1999 at 16:05:07:

Hi Matt;

> In the code:

```
> cond
> dup 1 = if do-number one item
> dup 2 = if do-number two item
> dup 3 = if do-number three item
> thens
> drop ;
```

>

> First, did you include the library file: condthens?

Yes I did include that Library file.

> Second, you still need 'else' at the end of each condition.

No I didn't include the else because I was going by Neal's example and he hadn't included it.

> I.e. the following works on my P7:

```
> \ trial
> needs condthens
> : try cond
```

```
> dup 1 = if ." one" else  
> dup 2 = if ." two" else  
> ." other"  
> thens drop ;  
  
>  
> Matt
```

Will try your example. thanks for the help

It is great having this discussion board.

Make it a good day!

Ross

Re: 'Thens' Option

Posted by [Neal Bridges](#) on August 29, 1999 at 16:36:54:

In Reply to: [Re: 'Thens' Option](#) posted by E.Ross Helton on August 29, 1999 at 16:33:10:

```
> No I didn't include the else because I was going by Neal's example and he  
hadn't  
> included it.
```

```
> Will try your example. thanks for the help
```

```
> It is great having this discussion board.
```

Sorry Ross; I must have mistyped my example. You do need the 'else'.

Neal

Re: 'Thens' Option

Posted by [E. Ross Helton](#) on August 29, 1999 at 16:43:07:

In Reply to: [Re: 'Thens' Option](#) posted by Neal Bridges on August 29, 1999 at 16:36:54:

Hi Neal;

```
> Sorry Ross; I must have mistyped my example. You do need the 'else'.
```

```
> Neal
```

Should have figured that out myself, but being a fairly literal person, I tend to go that way with example I see unless I am assured that I know different.

This whole thing is so new I have to stay close to what I understand and do it exactly that way.

Seems that some of Forth is totally different and some is exactly as I have learned in other languages. It is hard sometimes to get it all straight.

What was exciting for me was that I figured out a way to make it work even though I didn't do it exactly the way you have given it. That is what is important and I want to encourage others to look for their own answers too.

It's just nicer to have the shorter method which you know

Thanks again to you and to Matt

Make it a good day!

Ross

Re: 'Thens' Option

Posted by [E. Ross Helton](#) on August 30, 1999 at 00:30:28:

In Reply to: [Re: 'Thens' Option](#) posted by E. Ross Helton on August 29, 1999 at 16:43:07:

Hi Gang;

Well, it didn't work! I tried all the combinations, but nothing worked with the 'thens' option.

Can anyone give me an idea what is not working? The combination which works is the one which I figured out with the regular 'then and else' option.

Make it a good day!

Ross

Fatal Error on Compile

Posted by [Barron Snyder](#) on August 29, 1999 at 02:01:03:

When trying to create my first stand alone .prc file (using the Hello, World! example from the tutorial) I get the following error:

```
MemoryMgrNew.c,  
Line: 3101, Nill ID
```

I've looked through the archives and have found similiar errors mentioned there (though none have the same line number). I've tried the suggestions offered in the archives but they don't seem to work.

I have plenty of free memory available (using a IIIx).
I don't have any hacks installed.

Any suggestions?

Thanks,
Barron

Re: Fatal Error on Compile

Posted by [Neal Bridges](#) on August 29, 1999 at 10:09:22:

In Reply to: [Fatal Error on Compile](#) posted by Barron Snyder on August 29, 1999 at 02:01:03:

> When trying to create my first stand alone .prc file (using the Hello, World!
> example from the tutorial) I get the following error:

> MemoryMgrNew.c,
> Line: 3101, Nill ID

> I've looked through the archives and have found similiar errors mentioned
there
> (though none have the same line number). I've tried the suggestions offered
in
> the archives but they don't seem to work.

> I have plenty of free memory available (using a IIIx).
> I don't have any hacks installed.

Send me your sources; I'll try and recreate the problem.

Neal

Re: Fatal Error on Compile

Posted by [Barron Snyder](#) on August 29, 1999 at 11:23:38:

In Reply to: [Re: Fatal Error on Compile](#) posted by Neal Bridges on August 29, 1999 at 10:49:43:

> Another suggestion -- re-run in the Emulator and see what error is reported.
> If you're not set up for that, again, send me the sources and I'll run them
> here.

> Neal

I've sent you the sources.

Emulator? Are you referring to the Palm OS Emulator? When I get the fatal error, I don't get a PRC file to use with the emulator. Can I run Quartus Forth on the emulator? And compile there? Hmmm... Perhaps I should install the emulator...

-Barron

Re: Fatal Error on Compile

Posted by [Neal Bridges](#) on August 29, 1999 at 11:42:48:

In Reply to: [Re: Fatal Error on Compile](#) posted by Barron Snyder on August 29, 1999 at 11:23:38:

> > Another suggestion -- re-run in the Emulator and see what error is reported.

> > If you're not set up for that, again, send me the sources and I'll run them > > here.

> > Neal

> I've sent you the sources.

> Emulator? Are you referring to the Palm OS Emulator? When I get the fatal > error, I don't get a PRC file to use with the emulator. Can I run Quartus Forth > on the emulator? And compile there? Hmmm... Perhaps I should install the > emulator...

Yes -- compile there. I'll test it for you here.

Neal

Re: Fatal Error on Compile

Posted by [Neal Bridges](#) on August 29, 1999 at 11:53:16:

In Reply to: [Re: Fatal Error on Compile](#) posted by Neal Bridges on August 29, 1999 at 11:42:48:

> I'll test it for you here.

Ok, I received your sources and tested them here; they compile without error

both on the emulator and on a test IIIx. Can you give me some more details about what you're running on your system?

Also please try putting an ABORT after your MakePRC line; let's see if it's failing the compile, or failing copying the resources.

Neal

Re: Fatal Error on Compile

Posted by [Barron Snyder](#) on August 29, 1999 at 13:20:28:

In Reply to: [Re: Fatal Error on Compile](#) posted by Neal Bridges on August 29, 1999 at 11:53:16:

> > I'll test it for you here.

> Ok, I received your sources and tested them here; they compile without error
> both on the emulator and on a test IIIx. Can you give me some more details
> about what you're running on your system?

I emailed you a listing from my backup directory.

> Also please try putting an ABORT after your MakePRC line; let's see if it's
> failing the compile, or failing copying the resources.

I added the ABORT after the MakePRC line:

```
...  
' go (id) Helo MakePRC Hello  
ABORT  
...
```

I still get the error. :(

-Barron

Re: Fatal Error on Compile

Posted by [Neal Bridges](#) on August 29, 1999 at 13:40:30:

In Reply to: [Re: Fatal Error on Compile](#) posted by Barron Snyder on August 29, 1999 at 13:20:28:

```
> ...  
> ' go (id) Helo MakePRC Hello  
> ABORT
```

> ...

> I still get the error. :(

If you could try a reset while holding up the PgUp button, we can see if there's a conflict with some other package.

I assume, by the way, that running your code from the console works fine?

Neal

Re: Fatal Error on Compile

Posted by [Barron Snyder](#) on August 29, 1999 at 14:02:21:

In Reply to: [Re: Fatal Error on Compile](#) posted by Neal Bridges on August 29, 1999 at 13:40:30:

> If you could try a reset while holding up the PgUp button, we can
> see if there's a conflict with some other package.

> I assume, by the way, that running your code from the console works fine?

> Neal

Yes, running the code from the console works fine.

(a minute passes)

I did the type of reset that you suggested and now the compile works fine! Yippee! Believe or not, that was the first time I've done one of those. I've had my Palm for about 2.5 months and never needed to reset it before.

Sorry for all that running around...

Thanks for ALL your help and such quick responses (even on a Sunday!)? You are Plato's ideal of Tech Support (And Mine!)?!!!

-Barron

Re: Fatal Error on Compile

Posted by [Neal Bridges](#) on August 29, 1999 at 14:27:11:

In Reply to: [Re: Fatal Error on Compile](#) posted by Barron Snyder on August 29, 1999 at 14:02:21:

> I did the type of reset that you suggested and now the compile works fine!
> Yippee! Believe or not, that was the first time I've done one of those. I've
> had my Palm for about 2.5 months and never needed to reset it before.

Glad that worked; that means you've got some package that installs some sort of its own 'hack' at startup. You'll need to figure out which package it is that's causing the problem.

> Sorry for all that running around...

> Thanks for ALL your help and such quick responses (even on a Sunday!!) You are
> Plato's ideal of Tech Support (And Mine!!)!!!

No problem.

Neal

Question re: newbie project (HRCalc)

Posted by [Kent](#) on August 27, 1999 at 22:55:26:

A few days ago, Neil helpfully supplied the following code snippet by way of assisting me with my first Forth app, a target heart rate calculator:

```
variable age
variable maxhr
variable resting
0 age !
0 maxhr !
0 resting !

: maximal ( -- rate ) age @ 220 swap - ;
: diffhr ( -- diff ) maxhr @ resting @ - ;
: threshold ( -- threshold ) diffhr 2/ resting @ + ;
: upper ( -- upper ) diffhr 85 100 */ resting @ + ;
```

I'm having a little trouble reconciling the calculation of these values with the use of fields for input and output, particularly with regard to using variables. Referring back to the program description given previously, I will have input fields for age and resting heart rate, and output fields for max heart rate, threshold of training, and upper limit. Since Neil's example did not specify variables for threshold of training and upper limit, I'm not sure

how to output those values to a field.

Any assistance would be appreciated! :-)

Kent

Re: Question re: newbie project (HRCalc)

Posted by [Neal Bridges](#) on August 27, 1999 at 23:02:00:

In Reply to: [Question re: newbie project \(HRCalc\)](#) posted by Kent on August 27, 1999 at 22:55:26:

> A few days ago, Neil helpfully supplied the following code snippet by way of
> assisting me with my first Forth app, a target heart rate calculator:

```
> variable age  
> variable maxhr  
> variable resting  
> 0 age !  
> 0 maxhr !  
> 0 resting !
```

```
> : maximal ( -- rate ) age @ 220 swap - ;  
> : diffhr ( -- diff ) maxhr @ resting @ - ;  
> : threshold ( -- threshold ) diffhr 2/ resting @ + ;  
> : upper ( -- upper ) diffhr 85 100 */ resting @ + ;
```

>
> I'm having a little trouble reconciling the calculation of these values with
> the use of fields for input and output, particularly with regard to using
> variables. Referring back to the program description given previously, I will
> have input fields for age and resting heart rate, and output fields for max
> heart rate, threshold of training, and upper limit. Since Neil's example did
> not specify variables for threshold of training and upper limit, I'm not sure
> how to output those values to a field.

'threshold' and 'upper' are both words that return a value on the stack. Those values can be assigned to variables:

```
variable threshval  
variable upperlimit
```

```
threshold threshval !  
upper upperlimit !
```

Neal

graphics lib

Posted by [Dan Kowalewski](#) on August 27, 1999 at 17:21:02:

When I include the graphics library the erase-rectangle and erase-rounded-rectangle do not get added to the dictionary (after graphics is loaded, when I execute 'words' these two functions are not included or accessible). I can copy these to my own source file and they are included fine. What gives?

By the way, this is an excellent package! Well done.

-Dan

Re: graphics lib

Posted by [Neal Bridges](#) on August 27, 1999 at 17:40:51:

In Reply to: [graphics lib](#) posted by Dan Kowalewski on August 27, 1999 at 17:21:02:

> When I include the graphics library the
> erase-rectangle and erase-rounded-rectangle
> do not get added to the dictionary (after
> graphics is loaded, when I execute 'words'
> these two functions are not included or
> accessible). I can copy these to my own
> source file and they are included fine.
> What gives?

Is it possible you have more than one 'graphics' file?

> By the way, this is an excellent package!
> Well done.

Thanks!

Neal

Re: graphics lib

Posted by [Dan Kowalewski](#) on August 27, 1999 at 18:46:20:

In Reply to: [Re: graphics lib](#) posted by Neal Bridges on August 27, 1999 at 17:40:51:

> > When I include the graphics library the
> > erase-rectangle and erase-rounded-rectangle
> > do not get added to the dictionary (after
> > graphics is loaded, when I execute 'words'
> > these two functions are not included or
> > accessible). I can copy these to my own
> > source file and they are included fine.
> > What gives?

> Is it possible you have more than one 'graphics' file?

> > By the way, this is an excellent package!
> > Well done.

> Thanks!

> Neal

Indeed. The 'lines' example included an earlier graphics library (which did not contain the functions in question). I am officially a doofus.

Thanks for your quick help.

-Dan

Re: graphics lib

Posted by [E. Ross Helton](#) on August 27, 1999 at 19:33:40:

In Reply to: [Re: graphics lib](#) posted by Dan Kowalewski on August 27, 1999 at 18:46:20:

Hi Dan;

And if you're like some of the more Junior members of this elite club, you may the mistake of not putting a space in the correct place, or having one too many spaces. As your program keeps crashing, you adjust your trifocals and maybe if you're lucky you'll find that error!

One last of space between two numbers can be very hard to find sometimes, but it can cause a lot of screaming fits.

> > Neal

> Indeed. The 'lines' example included an earlier
> graphics library (which did not contain the
> functions in question). I am officially a doofus.

> Thanks for your quick help.

> -Dan

Make it a good day!
Ross

Re: graphics lib

Posted by [Matthew Burke](#) on August 27, 1999 at 19:00:31:

In Reply to: [Re: graphics lib](#) posted by Dan Kowalewski on August 27, 1999 at 18:46:20:

> I am officially a doofus.

> -Dan

Dan,

Just so you don't feel too bad....I also made this exact same mistake. And I'm sure the other passengers on the Metro all started to get a little worried as I was slowly getting louder and more vehement in my frustration :)

Matt (yes, I have gotten addicted to Quartus coding on the Metro ride home) Burke

Re: graphics lib

Posted by [Neal Bridges](#) on August 27, 1999 at 18:58:23:

In Reply to: [Re: graphics lib](#) posted by Dan Kowalewski on August 27, 1999 at 18:46:20:

> Indeed. The 'lines' example included an earlier
> graphics library (which did not contain the
> functions in question). I am officially a doofus.

> Thanks for your quick help.

No problem, Dan. Easy thing to overlook.

Neal

Quartus Forth Reference

Posted by [Luca Brigatti](#) on August 26, 1999 at 22:54:41:

Hi all,
Is there a complete quartus forth reference? A description of all the words
and what they do?

For instance, what is the Quartus equivalent for SEE?

Thanks

Re: Quartus Forth Reference

Posted by [Neal Bridges](#) on August 26, 1999 at 23:37:27:

In Reply to: [Quartus Forth Reference](#) posted by Luca Brigatti on August 26, 1999
at 22:54:41:

> Is there a complete quartus forth reference? A description of all the words
> and what they do?
> For instance, what is the Quartus equivalent for SEE?

The Standard (available from the Online Resources page of the manual) covers
most of the system, while the manual describes the function of all non-standard
words.

SEE is provided as part of the *disasm* module, available in the File
Area.

Neal

Spanish Palm V & Decimal Entry

Posted by [Barry Ekstrand](#) on August 26, 1999 at 18:24:54:

I received a note from a user with a Spanish version of a Palm V that
apparently can't get the numeric fields to accept a decimal entry, having tried
using a period (should work) and a comma (not sure if this should work on a non-
English machine, it won't on an English machine) as the decimal point. I've
not heard of this anyone else previously. Is there anything special needed in

development to ensure compatibility with non-English Palm machines? Has anyone else ever run into this?

Regards,

Barry Ekstrand

Re: Spanish Palm V & Decimal Entry

Posted by [Neal Bridges](#) on August 26, 1999 at 22:09:50:

In Reply to: [Spanish Palm V & Decimal Entry](#) posted by Barry Ekstrand on August 26, 1999 at 18:24:54:

> I received a note from a user with a Spanish version of a Palm V that
> apparently can't get the numeric fields to accept a decimal entry, having
tried
> using a period (should work) and a comma (not sure if this should work on a
non-
> English machine, it won't on an English machine) as the decimal point. I've
> not heard of this anyone else previously. Is there anything special needed
in
> development to ensure compatibility with non-English Palm machines? Has
anyone
> else ever run into this?

Never crossed my mind. As far as I know the two possible separators are the
comma and the period, so the numeric field should allow either -- moreover,
>NUMBER will only translate the period correctly, as per the Standard. I
believe I have a Spanish ROM; I'll see what I can see.

Neal

Resolved!: Spanish Palm V & Decimal Entry

Posted by [Barry Ekstrand](#) on September 01, 1999 at 08:10:23:

In Reply to: [Re: Spanish Palm V & Decimal Entry](#) posted by Neal Bridges on August 26, 1999 at 22:09:50:

I got another note from the user and he found that he had his Palm V
preferences set to use commas as the decimal point delimiter. Since the input
fields are numeric, they expect a period instead and wouldn't accept the
comma. He changed his preferences setting to use periods instead and now all
is wonderful. A simple fix, and one to remember for others that might find
themselves in a similar situation.

It does breed the question, however: is there any way to make a numeric field

accept commas OR periods as decimal delimiters?

Regards,

Barry Ekstrand

> > I received a note from a user with a Spanish version of a Palm V that
> > apparently can't get the numeric fields to accept a decimal entry, having
> tried
> > using a period (should work) and a comma (not sure if this should work on a
> non-
> > English machine, it won't on an English machine) as the decimal point.
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> > not heard of this anyone else previously. Is there anything special needed
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> > development to ensure compatibility with non-English Palm machines? Has
> anyone
> > else ever run into this?

> Never crossed my mind. As far as I know the two possible separators are the
> comma and the period, so the numeric field should allow either -- moreover,
> >NUMBER will only translate the period correctly, as per the Standard. I
> believe I have a Spanish ROM; I'll see what I can see.

> Neal

Re: Resoved!: Spanish Palm V & Decimal Entry

Posted by [Neal Bridges](#) on September 01, 1999 at 10:50:47:

In Reply to: [Resoved!: Spanish Palm V & Decimal Entry](#) posted by Barry Ekstrand
on September 01, 1999 at 08:10:23:

> It does breed the question, however: is there any way to make a numeric field
> accept commas OR periods as decimal delimiters?

One simple method is not to use numeric fields; they don't work in version 1 of
the Palm OS anyway. Use normal fields, and disregard non-numeric characters.

Neal

Resource Editor

Posted by [Barry Marks](#) on August 26, 1999 at 12:03:21:

The problem I'm having with the resource editor comes from the way I've been using the palm, off and on. I get frustrated with the GUI, never having liked GUI's anyway. So I start something and then drop it. Later I start something else and get a little farther and drop it again.

The result is that I have a lot of resource files and cant remember what they're all for. I also don't remember which are mine and which belong to one of the many, many apps I've installed. It's gotten unmanagable.

I'd like to suggest that RSRCEDIT be able to filter out resources it's resource file list in some way so I can only look at those I've made, or at least only look at resource files.

I'm finding Forth pretty easy as I go along, compared to the GUI. I guess I've probably done more Forth in my life (and RPL on my HP48) than I have done GUI programming.

Any suggestions on how to clean this up? If I don't solve it I'll probably end up clearing ram and re-installing everything from scratch, taking notes as I do.

Barry

Re: Resource Editor

Posted by [Neal Bridges](#) on August 26, 1999 at 14:32:26:

In Reply to: [Resource Editor](#) posted by Barry Marks on August 26, 1999 at 12:03:21:

> The problem I'm having with the resource editor comes from the way I've been
> using the palm, off and on. I get frustrated with the GUI, never having liked
> GUI's anyway. So I start something and then drop it. Later I start something
> else and get a little farther and drop it again.

> The result is that I have a lot of resource files and cant remember what
> they're all for. I also don't remember which are mine and which belong to one
> of the many, many apps I've installed. It's gotten unmanagable.

> I'd like to suggest that RSRCEDIT be able to filter out resources it's
resource
> file list in some way so I can only look at those I've made, or at least only
> look at resource files.

> I'm finding Forth pretty easy as I go along, compared to the GUI. I guess
I've
> probably done more Forth in my life (and RPL on my HP48) than I have done GUI

> programming.

> Any suggestions on how to clean this up? If I don't solve it I'll probably end

> up clearing ram and re-installing everything from scratch, taking notes as I do.

To clean up, I suggest you copy everything to your desktop using `pilot-xfer`; then check each PRC for a code resource. The ones with no code resource are likely RsrcEdit resource databases.

Neal

Re: Resource Editor

Posted by [Barry Marks](#) on August 26, 1999 at 18:09:41:

In Reply to: [Re: Resource Editor](#) posted by Neal Bridges on August 26, 1999 at 14:32:26:

> To clean up, I suggest you copy everything to your desktop using `pilot-xfer`;
> then check each PRC for a code resource. The ones with no code resource are
> likely RsrcEdit resource databases.

How can I match them? Do all PRC's have the same name as their corresponding code resources?

Barry (wishing for file extensions :)

Re: Resource Editor

Posted by [Carl Jacobsen](#) on August 26, 1999 at 22:33:55:

In Reply to: [Re: Resource Editor](#) posted by Barry Marks on August 26, 1999 at 18:09:41:

> > To clean up, I suggest you copy everything to your desktop using `pilot-xfer`;
> > then check each PRC for a code resource. The ones with no code resource are
> > likely RsrcEdit resource databases.

>

> How can I match them? Do all PRC's have the same name as their corresponding
> code resources?

>

> Barry (wishing for file extensions :)

If it's of any help, I hacked together a perl script ("`pilot_ls`") some time back to scan a directory full of `.prc/.pdb` files and print a nice one-line-per-file listing with creator and type displayed (along with

the internal name for the database; the filename, if it differs; and the size in kbytes). It sorts and groups the entries by creator, so databases tend to end up next to their corresponding programs.

If you sit in your backup directory and run `pilot_ls`, redirecting into a file, you should be able to use your favorite editor to hack out the parts you already know about and then see what's left over.

If you're on Windows and don't yet have Perl installed, you can get it [here](#).

(Not trying to hawk my script, just fending off the likely initial response of "But I have Windows, so I can't run Perl scripts".)

-- Carl

- [pilot_ls](#)

Re: Resource Editor

Posted by [Barry Marks](#) on August 27, 1999 at 15:30:46:

In Reply to: [Re: Resource Editor](#) posted by Carl Jacobsen on August 26, 1999 at 22:33:55:

> (Not trying to hawk my script, just fending off the likely initial response
> of "But I have Windows, so I can't run Perl scripts".)

I'm downloading Active Perl as we speak and I've already downloaded your script. From your description it sounds like it could be just what I need.

Barry

Re: Resource Editor

Posted by [Neal Bridges](#) on August 26, 1999 at 22:05:50:

In Reply to: [Re: Resource Editor](#) posted by Barry Marks on August 26, 1999 at 18:09:41:

> > To clean up, I suggest you copy everything to your desktop using
> `pilot-xfer`;

> > then check each PRC for a code resource. The ones with no code resource
> are

> > likely RsrcEdit resource databases.

> How can I match them? Do all PRC's have the same name as their corresponding
> code resources?

They do.

> Barry (wishing for file extensions :)

You might well want to preface all your RsrcEdit databases with 'Rsrc' to make them easy to spot.

Neal

Re: Resource Editor

Posted by [Barry Marks](#) on August 27, 1999 at 15:28:36:

In Reply to: [Re: Resource Editor](#) posted by Neal Bridges on August 26, 1999 at 22:05:50:

> You might well want to preface all your RsrcEdit databases with 'Rsrc' to make
> them easy to spot.

Good thought. I'll start doing something like that.

Barry

Resource Creation

Posted by [Dave Bennett](#) on August 26, 1999 at 10:39:57:

I am having a problem creating resources. I followed the Quartus/RsrcEdit sample fine and created a stand alone program. Then I went out on my own. (!)

Using RsrcEdit I created a resource with a tFRM. 0,0,160,160, and a title. Preview shows exactly what I expect it to at this point.

Next I created an MBAR with 3 top level menu items and attached it to the previously created tFRM. This also displays as expected at this point when I select preview for tFRM.

I then created subMenu items for each of the 3 top level menu items. When I choose preview under tFRM, I see the menu bar, the three top level choices, and the pull down for the first top level choice. Selecting anything makes the pulldown disappear and I cannot select another top level item again.

This is fairly frustrating as I have looked at similar menus under AddressBook and Calculator using RsrcEdit and they pull down fine.

Can someone point me in some direction on this?

Is there any opinion out there about how "good" RsrcEdit truly is for creating Palm resources for applications development?

Thanks.

--

Dave Bennett

Re: Resource Creation

Posted by [Neal Bridges](#) on August 26, 1999 at 10:56:42:

In Reply to: [Resource Creation](#) posted by Dave Bennett on August 26, 1999 at 10:39:57:

> This is fairly frustrating as I have looked at similar menus under AddressBook
> and Calculator using RsrcEdit and they pull down fine.

> Can someone point me in some direction on this?

> Is there any opinion out there about how "good" RsrcEdit truly is for creating
> Palm resources for applications development?

RsrcEdit works very well for creating resources. My best advice: copy a menu structure from another application's resources, and modify it for your own uses.

Neal

Re: Resource Creation

Posted by [Dave Bennett](#) on August 26, 1999 at 11:06:34:

In Reply to: [Re: Resource Creation](#) posted by Neal Bridges on August 26, 1999 at 10:56:42:

> > This is fairly frustrating as I have looked at similar menus under
> > AddressBook

> > and Calculator using RsrcEdit and they pull down fine.

> > Can someone point me in some direction on this?

> > Is there any opinion out there about how "good" RsrcEdit truly is for
> > creating

> > Palm resources for applications development?

> RsrcEdit works very well for creating resources. My best advice: copy a menu
> structure from another application's resources, and modify it for your own
uses.

My suspicion was that this didn't work properly under RsrcEdit in the "create" mode.

> Neal

Re: Resource Creation

Posted by [Neal Bridges](#) on August 26, 1999 at 11:08:16:

In Reply to: [Re: Resource Creation](#) posted by Dave Bennett on August 26, 1999 at 11:06:34:

> My suspicion was that this didn't work properly under RsrcEdit in the "create" > mode.

It's the method I use when creating a new app. Saves me from worrying about all the little settings; I just start with a working menu and modify/add to it as required.

Neal

Description of words in libraries?

Posted by [JL Martinez](#) on August 25, 1999 at 07:25:16:

Hi:

Is there any description of what the words in the included libraries do? Some of them are not clear for the uninitiated.

Thanks.

Re: Description of words in libraries?

Posted by [Neal Bridges](#) on August 25, 1999 at 07:32:09:

In Reply to: [Description of words in libraries?](#) posted by JL Martinez on August 25, 1999 at 07:25:16:

> Is there any description of what the words in the included libraries do?
> Some of them are not clear for the uninitiated.

The manual has a section on the more often-used library words; if there's a specific file that you'd like more info on, let me know.

Neal

Automatic file loading?

Posted by [JL Martinez](#) on August 25, 1999 at 07:22:43:

Hi:

I would like to know if it is possible to automatically load a file in QuarutsForth when starting it. I have found that some useful words in some tutorials are in some of the libraries and is getting in my nerves to type "include this" every time that I need a certain word.

Thanks.

Re: Automatic file loading?

Posted by [Neal Bridges](#) on August 25, 1999 at 07:31:05:

In Reply to: [Automatic file loading?](#) posted by JL Martinez on August 25, 1999 at 07:22:43:

> I would like to know if it is possible to automatically load a file in
> QuarutsForth when starting it. I have found that some useful words in some
> tutorials are in some of the libraries and is getting in my nerves to type
> "include this" every time that I need a certain word.

The file 'startup.quartus' is loaded each time Quartus Forth starts -- you can include any such files there.

Neal

Re: Automatic file loading?

Posted by JL Martinez on August 25, 1999 at 09:55:20:

In Reply to: [Re: Automatic file loading?](#) posted by Neal Bridges on August 25, 1999 at 07:31:05:

> > I would like to know if it is possible to automatically load a file in
> > QuarutsForth when starting it. I have found that some useful words in some
> > tutorials are in some of the libraries and is getting in my nerves to type

> > "include this" every time that I need a certain word.

> The file 'startup.quartus' is loaded each time Quartus Forth starts -- you can
> include any such files there.

> Neal

Thank you very much! Very helpful.

Maybe this info should be somewhere in the manual.

Regards.

Re: Automatic file loading?

Posted by [Neal Bridges](#) on August 25, 1999 at 10:41:07:

In Reply to: [Re: Automatic file loading?](#) posted by JL Martinez on August 25, 1999 at 09:55:20:

> Thank you very much! Very helpful.

> Maybe this info should be somewhere in the manual.

In fact it is in the manual; I shall see about making it more obvious.

Neal

A valid definition to dump?

Posted by [Ken Corey](#) on August 25, 1999 at 03:50:27:

Hi All.

I just got a hold of Dick Pountain's book "Object-Oriented Forth: Implementing Data Structures". It's got some cool ideas on how to handle structures, data encapsulation, etc. However, it does require knowlege of the dictionary structure for it to work.

To that end I'd like to have a simple hex dump routine. Here's what I have right now (I hope the funny characters are escaped for this web posting...):

```
\ dump
variable dump.offset
variable dump.modulo
variable dump.count
: dump ( addr count -- )
dump.count !
```

```
0 dump.offset !
0 dump.modulo !
hex
cr
begin
dup dump.offset @ 2 * + @
dup
65280 and 8 rshift 0
<# # #s 32 hold #> type
255 and 0
<# # #s 32 hold #> type
dump.modulo 1+ 1+
dump.modulo @ 8 mod 0= if cr then
dump.count 1-
dump.offset 1+
dump.count @ 0= until
decimal
drop
;
```

The only problem is that it only seems to work for even addresses between 0 and HERE. Dumping after HERE reports an address error.

Odd addresses I understand will cause an address error. No problem. However, if I try to look at dictionary entries with this small dumper, (where ' reports the address is -12525 or some such), I get the message that quartus has just tried to read from the registers, and then another dialog saying 'bus error'.

Can someone clue in a newbie here?

-Ken

Re: A valid definition to dump?

Posted by [Carl Jacobsen](#) on August 25, 1999 at 13:36:56:

In Reply to: [A valid definition to dump?](#) posted by Ken Corey on August 25, 1999 at 03:50:27:

> Can someone clue in a newbie here?

Glad to (try to) help a fellow recent-convert-to-Forth :-)

I have to run off somewhere shortly, so this time I'll have to resist the temptation to rewrite the code at hand [:-)], and limit myself to some (hopefully) useful hints:

* Neal's right, you're causing yourself unnecessary grief by using @ and splitting up the resultant cell, rather than using C@.
Suggest you rework your code to step through one byte at a time,

using `C@` -- would simplify things quite a bit, and eliminate the odd/even address problem (if you want to get fancy, you can use `c@a` to get anywhere on the Pilot).

* The HEX at the beginning will have deleterious effects on the various multi-digit decimal constants in your code (65280, 255, 32). Suggest you switch between HEX and DECIMAL just around your output code. Neal has a great word named (hex) that applies to just the immediately following constant. 65280 could thus be much more clearly written as: (hex) ff00 (But then, if you step a byte at a time, you won't need this bitmask anyway.)

* In the `<# ... #>` code, 32 could be more clearly written as BL (which, among other things, is immune to the effects of the current base).

* If you're trying to line up columns, the #S may thwart you -- better to give enough # words to handle the maximum width of the value at hand.

* `1+` and `1-` increment and decrement the top cell on the stack, *not* the cell to which it points. Instead of:

```
dump.modulo 1+ 1+
```

for example, you probably want:

```
2 dump.modulo +!
```

instead.

* Personally, I find code reads much better when one follows the common practice of writing all the ANS Forth words in uppercase (but then I tend to write them in lowercase and then use MagicText's uppercase function to transmogrify them).

Hope this helps (and hope I haven't screwed up the HTML this time),
-- Carl

Re: A valid definition to dump?

Posted by [Neal Bridges](#) on August 25, 1999 at 07:34:28:

In Reply to: [A valid definition to dump?](#) posted by Ken Corey on August 25, 1999 at 03:50:27:

> I just got a hold of Dick Pountain's book "Object-Oriented Forth: Implementing
> Data Structures". It's got some cool ideas on how to handle structures, data
> encapsulation, etc. However, it does require knowlege of the dictionary
> structure for it to work.

I have Dick Pountain's book. While it has interesting ideas, it is pre-ANS Forth, and so any such code you develop for one Forth will very likely not work on another. I suggest reading Dick's book for ideas, but using one of the ANS OOP modules available -- there's one in the File Area, as a starting point.

> To that end I'd like to have a simple hex dump routine. Here's what I have
> right now (I hope the funny characters are escaped for this web posting...):

One thing about your hex dump routine -- it only displays dataspace. In Quartus Forth, dataspace and codespace are distinct.

Neal

Re: A valid definition to dump?

Posted by [Erwin Schomburg](#) on August 25, 1999 at 05:12:38:

In Reply to: [A valid definition to dump?](#) posted by Ken Corey on August 25, 1999 at 03:50:27:

> Odd addresses I understand will cause an address error. No problem. However,
> if I try to look at dictionary entries with this small dumper, (where ' reports
> the address is -12525 or some such), I get the message that quartus has just
> tried to read from the registers, and then another dialog saying 'bus error'.
> Can someone clue in a newbie here?

> -Ken

I havn't got the time at hand at present to comment on your code and/or its purposes, but if you want to read a value (a byte) from an odd address, you need to use "c@" to avoid a "bus error" fatal.

May the Forth be with you!

/Erwin

Re: A valid definition to dump?

Posted by [Barry Marks](#) on August 26, 1999 at 12:13:34:

In Reply to: [Re: A valid definition to dump?](#) posted by Erwin Schomburg on August 25, 1999 at 05:12:38:

I hope Neal doesn't mind my reposting this. He offered it as a suggestion when I was writing a dump as my first Forth program.

\nealsDUMP and DU 99.02.27

```
\ MRW
needs core-ext
needs toolkit

: d.2 ( addr len -- )
bounds ?do i c@ s>d <# # # #> type space loop ;

: emit. ( char -- )
dup bl 127 within 0= if drop [char] . then emit ;

: dln ( addr --- )
cr dup 4 u.r [char] : emit 2 spaces
dup 8 d.2 space 8 bounds ?do i c@ emit. loop ;

: DUMP ( addr len -- )
hex bounds
?do i dln ekey? if ekey
drop leave
then 8
+loop decimal cr ;

: DU ( addr -- addr+64 )
dup 64 dump 64 + ;
```

Re: A valid definition to dump?

Posted by [Neal Bridges](#) on August 26, 1999 at 15:59:55:

In Reply to: [Re: A valid definition to dump?](#) posted by Barry Marks on August 26, 1999 at 12:13:34:

> I hope Neal doesn't mind my reposting this. He offered it as a suggestion when

> I was writing a dump as my first Forth program.

I don't mind. I'm sure I didn't write it, however.

Neal

Re: A valid definition to dump?

Posted by [Barry Marks](#) on August 27, 1999 at 19:15:43:

In Reply to: [Re: A valid definition to dump?](#) posted by Neal Bridges on August 26, 1999 at 15:59:55:

> > I hope Neal doesn't mind my reposting this. He offered it as a suggestion
> when
> > I was writing a dump as my first Forth program.
> I don't mind. I'm sure I didn't write it, however.

I remember at that time someone else offered a sample too. I wonder if I got them mixed up. Sorry for the confusion.

Barry

Another Quartus Siting

Posted by [E. Ross Helton](#) on August 24, 1999 at 14:25:42:

Hi All;

At the link below you will find a review of Quartus Forth

Enjoy

Make it a good day!

Ross

- [Quartus Forth Review](#)

Another Quartus Sighting

Posted by [E. Ross Helton](#) on August 24, 1999 at 15:56:50:

In Reply to: [Another Quartus Siting](#) posted by E. Ross Helton on August 24, 1999 at 14:25:42:

> Hi All;

> At the link below you will find a review of Quartus Forth

> Enjoy

> Make it a good day!

> Ross

Sorry I misspelled the word Sighting in the original note

Make it good day!

Ross

- [Quartus Forth](#)

Re: Another Quartus Sighting

Posted by [Erwin Schomburg](#) on August 25, 1999 at 07:58:49:

In Reply to: [Another Quartus Sighting](#) posted by E. Ross Helton on August 24, 1999 at 15:56:50:

> > Hi All;

> > At the link below you will find a review of Quartus Forth

> > Enjoy

> > Make it a good day!

> > Ross

> Sorry I misspelled the word Sighting in the original note

> Make it good day!

> Ross

Neal's confirmation pending, I dub thee "Official Quartus and Quartus Application's Horn Tooter".

May the Forth be with you!

/Erwin

OS3.3 beta program -- issues

Posted by [Neal Bridges](#) on August 24, 1999 at 13:23:52:

Hi folks. If you're part of the Palm OS 3.3 beta, and you're a registered Quartus Forth user, let me know -- there's a patch required in the registration-code check. I'll send the new binary to any registered Quartus Forth user who is testing the OS 3.3 beta.

Neal

Question about tables

Posted by [Matthew Blair](#) on August 23, 1999 at 09:40:34:

Hi,

I'm trying to use a simple table in my application. The table only has two columns and two rows (for testing -- later I will expand the number of rows). Both columns are of numeric type. I have been following the Tables-howto and the Palm Programming Guide at 3COM.

My problem is that after I initialize the table and do a FrmDrawForm, the table does not appear in the "correct" place. Actually, I do not see the table but instead a blank rectangle which covers up other form components. Furthermore, it seems that no matter what I set the "top" coordinate to (in RsrcEdit), the top of the table always starts at 0 (changing the left coordinate does work).

I did a TblGetBounds to be sure that the form resources were being written correctly, and it appears that they are OK. Am I misunderstanding the use of the coordinates? Below I have listed the specifications of this table as it is entered into RsrcEdit.

```
top: 100
left: 0
width: 160
height: 40
rows: 2
ID: 1110
NOT Editable
Column Widths: 70 and 10
```

Here's the code I use to initialize the table.

```
create tblptr 2 cells allot

: init-table
  FrmGetActiveForm
    2dup 2>r ptable 2r>
  FrmGetObjectIndex
    rot rot
  FrmGetObjectPtr
  2dup tblptr 2!
  TblGetNumberOfRows
    1 do
\ Initialize rows for each column
    4 >byte 0 i 1-
    tblptr 2@
      TblSetItemStyle
    i 0 i 1- tblptr 2@
      TblSetItemInt
    4 >byte 1 i 1-
    tblptr 2@
```

```
        TblSetItemStyle
    i 1 i 1- tblptr 2@
        TblSetItemInt
loop
\ Set rows and columns usable
    true 0 tblptr 2@
        TblSetRowUsable
true 1 tblptr 2@
    TblSetRowUsable
true 0 tblptr 2@
    TblSetColumnUsable
    true 1 tblptr 2@
        TblSetColumnUsable
FrmGetActiveForm
FrmDrawForm ;
```

Any help is appreciated.

Thanks,

Matthew Blair

Re: Question about tables

Posted by [Matthew Blair](#) on August 23, 1999 at 15:31:55:

In Reply to: [Question about tables](#) posted by Matthew Blair on August 23, 1999 at 09:40:34:

> Hi,

> I'm trying to use a simple table in my application. The table only
> has two columns and two rows (for testing -- later I will expand the
> number of rows). Both columns are of numeric type. I have been
> following the Tables-howto and the Palm Programming Guide at 3COM.

> My problem is that after I initialize the table and do a FrmDrawForm,
> the table does not appear in the "correct" place. Actually, I do not
> see the table but instead a blank rectangle which covers up other form
> components. Furthermore, it seems that no matter what I set the "top"
> coordinate to (in RsrcEdit), the top of the table always starts at 0
> (changing the left coordinate does work).

Just wanted to follow up -- I think I've figured out the problem.
I did not mark the rows invalid in my initialization procedure using
TblMarkRowInvalid. Once I did that (as per the Tables-HOWTO),
the table "appears" (still a blank rectangle) in the proper location.

-- Matt

Re: Question about tables

Posted by [Trevor Steele](#) on August 23, 1999 at 12:17:49:

In Reply to: [Question about tables](#) posted by Matthew Blair on August 23, 1999 at 09:40:34:

> Hi,

> I'm trying to use a simple table in my application. The table only
> has two columns and two rows (for testing -- later I will expand the
> number of rows). Both columns are of numeric type. I have been
> following the Tables-howto and the Palm Programming Guide at 3COM.

Tables can lead to much grief! However once mastered they work very well!
I will look in more detail at your code when I get a chance.

> My problem is that after I initialize the table and do a FrmDrawForm,
> the table does not appear in the "correct" place. Actually, I do not
> see the table but instead a blank rectangle which covers up other form
> components. Furthermore, it seems that no matter what I set the "top"
> coordinate to (in RsrcEdit), the top of the table always starts at 0
> (changing the left coordinate does work).

> I did a TblGetBounds to be sure that the form resources were being
> written correctly, and it appears that they are OK. Am I misunderstanding
> the use of the coordinates? Below I have listed the specifications of this
> table as it is entered into RsrcEdit.

> top: 100
> left: 0
> width: 160
> height: 40
> rows: 2
> ID: 1110
> NOT Editable
> Column Widths: 70 and 10

> Here's the code I use to initialize the table.

>

> create tblptr 2 cells allot

```
> : init-table
>     FrmGetActiveForm
>     2dup 2>r ptable 2r>
>     FrmGetObjectIndex
>     rot rot
>     FrmGetObjectPtr
>     2dup tblptr 2!
>     TblGetNumberOfRows
```

```
> 1 do
> \ Initialize rows for each column
>     4 >byte 0 i 1-
>     tblptr 2@
>     TblSetItemStyle
>     i 0 i 1- tblptr 2@
>     TblSetItemInt
>     4 >byte 1 i 1-
>     tblptr 2@
>     TblSetItemStyle
>     i 1 i 1- tblptr 2@
>     TblSetItemInt
> loop
> \ Set rows and columns usable
> true 0 tblptr 2@
>     TblSetRowUsable
>     true 1 tblptr 2@
>     TblSetRowUsable
>     true 0 tblptr 2@
>     TblSetColumnUsable
>     true 1 tblptr 2@
>     TblSetColumnUsable
>     FrmGetActiveForm
>     FrmDrawForm ;
>
```

> Any help is appreciated.

> Thanks,

> Matthew Blair

Here are some suggestions in the meantime. Check out some of my discussions with Neal where I was having similar problems. The postings are "The truth about tables" 6.29.99 (I see you didn't fall into that trap) and "More on tables" 11.08.99. There is also a good tutorial at http://www.iosphere.net/~howlett/pilot/GNU_Pilot.html which you can look up and try. Although written for C it does apply to Forth as well. You will probably find that setting up a drawcallback routine for the table will be necessary and I can possibly help you there. Let me know how you get on after you have read the above

Best regards

Trevor

- http://www.iosphere.net/~howlett/pilot/GNU_Pilot.html

Re: Question about tables

Posted by [Matthew Blair](#) on August 23, 1999 at 12:35:52:

In Reply to: [Re: Question about tables](#) posted by Trevor Steele on August 23, 1999 at 12:17:49:

> Here are some suggestions in the meantime. Check out some of my discussions
> with Neal where I was having similar problems. The postings are "The truth
> about tables" 6.29.99 (I see you didn't fall into that trap) and "More on
> tables" 11.08.99. There is also a good tutorial at

I studied your discussions with Neal before I even started...so it didn't
surprise me too much when I couldn't get it to work the first time :^)

> http://www.iosphere.net/~howlett/pilot/GNU_Pilot.html
> which you can look up and try. Although written for C it does apply to Forth
as
> well. You will probably find that setting up a drawcallback routine for the
> table will be necessary and I can possibly help you there. Let me know how
you
> get on after you have read the above

Saw it. I didn't want to xlate to Forth since it seemed to be a very
involved example. Do I really need a custom draw procedure? Also I
don't know much about callbacks...

Would it be possible for you to post your code in the file area as a
guide to newbies?

Thanks,

Matthew Blair

Re: Question about tables

Posted by [Trevor Steele](#) on August 24, 1999 at 05:31:14:

In Reply to: [Re: Question about tables](#) posted by Matthew Blair on August 23,
1999 at 12:35:52:

>
> > Here are some suggestions in the meantime. Check out some of my discussions
> > with Neal where I was having similar problems. The postings are "The truth
> > about tables" 6.29.99 (I see you didn't fall into that trap) and "More on
> > tables" 11.08.99. There is also a good tutorial at

> I studied your discussions with Neal before I even started...so it didn't
> surprise me too much when I couldn't get it to work the first time :^)

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> > which you can look up and try. Although written for C it does apply to
Forth
> as
> > well. You will probably find that setting up a drawcallback routine for the
> > table will be necessary and I can possibly help you there. Let me know how
> you
> > get on after you have read the above

> Saw it. I didn't want to xlate to Forth since it seemed to be a very
> involved example. Do I really need a custom draw procedure? Also I
> don't know much about callbacks...

Don't worry they're not that difficult. One of my discussions with Neal
contains an example ;-)

> Would it be possible for you to post your code in the file area as a
> guide to newbies?

> Thanks,

> Matthew Blair

Hi Matthew

Sorry for the very brief reply but I was rushing away from work and did not
have a chance to look at your problem in detail. I have looked at it and the
only thing I can see that you are missing is that you have not set your row
heights (try 11 or 12 to start with). I found that Quartus ends up with silly
default values which really screw the table drawing up. I see you have set the
style to numeric, this will or should print the values held in the TblItemInt
which means you will only be able to display integer values. You can set the
value to text but you will then be faced with an array of fields which can be
tricky to manipulate and very slow to redraw. If integer values suit your
application then fine, if not then don't worry about a customdrawcallback it's
not that difficult and gives you complete control over what you display.

I would be delighted to post my code for tables now that I know there are
others out there who would benefit. However my application has a mini
spreadsheet which used the table routines and I would need to strip the code
down somewhat to make it useful.

Let me know if you get your table to draw, if not then I'll take another look
at your code. Tables, although initially frustrating are great when mastered.

Have fun

Trevor

Re: Question about tables

Posted by [Matthew Blair](#) on August 24, 1999 at 09:03:40:

In Reply to: [Re: Question about tables](#) posted by Trevor Steele on August 24, 1999 at 05:31:14:

Trevor wrote:

> Sorry for the very brief reply but I was rushing away from work and did not
> have a chance to look at your problem in detail. I have looked at it and the
> only thing I can see that you are missing is that you have not set your row
> heights (try 11 or 12 to start with). I found that Quartus ends up with silly
> default values which really screw the table drawing up. I see you have set
the
> style to numeric, this will or should print the values held in the TblItemInt
> which means you will only be able to display integer values. You can set the
> value to text but you will then be faced with an array of fields which can be
> tricky to manipulate and very slow to redraw. If integer values suit your
> application then fine, if not then don't worry about a customdrawcallback
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> not that difficult and gives you complete control over what you display.

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> others out there who would benefit. However my application has a mini
> spreadsheet which used the table routines and I would need to strip the code
> down somewhat to make it useful.

> Let me know if you get your table to draw, if not then I'll take another look
> at your code. Tables, although initially frustrating are great when mastered.

> Have fun

>
> Trevor

Trevor,

I found that if I mark the rows invalid, then the table (or blank rectangle) appears in the right place. I added the TblSetRowHeight call in -- still doesn't appear.

As far as the integers go, I'm doing that only to keep it simple while I learn how to use tables. Eventually I will need to have two columns of text instead of integers. I'm hoping that if I can learn how to do the integers, extending the tables to do text won't be as painful as trying to do text from the beginning :^)

One thing I am curious about -- I only call this function once when I start the program. Do I need to trap the form update event and draw the table each time?

Here's the code as it stands now...

```
create tblptr 2 cells allot
```

```

: init-table
\ get pointer to table
  FrmGetActiveForm
  2dup 2>r ptable 2r>
  FrmGetObjectIndex
  rot rot
  FrmGetObjectPtr
  2dup tblptr 2!
\ find the number of rows in this table
  TblGetNumberOfRows
  1 do
\ first mark each row as invalid
  i 1- tblptr 2@
  TblMarkRowInvalid
  15 i 1- tblptr 2@
\ set row height to 15 pixels
  TblSetRowHeight
\ set each cell in column 0 to integer type
  4 >byte 0 i 1-
  tblptr 2@
  TblSetItemStyle
\ set integer in each cell in column 0
  i 0 i 1- tblptr 2@
  TblSetItemInt
\ set each cell in column 1 to integer type
  4 >byte 1 i 1-
  tblptr 2@
  TblSetItemStyle
\ set integer in each cell in column 1
  i 1 i 1- tblptr 2@
  TblSetItemInt
  loop
\ set all rows usable
  true 0 tblptr 2@
  TblSetRowUsable
  true 1 tblptr 2@
  TblSetRowUsable
\ set all columns usable
  true 0 tblptr 2@
  TblSetColumnUsable
  true 1 tblptr 2@
  TblSetColumnUsable
\ redraw Form
  FrmGetActiveForm
  FrmDrawForm ;

```

Thanks,

Matt

Re: Question about tables

Posted by [Trevor Steele](#) on August 24, 1999 at 17:47:27:

In Reply to: [Re: Question about tables](#) posted by Matthew Blair on August 24, 1999 at 09:03:40:

> Trevor,

> I found that if I mark the rows invalid, then the table (or blank
> rectangle) appears in the right place. I added the TblSetRowHeight
> call in -- still doesn't appear.

> As far as the integers go, I'm doing that only to keep it simple
> while I learn how to use tables. Eventually I will need to have
> two columns of text instead of integers. I'm hoping that if I can
> learn how to do the integers, extending the tables to do text won't
> be as painful as trying to do text from the beginning :^)

> One thing I am curious about -- I only call this function once when
> I start the program. Do I need to trap the form update event and
> draw the table each time?

Hi Matt

My experience would suggest no. I only call my routine when doing things to the table such as scrolling, if only updating values you only need to redraw the table.

> Here's the code as it stands now...

>

```
> create tblptr 2 cells allot
> : init-table
> \ get pointer to table
>   FrmGetActiveForm
>   2dup 2>r ptable 2r>
>   FrmGetObjectIndex
>   rot rot
>   FrmGetObjectPtr
>   2dup tblptr 2!
> \ find the number of rows in this table
>   TblGetNumberofRows
>   1 do
> \ first mark each row as invalid
>   i 1- tblptr 2@
>   TblMarkRowInvalid
>   15 i 1- tblptr 2@
> \ set row height to 15 pixels
>   TblSetRowHeight
> \ set each cell in column 0 to integer type
```

```

>         4 >byte 0 i 1-
>         tblptr 2@
>         TblSetItemStyle
> \ set integer in each cell in column 0
>         i 0 i 1- tblptr 2@
>         TblSetItemInt
> \ set each cell in column 1 to integer type
>         4 >byte 1 i 1-
>         tblptr 2@
>         TblSetItemStyle
> \ set integer in each cell in column 1
>         i 1 i 1- tblptr 2@
>         TblSetItemInt
> loop
> \ set all rows usable
>         true 0 tblptr 2@
>         TblSetRowUsable
>         true 1 tblptr 2@
>         TblSetRowUsable
> \ set all columns usable
>         true 0 tblptr 2@
>         TblSetColumnUsable
>         true 1 tblptr 2@
>         TblSetColumnUsable
> \ redraw Form
>         FrmGetActiveForm
>         FrmDrawForm ;
>
> Thanks,
> Matt

```

It will take me some time to produce a guide to tables to I will try and answer your questions first. I have examined your code and the good news is that it is fine. I ran it on the pilot Emulator with my own table resource and hey presto the numbered rows appeared. Well done!! The problem must lie elsewhere.

I have set out below the code which I used to test your init-table with in case there is a gremlin somewhere else in your program. If you can't find anything there then there may be a problem with your table resource.

```

\ tabletest

\ my form and table id's
1001 constant tableform
7000 constant ptable

needs resources
needs table1 \ the memo with your code

\ my creator and type for the resource
(ID) p4ap (ID) TRSS use-resources

```

```
: go
tableform ShowForm init-table
begin
ekey drop
again ;
```

I hope this is of some help. Believe me you will get the table to work. I' currently working on a simple drawcallback for you in case you need it. I should have some code for you tomorrow.

Always remember (with apologies to the random wisdom posting which appeared a while ago) there's always the Irish Forth programmers solution to problems

```
: solution
Begin Guinness drink happy until ;
```

Let me know how you get on.

Regards

Trevor

Re: Question about tables

Posted by [Matthew Blair](#) on August 25, 1999 at 08:22:56:

In Reply to: [Re: Question about tables](#) posted by Trevor Steele on August 24, 1999 at 17:47:27:

```
>
> It will take me some time to produce a guide to tables to I will try and
answer
> your questions first. I have examined your code and the good news is that it
is
> fine. I ran it on the pilot Emulator with my own table resource and hey
presto
> the numbered rows appeared. Well done!! The problem must lie elsewhere.
> I have set out below the code which I used to test your init-table with in
case
> there is a gremlin somewhere else in your program. If you can't find anything
> there then there may be a problem with your table resource.
> \ tabletest
> \ my form and table id's
> 1001 constant tableform
> 7000 constant ptable
> needs resources
> needs table1 \ the memo with your code
> \ my creator and type for the resource
```

```
> (ID) p4ap (ID) TRSS use-resources  
> : go  
> tableform ShowForm init-table  
> begin  
> ekey drop  
> again ;
```

Trevor,

Could you post the details of the TRSS resource?

```
> I hope this is of some help. Believe me you will get the table to work. I'  
> currently working on a simple drawcallback for you in case you need it. I  
> should have some code for you tomorrow.
```

Thanks for your assistance. I appreciate it very much!

```
> Regards
```

```
> Trevor
```

Re: Question about tables

Posted by [Trevor Steele](#) on August 25, 1999 at 14:12:51:

In Reply to: [Re: Question about tables](#) posted by Matthew Blair on August 25, 1999 at 08:22:56:

```
> Trevor,
```

```
> Could you post the details of the TRSS resource?
```

Hi Matt

H..mmm the complete resource is over 12K in size so I have set out below a cut down version which I have tested out and it seems to run fine.

```
> Thanks for your assistance. I appreciate it very much!
```

It's a pleasure helping you :-)

The details of the new resource created in RsrcEdit:

Name: Tabletest

Records: 1

Size 800

Creator: p4ap

Type: AAAA

ResourceDB: Checked

tFRM 1001 has the following characteristics

ID: 1001
Type: tFRM
top: 0 width: 160 Def Btn: 0
left: 0 height: 160 Mbar ID 0
Usable: checked

Title: Table Test Form

Table7000 has the following characteristics
top: 26 width: 94 rows: 17
left: 62 height: 112 ID: 7000
Column Widths: 24, 70
Editable: checked

I think that's a complete description! If there's anything missing please let me know.

As promised I have completed a callback for you. This is set up to redraw your table with column numbers instead of row numbers in the cells. However the possibilities for output are only limited by your imagination! The code with explanations is as follows:

```
\ tabletest
1001 constant tableform
7000 constant ptable

needs resources
needs docinc
docneeds Table1 \ memo with your code

variable col \ variable to store column
variable row \ variable to store row
variable cellbounds \ variable to store
\ the pointer to the bounds of the cell

(ID) p4ap (ID) AAAA use-resources

\ The call back word. The stack diagram
\ shows the values passed on the return
\ stack to the word. The callback swaps
\ the return and data stacks on a temporary
\ basis. Care must be taken to replace
\ anything removed from the return (now the
\ data stack) before the end-callback.
: drawcell
  ( &bounds. col row &table. -- )
  callback
    2>r dup >r row ! dup >r col ! 2dup
    >rel cellbounds ! r> r> 2r>
    cellbounds @ cell+ @
    cellbounds @ @
\ the double fetches arise since the first
\ fetch only fetches the address where the data
\ is stored, the second fetch gets the data.
```

```
col @ 0 <# #s #> swap >abs
WinDrawChars
end-callback ;

: CustomTable ( -- )
\ this word sets the TableItemStyle to
\ CustomTableItem and then draws the table.
\ Some of this code should be placed in your
\ init-table program.
2 0 do
  1 >byte i 0 tblptr 2@
  TblSetItemStyle
  1 >byte i 1 tblptr 2@
  TblSetItemStyle
  ['] drawcell xt>abs i tblptr 2@
\ ['] is the compiled version of ` and returns
\ the execution token of drawcell. This is then
\ converted to a 32 bit address for use by the
\ API call
  TblSetCustomDrawProcedure
loop tblptr 2@ 2dup TblEraseTable
TblDrawTable ;

: go
tableform showform init-table key
drop CustomTable
begin
  ekey drop
again ;
```

I hope this is of some help and is not too confusing. Let me know how you get on or if you need further explanation.

All the best

Trevor

Re: Question about tables

Posted by [Matthew Blair](#) on August 26, 1999 at 07:56:15:

In Reply to: [Re: Question about tables](#) posted by Trevor Steele on August 25, 1999 at 14:12:51:

> I hope this is of some help and is not too confusing. Let me know how you get
> on or if you need further explanation.

> All the best

> Trevor

Trevor,

I haven't put the callback functions in, but I was able to get it to work also....almost :) As I stated before, I was only able to display one row of the table (while I had specified 2 rows in RsrcEdit). When I changed the number of rows in RsrcEdit to 5, I was able to display 4 rows.

Also, the data in the table was displayed in bold font -- any ideas as to why?

Finally, what does setting the table "Editable" mean?

Thanks for your help! I think I'm beginning to see the light!!

Matthew

Re: Question about tables

Posted by [Trevor Steele](#) on August 27, 1999 at 04:20:32:

In Reply to: [Re: Question about tables](#) posted by Matthew Blair on August 26, 1999 at 07:56:15:

>
> > I hope this is of some help and is not too confusing. Let me know how you get
> > on or if you need further explanation.

> > All the best

> > Trevor

> Trevor,

> I haven't put the callback functions in, but I was able to get it
> to work also....almost :) As I stated before, I was only able to
> display one row of the table (while I had specified 2 rows in
> RsrcEdit). When I changed the number of rows in RsrcEdit to 5,
> I was able to display 4 rows.

Hi again Matt

I think I may have discovered your row problem, but I haven't time to check it out right now.

Try setting the bounds of your do loop

NumberOfRows 0 do

and remove the 1 - from your code. This will go round the loop exactly NumberOfRows times. It's a slight peculiarity in how Forth counts in do loops.

All the best

Trevor

> Also, the data in the table was displayed in bold font -- any
> ideas as to why?
> Finally, what does setting the table "Editable" mean?
> Thanks for your help! I think I'm beginning to see the light!!
> Matthew

Re: Question about tables

Posted by [Trevor Steele](#) on August 27, 1999 at 04:06:08:

In Reply to: [Re: Question about tables](#) posted by Matthew Blair on August 26, 1999 at 07:56:15:

>
> > I hope this is of some help and is not too confusing. Let me know how you
get
> > on or if you need further explanation.
> > All the best
> > Trevor
> Trevor,
> I haven't put the callback functions in, but I was able to get it
> to work also....almost :) As I stated before, I was only able to
> display one row of the table (while I had specified 2 rows in
> RsrcEdit). When I changed the number of rows in RsrcEdit to 5,
> I was able to display 4 rows.
> Also, the data in the table was displayed in bold font -- any
> ideas as to why?

Hi Matt

Glad to hear that things appear to be coming together. The system seems to default to bold font when the style is set to numeric. There appears to be no way of easily changing this. Believe me, I have tried! This is one of the many reasons for using the callback. It's much more flexible. Palm use the callback method in their Memopad application to draw the list of memo's in the list view which is actually displayed as a table.

> Finally, what does setting the table "Editable" mean?

I have always used this setting as it allows the programmer to get feedback, when the rows are set selectable, via a tblSelectEvent. I must admit I haven't tried unchecking the box.

> Thanks for your help! I think I'm beginning to see the light!!

> Matthew

Keep me posted with how you get on.

Good luck

Trevor

Re: Question about tables

Posted by [Matthew Blair](#) on August 24, 1999 at 14:29:47:

In Reply to: [Re: Question about tables](#) posted by Matthew Blair on August 24, 1999 at 09:03:40:

Trevor,

Some more progress. With the code below, the first row and both columns are visible. I'm not sure why the second row does not display, though.

Thanks,

Matthew

```
create tblptr 2 cells allot

: init-table
  FrmGetActiveForm
    2dup 2>r ptable 2r>
  FrmGetObjectIndex
    rot rot
  FrmGetObjectPtr
  2dup tblptr 2!
  TblGetNumberOfRows
    1 do
      15 i 1- tblptr 2@
        TblSetRowHeight
    4 >byte 0 i 1-
      tblptr 2@
        TblSetItemStyle
    4 >byte 1 i 1-
      tblptr 2@
        TblSetItemStyle
  true i 1- tblptr 2@
    TblSetRowUsable
  i 0 i 1- tblptr 2@
    TblSetItemInt
  i 1 i 1- tblptr 2@
```

```
        TblSetItemInt
loop
true 0 tblptr 2@
    TblSetColumnUsable
true 1 tblptr 2@
    TblSetColumnUsable
FrmGetActiveForm
FrmDrawForm ;
```

Another one's Fifteen Minutes of Fame

Posted by [E. Ross Helton](#) on August 20, 1999 at 19:42:33:

Hi All;

Let the trumpets blare - Let the crier announce!! One of our own has achieved another fifteen minutes of fame. I should say he deserve it. He certainly has been very good with helping some of the rest of us.

Erwin Schomburg as many of you know has writtne 'Quintominoes' among other programs.

It has a five star rating at ZDNET and it is also one of the featured programs in Preston Grallas' Pilot column at ZDNET. It is listed under some of the most popular and valuable program to use for a hot summer day. It is listed in the 'Games Galore' section. Look toward the middle of the listings.

Maybe if we all clap at the same time he will hear us. Way to go Erwin!!

You might drop him an email, especially if you have been one of those that he has been so good to help.

Erwin.Schomburg@t-online.de (his email address)

Make it a good day!

Ross

- [Games Galore at ZDDNET](#)

Re: Another one's Fifteen Minutes of Fame

Posted by Erwin on August 21, 1999 at 00:41:18:

In Reply to: [Another one's Fifteen Minutes of Fame](#) posted by E. Ross Helton on August 20, 1999 at 19:42:33:

> Hi All;

> Let the trumpets blare - Let the crier announce!! One of our own has achieved

> another fifteen minutes of fame. I should say he deserve it. He certainly has

> been very good with helping some of the rest of us.

> Erwin Schomburg as many of you know has writtne 'Quintominoes' among other
> programs.

> It has a five star rating at ZDNET and it is also one of the featured programs
> in Preston Grallas' Pilot column at ZDNET. It is listed under some of the
most

> popular and valuable program to use for a hot summer day. It is listed in the
> 'Games Galore' section. Look toward the middle of the listings.

> Maybe if we all clap at the same time he will hear us. Way to go Erwin!!

> You might drop him an email, especially if you have been one of those that he
> has been so good to help.

> Erwin.Schomburg@t-online.de (his email address)

>
> Make it a good day!

> Ross

>

Thank you Ross. Thank you, Neal, for Quartus, making it possible. Thank you all for your patience when I'm not knowing what I'm talking about here. Thank you, my cats, for leaving the keyboard alone for long enough to write this. Thank you, Mom and Dad

/Erwin

Large numbers

Posted by [Yeshiah Mikhol](#) on August 20, 1999 at 10:23:50:

Ok I have a conversion which uses a decimal multiplier 1.44 So too get around dealing with decimals and doublecell stack values I use 144 and divide the answer by 100. works ok on a calculator but in quartus I end up with number like -27845 which fail to yield results.

How do I tell quartus to use larger numbers and how will this affect malacing the stack?

Yeshiah

Re: Large numbers

Posted by [Barry Ekstrand](#) on August 20, 1999 at 18:11:57:

In Reply to: [Large numbers](#) posted by Yeshiah Mikhol on August 20, 1999 at 10:23:50:

Okay, lets see if I have learned anything. I think you need to use the */ operator, which creates a double-cell intermediate value after the multiplication. The stack should behave like this: (n1 n2 n3 -- n4), so usage would look like:

```
n1 144 100 */
```

where n1 is your number that you want to multiply by 1.44. The */ operator will multiply n1 by 144, creating a double cell intermediate value, then divide by 100 and give the result as a single cell value.

If I messed this up, someone correct me!

Barry

> Ok I have a conversion which uses a decimal multiplier 1.44 So too get around

> dealing with decimals and doublecell stack values I use 144 and divide the
> answer by 100. works ok on a calculator but in quartus I end up with number
> like -27845 which fail to yield results.

> How do I tell quartus to use larger numbers and how will this affect malacing
> the stack?

> Yeshiah

Re: Large numbers

Posted by Yeshiah Mikhol on August 21, 1999 at 22:35:27:

In Reply to: [Re: Large numbers](#) posted by Barry Ekstrand on August 20, 1999 at 18:11:57:

> Okay, lets see if I have learned anything. I think you need to use the */
> operator, which creates a double-cell intermediate value after the
> multiplication. The stack should behave like this: (n1 n2 n3 -- n4), so
usage
> would look like:
> n1 144 100 */
> where n1 is your number that you want to multiply by 1.44. The */ operator
> will multiply n1 by 144, creating a double cell intermediate value, then
divide
> by 100 and give the result as a single cell value.
> If I messed this up, someone correct me!
> Barry

Good now I need a similar thing to do straight multiplication without the
division. I need a "*" that also keeps a doubleceel intermediate.

I must do a to get a double cell value which then should be divided with
Modulus.

I need a */MOD function!

Re: Large numbers

Posted by [Neal Bridges](#) on August 22, 1999 at 10:49:20:

In Reply to: [Re: Large numbers](#) posted by Yeshiah Mikhol on August 21, 1999 at 22:35:27:

> Good now I need a similar thing to do straight multiplication without the
> division. I need a "*" that also keeps a doubleceel intermediate.

The Standard provides these functions.

UM* multiples two unsigned singles into an unsigned double. M* does the same
thing for signed values.

> I must do a to get a double cell value which then should be divided with
> Modulus.

> I need a */MOD function!

UM/MOD divides an unsigned double by an unsigned single, returning quotient and

remainder. SM/REM does the same thing for signed values.

Neal

an improvement (help with calendar)

Posted by [Yeshiah Mikhol](#) on August 19, 1999 at 23:58:16:

An improvement on my days2000 would be the ability to bring up the date selector and have the results from a date placed on the stack. how do I bring up the day selector and return a result?

Yeshiah.

do I ask too many questions? atleast Imposting source for others to learn as well. thanks

An improvement (help with calendar)

Posted by [Yeshiah Mikhol](#) on August 20, 1999 at 14:36:11:

In Reply to: [an improvement \(help with calendar\)](#) posted by Yeshiah Mikhol on August 19, 1999 at 23:58:16:

> An improvement on my days2000 would be the ability to bring up the date selector and have the results from a date placed on the stack. how do I bring up the day selector and return a result?

> Yeshiah.

THANKS NEAL. The new program and source is updated on our site. now it is a more "complete" program. click the GO button to bring up the date selector and choose a new target date. also I modified my code so it "remembers" your last choice and brings the calendar back to it. Easier for "What if" scenarios.

It also helped me learn how to "modularize" my code into discreet functions. Thats a tough habit to break from C+ where I could write a code from A to Z with lots of gotos and jumps. Nowonder Forth is smaller and faster. Now C is a little better than basic (and again smaller footprint).

Hope it helps others too.

- [TorahScroll Pilot Downloads](#)

Re: an improvement (help with calendar)

Posted by [Erwin Schomburg](#) on August 20, 1999 at 05:12:37:

In Reply to: [an improvement \(help with calendar\)](#) posted by Yeshiah Mikhol on August 19, 1999 at 23:58:16:

> An improvement on my days2000 would be the ability to bring up the date
> selector and have the results from a date placed on the stack. how do I
bring
> up the day selector and return a result?
> Yeshiah.

> do I ask too many questions? atleast Im posting source for others to learn as
> well. thanks

Try to use "SelectDay", or, if you want to be downward compatible to OS1.x machines, "SelectDayV10" to pop up the date selector and to find values, not on stack but in the day... etc. variables, afterwards. Prototypes in Quartus style:
SelectDay (&title. &year. &day. &month. selectDayBy[>byte] --- Boolean)
SelectDayV10 (&title. &year. &day. &month. --- Boolean)
where &title. is the absolute address of the Null-terminated caption string.
Note that you need to "seed" the variables with valid start dates if you use the V10 version.

May the Forth be with you!

/Erwin

Re: an improvement (help with calendar)

Posted by [Yeshiah Mikhol](#) on August 20, 1999 at 09:58:17:

In Reply to: [Re: an improvement \(help with calendar\)](#) posted by Erwin Schomburg on August 20, 1999 at 05:12:37:

SelectDayV10 (&title. &year. &day. &month. --- Boolean)

another stupid question!!

so how do I use the above. I have seen the layout as such for alot of calls. Do I create 4 strings? and seedd themwith a date? what about the title. Is it the Title for the popup?

Yeshiah

Re: an improvement (help with calendar)

Posted by [Neal Bridges](#) on August 20, 1999 at 11:28:36:

In Reply to: [Re: an improvement \(help with calendar\)](#) posted by Yeshiah Mikhol on August 20, 1999 at 09:58:17:

> SelectDayV10 (&title. &year. &day. &month. --- Boolean)

> another stupid question!!

> so how do I use the above. I have seen the layout as such for alot of calls.

> Do I create 4 strings? and seedd themwith a date? what about the title. Is it

> the Title for the popup?

needs facility-ext

needs zstrings

variable year

variable month

variable day

: init

time&date year ! month ! day ! drop 2drop

;

: title z" Select a Day" ;

: go

title drop >abs

year >abs

day >abs

month >abs

SelectDayV10 drop

year @ . month @ . day @ .

;

Neal

Re: an improvement (help with calendar)

Posted by Erwin on August 20, 1999 at 11:10:57:

In Reply to: [Re: an improvement \(help with calendar\)](#) posted by Yeshiah Mikhol on August 20, 1999 at 09:58:17:

> SelectDayV10 (&title. &year. &day. &month. --- Boolean)

> another stupid question!!

> so how do I use the above. I have seen the layout as such for alot of calls.

> Do I create 4 strings? and seedd themwith a date? what about the title. Is it

> the Title for the popup?

> Yeshiah

Its four variables whose absolute addresses you pass, and yes, for the title its the address of a title you can specify.

May the forth be with you!

/Erwin

Re: an improvement (help with calendar)

Posted by [Yeshiah Mikhol](#) on August 20, 1999 at 12:16:06:

In Reply to: [Re: an improvement \(help with calendar\)](#) posted by Erwin on August 20, 1999 at 11:10:57:

> Its four variables whose absolute addresses you pass, and yes, for the title its the address of a title you can specify.

so whats wrong with this picture?

\ Date

```
: Title ( -- c-addr u ) s" Pick a date" ;
```

```
1999 constant year
```

```
7 constant day
```

```
8 constant month
```

```
Title year day month
```

```
SelectDayV10 .s
```

Re: an improvement (help with calendar)

Posted by Erwin on August 20, 1999 at 12:54:01:

In Reply to: [Re: an improvement \(help with calendar\)](#) posted by Yeshiah Mikhol on August 20, 1999 at 12:16:06:

> > Its four variables whose absolute addresses you pass, and yes, for the title
> its the address of a title you can specify.

>

> so whats wrong with this picture?

> \ Date

```
> : Title ( -- c-addr u ) s" Pick a date" ;
```

```
> 1999 constant year
```

```
> 7 constant day
> 8 constant month

> Title year day month
> SelectDayV10 .s
```

Title is not a Null-terminated string, the others are values put on stack, not addresses where the system call could put its results. Apart from that, the system routines normally expect absolute, 32-bit addresses, or in Quartus terms, double numbers respective 2 cell values.

/Erwin

programs

Posted by [Yeshiah Mikhol](#) on August 19, 1999 at 23:40:56:

well Ive finished 2 exercises in forth programming and have posted them on my website complete with source code (for better or for worse). A simple exercise in Forms, menus, and buttons (LostFound) and the second one (Days2000) on working with strings and fields.

I hope these help others as others have helped me.

NOW a QUERY. Anyone thought of writing a function involving "Internet time"?

```
: Inet>Time (n -- s m hGMT ) ;
: Time>Inet ( s m hGMT d m -- n ) ;
```

Obviously the real fun is correcting ro local time (the user should create an input for local offset from GMT) and the wrap around midnight. I have created such a program using PocketC but havent figured out how to rewrite to forth.

I know of neal's hack but I dont want all my palm times changed. Just would be fun to display in programs.

Yeshiah

- [TorahScroll Pilot Programs](#)

Am I misunderstanding use of quit?

Posted by [Matthew Burke](#) on August 19, 1999 at 18:09:59:

I have the following loop:

```
: go begin ekey nilEvent = if step else exit then again ;
: step fetch process inc ;
```

```
: process case
\ a bunch of cases...
[char] @ of quit endof
noop
endcase ;
```

This is the initial framework for an interpreter with an '@' command for halting the running program. I thought that by executing quit I would get what I want, it would break out of the loop that go set up and put me back into an interactive Forth mode (I know this won't work when I get to the point of putting together a stand-alone version).

The problem is this: I get back to a mode where I can enter in Forth words interactively (although I don't get an 'ok' prompt). However, when I press the application, menu, etc. buttons, I then get an 'ok' and the Palm locks up and needs a reset.

Any thoughts? Oh, I'm not using any forms, etc. just interactive Forth.

Thanks,

Matt

Re: Am I misunderstanding use of quit?

Posted by [Erwin Schomburg](#) on August 20, 1999 at 01:44:09:

In Reply to: [Am I misunderstanding use of quit?](#) posted by Matthew Burke on August 19, 1999 at 18:09:59:

> I have the following loop:

```
> : go begin ekey nilEvent = if step else exit then again ;
```

```
> : step fetch process inc ;
```

```
> : process case
```

```
> \ a bunch of cases...
```

```
> [char] @ of quit endof
```

```
> noop
```

```
> endcase ;
```

> This is the initial framework for an interpreter with an '@' command for halting the running program. I thought that by executing quit I would get what I want, it would break out of the loop that go set up and put me back into an interactive Forth mode (I know this won't work when I get to the point of putting together a stand-alone version).

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> Any thoughts? Oh, I'm not using any forms, etc. just interactive Forth.
> Thanks,
> Matt

QUIT empties the return stack and makes the console the default input device, which means, if I understand this correctly, that you can pass control to the interpreter, but have no means to return to where you came from, as you have already been in interpret state when you execute a definition. You can toggle from compile state to interpret state, but you can't loop a Forth interpreter inside a Forth interpreter.

May the Forth be with you!

/Erwin

Re: Am I misunderstanding use of quit?

Posted by [Matthew Burke](#) on August 20, 1999 at 07:08:23:

In Reply to: [Re: Am I misunderstanding use of quit?](#) posted by Erwin Schomburg on August 20, 1999 at 01:44:09:

Matt wrote:

> > The problem is this: I get back to a mode where I can enter in Forth words
> > interactively (although I don't get an 'ok' prompt). However, when I press
> > the application, menu, etc. buttons, I then get an 'ok' and the Palm locks
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Erwin wrote:

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> which means, if I understand this correctly, that you can pass control to the
> interpreter, but have no means to return to where you came from, as you have
> already been in interpret state when you execute a definition. You can toggle
> from compile state to interpret state, but you can't loop a Forth interpreter
> inside a Forth interpreter.

Well, this is exactly what I want---to clear out the return stack and go back to the interpreter. I am not trying to loop an interpreter inside an interpreter.

What I want to know, however, is why, then, does my Palm freeze up when I attempt to leave Quartus Forth?

Thanks,

Matt

Re: Am I misunderstanding use of quit?

Posted by [Neal Bridges](#) on August 20, 1999 at 11:31:10:

In Reply to: [Re: Am I misunderstanding use of quit?](#) posted by Matthew Burke on August 20, 1999 at 07:08:23:

> Well, this is exactly what I want---to clear out the return stack and go
> back to the interpreter. I am not trying to loop an interpreter inside
> an interpreter.

> What I want to know, however, is why, then, does my Palm freeze up when I
> attempt to leave Quartus Forth?

Use ABORT instead of QUIT for the time being. I'll check and see why QUIT is giving trouble. I suspect you're the only person who has ever used it.

Neal

Re: Am I misunderstanding use of quit?

Posted by [Matthew Burke](#) on August 20, 1999 at 10:51:55:

In Reply to: [Re: Am I misunderstanding use of quit?](#) posted by Matthew Burke on August 20, 1999 at 07:08:23:

Two additional points:

1) I am including safe first off and it doesn't report any problems.

2) when I run the code in the emulator, it doesn't give me any problems.

Matt

Re: Am I misunderstanding use of quit?

Posted by Erwin on August 20, 1999 at 11:29:18:

In Reply to: [Re: Am I misunderstanding use of quit?](#) posted by Matthew Burke on August 20, 1999 at 10:51:55:

> Two additional points:

> 1) I am including safe first off and it doesn't report any
> problems.

> 2) when I run the code in the emulator, it doesn't give me any problems.

> Matt

You call QUIT while QUIT . The original QUIT has cleared the return stack to start from a clean slate, then has interpreted that it is to call for execution of your word. While executing, your QUIT clears the return stack again, then your QUIT exits, then the word that called your QUIT wants to exit, but where to, as the return stack is empty, if I may ask?

/Erwin

Re: Am I misunderstanding use of quit?

Posted by [Matthew Burke](#) on August 20, 1999 at 19:22:10:

In Reply to: [Re: Am I misunderstanding use of quit?](#) posted by Erwin on August 20, 1999 at 11:29:18:

Erwin wrote:

> You call QUIT while QUIT . The original QUIT has cleared the return stack to
> start from a clean slate, then has interpreted that it is to call for
execution
> of your word. While executing, your QUIT clears the return stack again, then
> your QUIT exits, then the word that called your QUIT wants to exit, but where
> to, as the return stack is empty, if I may ask?

Unless I'm mistaken, QUIT never needs to exit, so the fact that the return stack is empty is irrelevant. As the final step in Quartus's startup, the interpreter calls QUIT to start the interactive session. Where would it return to? The situation is no different (IMHO).

Perhaps I am not understanding your point.

Matt

Re: Am I misunderstanding use of quit?

Posted by Erwin on August 21, 1999 at 00:53:12:

In Reply to: [Re: Am I misunderstanding use of quit?](#) posted by Matthew Burke on August 20, 1999 at 19:22:10:

> Erwin wrote:

> > You call QUIT while QUIT . The original QUIT has cleared the return stack to

> > start from a clean slate, then has interpreted that it is to call for
> execution
> > of your word. While executing, your QUIT clears the return stack again, then
> > your QUIT exits, then the word that called your QUIT wants to exit, but
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> > to, as the return stack is empty, if I may ask?

>
> Unless I'm mistaken, QUIT never needs to exit, so the fact that the return
> stack is empty is irrelevant. As the final step in Quartus's startup,
> the interpreter calls QUIT to start the interactive session. Where would
> it return to? The situation is no different (IMHO).

> Perhaps I am not understanding your point.

> Matt

May be I am mistaken, but Quit tries to exit after the display of the OK prompt.
I was looking at how the implementation looks like, not if your setup should
work theoretically, and there even a quit issued in the console trashes the
system after it has processed input.

/Erwin

Re: Am I misunderstanding use of quit?

Posted by [Neal Bridges](#) on August 21, 1999 at 09:54:17:

In Reply to: [Re: Am I misunderstanding use of quit?](#) posted by Erwin on August 21, 1999 at 00:53:12:

> May be I am mistaken, but Quit tries to exit after the display of the OK
prompt.
> I was looking at how the implementation looks like, not if your setup should
> work theoretically, and there even a quit issued in the console trashes the
> system after it has processed input.

QUIT is actually a continuous loop that has no exit.

Neal

Re: Am I misunderstanding use of quit?

Posted by [Neal Bridges](#) on August 20, 1999 at 11:29:11:

In Reply to: [Re: Am I misunderstanding use of quit?](#) posted by Matthew Burke on August 20, 1999 at 10:51:55:

> Two additional points:

> 1) I am including safe first off and it doesn't report any problems.

> 2) when I run the code in the emulator, it doesn't give me any problems.

Are you running *safe* in the emulator as well?

Neal

Re: Am I misunderstanding use of quit?

Posted by [Matthew Burke](#) on August 20, 1999 at 19:06:40:

In Reply to: [Re: Am I misunderstanding use of quit?](#) posted by Neal Bridges on August 20, 1999 at 11:29:11:

> Are you running *safe* in the emulator as well?

Thanks for the tip about abort---in retrospect it seems obvious and it works.

I wasn't clear: I tried quit without safe in both the emulator and on my P7. It works on the emulator but not the P7. I then tried it with safe and got the same results: a crash on the P7, no problem in the emulator.

Thanks for the help,

Matt

Using shared libraries e.g. MathLib

Posted by Chap Flack on August 19, 1999 at 16:02:56:

Hi,

What's involved in accessing a shared library from Quartus Forth, like for example MathLib ? How difficult would it be to create simple words for the functions in that library?

Next question (a different question, for further down the road), would it make any sense to release a version of Quartus Forth that is lightened of its own independent float support, for use on PalmOS >=2.0 devices with MathLib installed?

Just wondering, I haven't had time to try playing with QF yet. It looks very good!

-Chap

- [MathLib](#)

Re: Using shared libraries e.g. MathLib & Others

Posted by [Dave Bennett](#) on August 19, 1999 at 16:33:42:

In Reply to: [Using shared libraries e.g. MathLib](#) posted by Chap Flack on August 19, 1999 at 16:02:56:

> Hi,

> What's involved in accessing a shared library from Quartus Forth, like for
> example MathLib ? How difficult would
> it be to create simple words for the functions in that library?

> -Chap

I'd like to extend this question to include Palm Print. Any samples of how to access these from Q4th?

--

Dave

field>string

Posted by [Yeshiah Mikhol](#) on August 19, 1999 at 15:57:12:

still getting problems from field>string. Dould someone help me on its stack requirements.

The fields.txt says : Field>string (c-addr fieldID -- len)
and that is the pattern I am following below (or so I think).
But all I get as output are 1 and 0

```
: valuesofis ( -- c-addr u ) s" " ;

: Paste-Data ( -- )
valuesofis drop ( c-addr u -- c-addr )
InputField
Field>string ( c-addr FieldID -- u )
drop valuesofis ( u -- c-addr u )
string>gematria ( c-addr u -- n )
valuesofis drop ( n c-addr u -- n c-addr )
InputField
Field>string ( n c-addr FieldID -- n u )
drop valuesofis ( n u -- n c-addr u )
string>sofit ( n c-addr u -- n n )
0 \ make decimal
SofisField
d>Field ( n 0 FieldID -- )
0 \ make decimal
ValueField
d>Field ( n 0 FieldID -- )

;
```

Re: field>string

Posted by [Yeshiah Mikhol](#) on August 19, 1999 at 17:50:01:

In Reply to: [field>string](#) posted by Yeshiah Mikhol on August 19, 1999 at 15:57:12:

> still getting problems from field>string. Dould someone help me on its stack
> requirements.

> The fields.txt says : Field>string (c-addr fieldID -- len)
> and that is the pattern I am following below (or so I think).
> But all I get as output are 1 and 0

OK I found the problem thanks to Erwin and his tip. I need to add a couple drops and 2 swaps to keep the outputs "saved" on the stack. also, The output

string len was NOT added to the original string location. I found I had to swap it to save the len with the C-addr before I could use it.

thanks for your tips and email guys.
Yeshiah

Please help me understand this

Posted by [Dave Bennett](#) on August 19, 1999 at 14:30:36:

I working hard to learn 4th, but this is confusing me. I've written the sample application in the Q4th/RsrcEdit tutorial and have gotten it to compile into a standalone program. My biggest problem with 4th so far is getting the "stack" mentality firmly entrenched into my mind. I'm getting lost trying to follow this portion of the helloworld-b program that handles the events. Can someone give me a line by line explanation of the logic & execution flow? Thanks.

```
: do-event ( ekey -- )
menuEvent = if
event >abs itemid
AboutMenuItem = if
AmoutBox FrmAlert drop
then
then ;

--
```

Dave

Re: Please help me understand this

Posted by [Erwin Schomburg](#) on August 19, 1999 at 15:41:27:

In Reply to: [Please help me understand this](#) posted by Dave Bennett on August 19, 1999 at 14:30:36:

```
> I working hard to learn 4th, but this is confusing me. I've written the sample
> application in the Q4th/RsrcEdit tutorial and have gotten it to compile into a
> standalone program. My biggest problem with 4th so far is getting the "stack"
> mentality firmly entrenched into my mind. I'm getting lost trying to follow
this
> portion of the helloworld-b program that handles the events. Can someone give
me
> a line by line explanation of the logic & execution flow? Thanks.
```

```
> : do-event ( ekey -- )
( start a definition and name it, append overall stack diagram as comment )
> menuEvent = if
```

```
( check if the value found on stack put there by the caller to this word )
( equals the named constant menuEvent, )
( stack flow is value_from_caller, menuEvent, both values are "eaten" by the )
( comparison "=", which in turn leaves a flag on stack, which is then "eaten" )
( by "if" to determine if the if clause is to be executed or execution resumes )
( after the "then" )
> event >abs itemid
( put the address of the variable "event" on stack and convert it from )
( a 16-bit relative address to a 32-bit absolute address, then call the )
( word "itemid" which "eats" the absolute address from stack and puts )
( the itemid of the menuEvent on stack in turn )
> AboutMenuItem = if
( compares the value on stack if it corresponds to the named constant )
( "AboutMenuItem" )
> AmoutBox FrmAlert drop
( if the previous comparison was true, pop up the alert box "AmoutBox", )
( on closure this box returns the buttonid of the button you tapped to )
( close it, you don't want to know, so you drop this value )
> then
( this is where execution resumes when the value on stack was zero before )
( an "if" was encountered, if it was nonzero the words following the if )
( were executed up to here )
> then ;
( ditto for the "then", the semicolon concludes a word definition started by )
( a colon )
> --
> Dave
/Erwin
```

Re: Please help me understand this

Posted by [Matthew Blair](#) on August 19, 1999 at 15:22:28:

In Reply to: [Please help me understand this](#) posted by Dave Bennett on August 19, 1999 at 14:30:36:

Hi Dave,

Let me see if I can help you out.

> portion of the helloworld-b program that handles the events. Can someone give me

> a line by line explanation of the logic & execution flow? Thanks.

: do-event (ekey --)

You enter the do-event word with an event on the stack

```
menuEvent = if
```

*Put the menuEvent constant (see Events.txt) on the stack.
Test for equality (i.e., is this event a MenuEvent?)*

```
event >abs itemid
```

Take the most recent event and convert from a 16-bit Quartus address (dataspace?) to an 32-bit Palm OS address. Get the ID of the object which generated the event (see Events.txt) and put it on the stack.

```
AboutMenuItem = if
```

Put the ID of the "About" menu item on the stack. Check for equality with the object ID just placed on the stack.

```
AmoutBox FrmAlert drop
```

Put the Form ID of AmoutBox on the stack. Call the Palm OS API function FrmAlert. The button number is returned on the stack by the Palm OS. Drop the number since we don't care.

```
then  
then ;
```

Hope this helps,

Matthew

Problem with event handling

Posted by [Csabo](#) on August 19, 1999 at 09:14:23:

Hi everyone,

In the past weeks I wrote a program which now is completed. It works fine if I run it from inside Quartus, but when compiled it doesn't respond to any events (including the on/off button). The problem is with my event handler. I use a modified version, which I copied from an old post (written by Neal):

```
needs Events  
needs toolkit
```

```
10. 2constant timeout.
```

```
event >abs 2constant &event.
```

```
: hardkey? ( -- flag )  
event @ keyDownEvent =  
&event. itemid  
(hex) 0204 (hex) 0208 within  
and ;
```

```
: hekey ( -- event )
timeout. &event. EvtGetEvent
hardkey? 0= if HandleEvent then
event @ ;
```

As I said, this works fine, and I can handle all events including when the hard buttons are pressed. But when I compile and run the program, it stops at event #24 (frmOpenEvent) and doesn't return any events afterwards. It looks like that one is not handled for some reason. If I modify my event handler to call the regular "ekey" instead of the above "hekey" it compiles and runs fine (except of course handling the hard buttons). Does anyone know what's wrong here?

Thanks in advance,

Csabo

Re: Problem with event handling

Posted by [Erwin Schomburg](#) on August 19, 1999 at 10:57:55:

In Reply to: [Problem with event handling](#) posted by Csabo on August 19, 1999 at 09:14:23:

> Hi everyone,

> In the past weeks I wrote a program which now is completed. It works fine if I
> run it from inside Quartus, but when compiled it doesn't respond to any events
> (including the on/off button). The problem is with my event handler. I use a
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```
>
> needs Events
> needs toolkit
> 10. 2constant timeout.
> event >abs 2constant &event.
> : hardkey? ( -- flag )
> event @ keyDownEvent =
> &event. itemid
> (hex) 0204 (hex) 0208 within
> and ;
```

```
> : hekey ( -- event )
> timeout. &event. EvtGetEvent
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> event @ ;
>
```

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> one is not handled for some reason. If I modify my event handler to call the
> regular "ekey" instead of the above "hekey" it compiles and runs fine (except
> of course handling the hard buttons). Does anyone know what's wrong here?

> Thanks in advance,

> Csabo

The point of failure is probably that hekey directly passes to HandleEvent all things not hardkey presses, that construct is only fit to handle nothing but the hard keys and, possibly, a callback menu handler (which you are **not** encouraged to use). If you want to intercept the hard keys **and** to handle some other events in your app's event loop you should consider the construct I used in Quintominoes:

```
variable HARD
: evt-loop
0 hard !
begin begin
timeout. &event. EvtGetEvent
event @ ?dup until
\ do whatever event handling you need to do
\ and set HARD to non-zero if you have handled a hard key
hard @ 0= if HandleEvent then
0 HARD !
again ;
```

May the Forth be with you!

/Erwin

- [Quintominoes](#)

Re: Problem with event handling

Posted by [Csabo](#) on August 19, 1999 at 13:48:15:

In Reply to: [Re: Problem with event handling](#) posted by Erwin Schomburg on August 19, 1999 at 10:57:55:

```
> variable HARD
> : evt-loop
> 0 hard !
> begin begin
> timeout. &event. EvtGetEvent
> event @ ?dup until
> \ do whatever event handling you need to do
> \ and set HARD to non-zero if you have handled a hard key
> hard @ 0= if HandleEvent then
```

```
> 0 HARD !  
> again ;
```

Hi Erwin,

Just finished typing it all in. It works just as well as the original if I run the program from Quartus, but the compiled version is still stuck on event 24. I have this line in the code before I do anything with the event

```
dup 140 140 at .
```

When I run it from Quartus, I see all the proper events coming up (Penup, pendown etc.) But the compiled one displays "24" and that's it. Is it something with the form? It a full screen form, ID 1000 (I declared a constant "frmGame" for it) with two labels on it. This is the beginning of my code:

```
: go  
init  
frmGame ShowForm
```

etc...

It shows up properly, from both Quartus and the compiled version. Any further ideas? I appreciate your help though. Thanks.

Csabo

Re: Problem with event handling

Posted by Erwin on August 20, 1999 at 01:26:06:

In Reply to: [Re: Problem with event handling](#) posted by Csabo on August 19, 1999 at 13:48:15:

```
> > variable HARD  
> > : evt-loop  
> > 0 hard !  
> > begin begin  
> > timeout. &event. EvtGetEvent  
> > event @ ?dup until  
> > \ do whatever event handling you need to do  
> > \ and set HARD to non-zero if you have handled a hard key  
> > hard @ 0= if HandleEvent then  
> > 0 HARD !  
> > again ;
```

> Hi Erwin,

> Just finished typing it all in. It works just as well as the original if I run
> the program from Quartus, but the compiled version is still stuck on event 24.
> I have this line in the code before I do anything with the event

```
> dup 140 140 at .
```

```
> When I run it from Quartus, I see all the proper events coming up (Penup,  
> pendown etc.) But the compiled one displays "24" and that's it. Is it  
something  
> with the form? It a full screen form, ID 1000 (I declared a constant "frmGame"  
> for it) with two labels on it. This is the beginning of my code:  
  
> : go  
> init  
> frmGame ShowForm  
>  
> etc...
```

> It shows up properly, from both Quartus and the compiled version. Any further
> ideas? I appreciate your help though. Thanks.

> Csabo

And now, as Neal likes to state, a more complete code snippet would help to help getting along with remote diagnosis attempts. Possible areas: You have not copied the forms resource into your stand alone...etc.

/Erwin

Re: Problem with event handling

Posted by [Csabo](#) on August 20, 1999 at 09:21:58:

In Reply to: [Re: Problem with event handling](#) posted by Erwin on August 20, 1999 at 01:26:06:

```
> And now, as Neal likes to state, a more complete code snippet would help to  
help  
> getting along with remote diagnosis attempts. Possible areas: You have not  
> copied the forms resource into your stand alone...etc.  
  
> /Erwin
```

All right. My project is actually an implementation of the Tetris game. Even though it's not finished, it's fully functional, so everyone is welcome to download it, laugh at my code or play a couple of round. It just doesn't compile... :-(I put all files in one zip file here: (just in case the link won't work again)

<http://www.actepro.com/palm/tetris.zip>

Csabo

- <http://www.actepro.com/palm/tetris.zip>

Re: Problem with event handling

Posted by [Neal Bridges](#) on August 19, 1999 at 09:39:40:

In Reply to: [Problem with event handling](#) posted by Csabo on August 19, 1999 at 09:14:23:

> In the past weeks I wrote a program which now is completed. It works fine if I
> run it from inside Quartus, but when compiled it doesn't respond to any events
> (including the on/off button). The problem is with my event handler. I use a
> modified version, which I copied from an old post (written by Neal):

Are you opening a form when you start your app? If you don't have a special form, put 'MainForm' at the top of your main routine.

Neal

Re: Problem with event handling

Posted by [Csabo](#) on August 19, 1999 at 12:03:46:

In Reply to: [Re: Problem with event handling](#) posted by Neal Bridges on August 19, 1999 at 09:39:40:

> Are you opening a form when you start your app? If you don't have a special
> form, put 'MainForm' at the top of your main routine.

Yes, I have one form in the resource file and I show it at the beginning of the program. When I run the compiled version, it shows up fine, too. What else could it be?

Re: Problem with event handling

Posted by Erwin on August 19, 1999 at 13:29:28:

In Reply to: [Re: Problem with event handling](#) posted by Csabo on August 19, 1999 at 12:03:46:

> > Are you opening a form when you start your app? If you don't have a special
> > form, put 'MainForm' at the top of your main routine.

> Yes, I have one form in the resource file and I show it at the beginning of
the
> program. When I run the compiled version, it shows up fine, too. What else
> could it be?

Anything wrong with my posted answer? Or with the refresh of your forum screen?
/Erwin

Re: Problem with event handling

Posted by [Csabo](#) on August 19, 1999 at 13:52:14:

In Reply to: [Re: Problem with event handling](#) posted by Erwin on August 19, 1999 at 13:29:28:

> Anything wrong with my posted answer? Or with the refresh of your forum screen?
> /Erwin

No, Erwin. To tell you the truth I'm at work now and quite busy... (Don't tell my boss) it was easy to reply to Neal's suggestion, but I only had time just now to try your code. Thanks.

Csabo

HELIO, another potential Palm contender

Posted by [Erwin Schomburg](#) on August 19, 1999 at 05:35:10:

Hi, another potential Palm contender, this time it does not look like there is reason to inhibit it for infringements. Looks like a worthy candidate to consider a Quartus version for it.

May the Forth be with you!

/Erwin

- [Helio](#)

Re: HELIO, another potential Palm contender

Posted by [Lou Solomon](#) on August 19, 1999 at 12:29:57:

In Reply to: [HELIO, another potential Palm contender](#) posted by Erwin Schomburg on August 19, 1999 at 05:35:10:

Whew, looks like it could be a contender...

Likes:

- * like the idea of 75MHZ
- * high speed serial port (though I couldn't find what that means)

Dislikes:

* \$199.00 they are not going to be the palm killer at that price. Too close to the actual price of the PIIIe.

Just curious: What's with the 4mb of memory? I just sent away for the 8MB upgrade (TRG) for my Palm Professional as I love the Avant-Go channels, and, as I have a minstrel modem, I love accessing the web, using it for e-mail, etc. From my understanding, and looking at the do-it-your-self sites, the incremental cost of adding this memory chips is cheap (\$20 for 8MB)... I think they should have 16MB on the device, right away.

Secondly: they should purchase Quartus from Neal (making him a very rich man), and give it away. I've never understood why hardware companies do not do everything in their power to get new developers, make them happy, etc, in other words give away development tools. Palm Co. got luck in that their hardware got a lot of people enthusiastic enough to create development environments (Gnu C, quartus, etc.) that were either free or very inexpensive. I doubt the 3rd party products would be as numerous, or the palm be as successful if every developer had to shell out \$3-400 or so for the metroworks compiler.

Lou

Re: HELIO, another potential Palm contender

Posted by [Carl Jacobsen](#) on August 19, 1999 at 11:29:02:

In Reply to: [HELIO, another potential Palm contender](#) posted by Erwin Schomburg on August 19, 1999 at 05:35:10:

> Hi, another potential Palm contender, this time it does not look like there is
> reason to inhibit it for infringements. Looks like a worthy candidate to
> consider a Quartus version for it.

Hmm, the screen and the apps sound like an attempt to parallel the Palm layout, but the CPU is a, "a high performance 75 MHz RISC processor," which sounds very unlikely to be MC68000 (or MC68328EZ) compatible, and since, if I recall correctly, Quartus is hand coded in assembly language, it sounds like pretty much rewriting from the ground up in order to "port"...

-- Carl

Re: HELIO, another potential Palm contender

Posted by Erwin on August 19, 1999 at 11:50:11:

In Reply to: [Re: HELIO, another potential Palm contender](#) posted by Carl Jacobsen on August 19, 1999 at 11:29:02:

```
> > Hi, another potential Palm contender, this time it does not look like there
is
> > reason to inhibit it for infringements. Looks like a worthy candidate to
> > consider a Quartus version for it.

> Hmm, the screen and the apps sound like an attempt to parallel the Palm
> layout, but the CPU is a, "a high performance 75 MHz RISC processor,"
> which sounds very unlikely to be MC68000 (or MC68328EZ) compatible, and
> since, if I recall correctly, Quartus is hand coded in assembly language,
> it sounds like pretty much rewriting from the ground up in order to "port"...

> -- Carl
```

If you have written one Forth Kernel you can write another one as well. With a power like that it does not even need to be optimal or optimizing in the first step, given that one is not familiar with the processor's instruction set initially. I wonder what Neal has to say here?

/Erwin

getting values less than zero

Posted by [E. Ross Helton](#) on August 18, 1999 at 23:18:18:

Hi Neal;

Below I have some code that I want to use to convert pounds to kilos and kilos to pounds. The problem is that is I choose for example '5 lbs' and then return it give me zero kilos. I tried using the adding needs float, but still it doesn't give the values. What have I done incorrectly?

```
+++++
\ lbs
needs float
needs float-ext

: P>K ( lbs -- kil ) 1000 2204 */ ;
: K>P ( kil -- lbs ) 1000 453 */ ;
: Lbs ( Pounds -- ) ." is " P>K . ." kilograms" ;
: Kilo ( Kilos -- ) ." is " K>P . ." lbs" ;

+++++
```

Thanks for the help

Make it a good day!

Ross

Re: getting values less than zero

Posted by [Erwin Schomburg](#) on August 19, 1999 at 00:22:20:

In Reply to: [getting values less than zero](#) posted by E. Ross Helton on August 18, 1999 at 23:18:18:

> Hi Neal;

> Below I have some code that I want to use to convert pounds to kilos and kilos
> to pounds. The problem is that is I choose for example '5 lbs' and then
return

> it give me zero kilos. I tried using the adding needs float, but still it
> doesn't give the values. What have I done incorrectly?

> ++++++

> \ lbs

> needs float

> needs float-ext

> : P>K (lbs -- kil) 1000 2204 */ ;

> : K>P (kil -- lbs) 1000 453 */ ;

> : Lbs (Pounds --) ." is " P>K . ." kilograms" ;

> : Kilo (Kilos --) ." is " K>P . ." lbs" ;

> ++++++

> Thanks for the help

> Make it a good day!

> Ross

You have to distinctly tell it that a number you use is a float and you need to use the float-specific operator words.

May the Forth be with you!

/Erwin

Re: getting values less than zero

Posted by [Matthew Blair](#) on August 19, 1999 at 08:50:24:

In Reply to: [Re: getting values less than zero](#) posted by Erwin Schomburg on August 19, 1999 at 00:22:20:

> > Hi Neal;

> > Below I have some code that I want to use to convert pounds to kilos and kilos

> > to pounds. The problem is that is I choose for example '5 lbs' and then
> > return

> > it give me zero kilos. I tried using the adding needs float, but still it
> > doesn't give the values. What have I done incorrectly?

> > ++++++

> > \ lbs

> > needs float

> > needs float-ext

> > : P>K (lbs -- kil) 1000 2204 */ ;

> > : K>P (kil -- lbs) 1000 453 */ ;

> > : Lbs (Pounds --) ." is " P>K . ." kilograms" ;

> > : Kilo (Kilos --) ." is " K>P . ." lbs" ;

> > ++++++

> > Thanks for the help

> > Make it a good day!

> > Ross

> You have to distinctly tell it that a number you use is a float and you need
to

> use the float-specific operator words.

> May the Forth be with you!

> /Erwin

But shouldn't the above code, when given 5 lbs, return 2? Looking at the ANS Forth Std., */ should return the quotient of (5*1000)/2204, which is 2. Unless, of course, I'm confusing the terms, which is entirely possible :^)

- Matthew

Re: getting values less than zero

Posted by [E. Ross Helton](#) on August 19, 1999 at 09:46:58:

In Reply to: [Re: getting values less than zero](#) posted by Matthew Blair on August 19, 1999 at 08:50:24:

Hi Matt;

>
> But shouldn't the above code, when given 5 lbs, return 2? Looking
> at the ANS Forth Std., */ should return the quotient of (5*1000)/2204,
> which is 2. Unless, of course, I'm confusing the terms, which is
> entirely possible :^)

> - Matthew

You are correct it does return that value as you said. I mistated what I wanted to say. What I should have said was that if you enter less than 4 or lbs it returns an incorrect entry for Kilos and if 2 is entered it returns zero.

Sorry for the misinformation which I printed before.

Make it a good day!

Ross

negative numbers

Posted by [Yeshiah Mikhol](#) on August 18, 1999 at 15:40:03:

ok almost finished my first complete app. A simple countdown display to a specific date. problem is that is I set a past date. the resulting number crashes.

OK so for now I use ABS to remove the "-". But I still would like to have a conditional which first tests the number. If negative then ENABLE a label in the form. Else DISABLE a "-" Label on the form. THEN ABS the number.

All my work is d. -> field and field > d. I found out to convert my input and output number to d. I simply add a 0 to the stack between these. that was easy.

Re: negative numbers

Posted by [Jim Deakin](#) on August 19, 1999 at 04:18:42:

In Reply to: [negative numbers](#) posted by Yeshiah Mikhol on August 18, 1999 at 15:40:03:

Just a note, which may or may not help. You said:

```
> All my work is d. -> field and field > d. I found out to convert my input
and
> output number to d. I simply add a 0 to the stack between these. that was
easy.
```

That's fine for +ve or unsigned numbers. You should use s>d for numbers to cover all cases though, since what you're really wanting to do is extend the sign bit through the high cell. s>d will work with +ve or -ve numbers.

Re: negative numbers

Posted by [Yeshiah Mikhol](#) on August 18, 1999 at 17:07:00:

In Reply to: [negative numbers](#) posted by Yeshiah Mikhol on August 18, 1999 at 15:40:03:

```
> ok almost finished my first complete app. A simple countdown display to a
specific date. problem is that is I set a past date. the resulting number
crashes.
```

```
> OK so for now I use ABS to remove the "-". But I still would like to have a
conditional which first tests the numer. If negative then ENABLE a label in the
form. Else DISABLE a "-" Label on the form. THEN ABS the number.
```

```
> All my work is d. -> field and field > d. I found out to convert my input
and output number to d. I simply add a 0 to the stack between these. that was
easy.
```

Here's the code.

My problem is down at the "Nip Nip Nip"

```
\ Days2 99.8.17
```

```
needs calendar
needs resources
needs Events
needs facility-ext
needs Fields
```

```
(ID) cd_7 (ID) rsrc use-resources
```

```

1000 constant CountdownForm
2100 constant DaysTotalField
2200 constant WeeksField
2300 constant DaysField
3400 constant DateField
3500 constant OkButton
3401 constant DayField \ target
3402 constant MonthField \ target
3403 constant YearField \ target

CREATE fd-buf 20 CHARS ALLOT

: field>d ( fieldID -- d. )
>R fd-buf DUP R> Field>string
0. 2SWAP >NUMBER 2DROP ;

: d>field ( d. fieldID -- )
>R <# #S #> R> string>Field ;

: show-panel ( -- )
CountdownForm ShowForm ;

: PasteData ( -- d m y )
1 \ target day
0 \ make decimal
DayField
d>field drop \ drop rtn 1
1 \ target month
0 \ make decimal
MonthField
d>field drop \ drop rtn 1
2000 \ target year
0 \ make decimal
YearField
d>field drop \ drop rtn 1
;

: Calculate ( -- )
\ Get Target date
DayField
field>d drop \ drop rtn 1
MonthField
field>d drop \ drop rtn 1
YearField
field>d drop \ drop rtn 1

dmy>date drop \ convert
TIME&DATE
\ Current date s m h d m y

dmy>date drop
Nip Nip Nip \ drop s m h
- \ HERE WHERE THE OUTPUT IS FINISHED
\ and is negative if past

```

```
abs \ Removes the negative "-"
DUP 0 \ make decimal
DaysTotalField
d>field drop \ drop rtn 1
7 /Mod ( num -- remainder result )
0 \ make decimal
WeeksField
d>field drop \ drop rtn 1
0 \ make decimal
DaysField
d>field drop \ drop rtn 1
;

: do-event ( ekey -- )
ctlSelectEvent = if
event >abs itemid
OkButton = if
Calculate
then then ;

\ Main entry point:
: go
show-panel
PasteData
Calculate
begin
do-event
again ;
```

Re: negative numbers

Posted by [Erwin Schomburg](#) on August 18, 1999 at 16:17:42:

In Reply to: [negative numbers](#) posted by Yeshiah Mikhol on August 18, 1999 at 15:40:03:

> ok almost finished my first complete app. A simple countdown display to a
> specific date. problem is that is I set a past date. the resulting number
> crashes.

> OK so for now I use ABS to remove the "-". But I still would like to have a
> conditional which first tests the number. If negative then ENABLE a label in
> the
> form. Else DISABLE a "-" Label on the form. THEN ABS the number.

> All my work is d. -> field and field > d. I found out to convert my input
> and
> output number to d. I simply add a 0 to the stack between these. that was
> easy.

If you work with GetTimSeconds this gives you the double width unsigned number

of seconds elapsed till a startdate (1904?). If you then work relative from now you should have a reasonable range of signed double figures to express half a lifetime past or present.

/Erwin

lists

Posted by [Alex Alava](#) on August 18, 1999 at 12:44:49:

Help. I am trying to understand how to implement lists using the list resources. The way I understand it is that I have to pass a list of pointers for the resource to work with. I worked on my list of strings as follows:

needs core-ext

\used for laying out a string

hex

: put\$ (size adr--size adr+size)

\ 5E word 1+

\ over here c@ cmove over + ;

\ over here c@ move over + ;

5E word dup 1+ swap c@

2 pick swap

\ size adr cadr+1 adr u

move \ size adr

over + ; \ size adr+size

decimal

\ title

12 CONSTANT TITLE-LGHT

CREATE TITLES

15 TITLE-LGHT * DUP ALLOT

TITLES SWAP ERASE

TITLE-LGHT TITLES

(1) PUT\$ Andrew^

(2) PUT\$ Annette^

(3) PUT\$ Gary^

(4) PUT\$ Jeff^

(5) PUT\$ Jimmy^

(6) PUT\$ John^

(7) PUT\$ Lisa^

(8) PUT\$ Nick^

(9) PUT\$ Tina ^

(10) PUT\$ Tom^

2DROP

: @TITLE (N---adr)

1- TITLE-LGHT * TITLES + ;

```
: mytype ( adr u --)
0 do dup i + c@ dup 31 >
if emit else drop leave then
loop drop ;

: TITLE ( N---)
@TITLE TITLE-LGHT myTYPE ;
```

With the above, I am able to access a string address by

```
n @title
```

and print it with

```
n title
```

I intended to pass this addresses to the resource. What am I supposed to do?

I also wanted to make this into a simple database by creating another string structure list with the addresses and phone numbers.

I wanted to be able to pick a name from a scrolling list and then to show the details of the name. I am lost.

Feel free to use the above code if anyone can use it.

Alex

Another newbie project...any assistance appreciated! :-)

Posted by [Kent E. Willyard](#) on August 17, 1999 at 23:19:31:



Hello, all. First off, I want to thank Neal for providing so many terrific resources for Forth beginners like myself. It's really a tremendous help.

Like several other folks here, I am basically starting from ground zero in terms of programming skill. I was a CS major in college (pre-C/C++, I'm afraid), and once dabbled in BASIC, Pascal, COBOL, PL/1, and IBM S/370 assembly. However, I haven't written a line of code since 1987. I'm as rusty as they come. ;-)

To get started with Forth, I've chosen a very simply project: a calculator for target heart rate. I've already done this using cbasPad (in only a few minutes), so the Forth version is purely a programming exercise.

Basically, the program will consist of a single form that lets the user input a person's age and resting heart rate. They can then click a Calculate button, and the program will calculate the maximal heart rate [220-age], threshold of

training [resting HR + ((max HR - resting HR) * .5)], and upper limit [resting HR + ((max HR - resting HR) * .85)]. These three values will each be displayed in separate fields. I would also like to have an option to perform the calculations without using the resting heart rate, as follows: maximal HR [220-age]; threshold of training [maximal HR * .7]; upper limit [maximal HR * .85]. The way I envision this working is that the user would check a box labelled "Simple", and the input field for resting HR would actually disappear from the form. Is this possible? I haven't the faintest idea how I would code this at this point. Essentially, it's two programs in one. If the "Simple" box is checked, the calculations are performed one way; if it's unchecked, they're performed another way.

If my description is too confusing, I've posted a screenshot of the form at: <http://kwillyard.home.mindspring.com/hratescr.gif>

I would also like to use the string2anyField function from PhoneDecode in order to write my output to noneditable fields. I'm using Carl Jacobson's multiplication example from back in June to help me learn how to code the inputs, outputs, and basic math functions. It's a good starting point, but I have a ways to go yet, particularly where the math and data manipulation is concerned. This is a wee bit different from BASIC! ;-)

Anyway, if anyone has any comments, advice, or suggestions that might help me along, I'd be very appreciative. As I get more into it, I'm sure I'll have some more specific questions at a later time.

Thanks!

Kent

- [Screenshot of Heart Rate](#)

Re: Another newbie project...any assistance appreciated! :-)

Posted by [Neal Bridges](#) on August 17, 1999 at 23:32:20:

In Reply to: [Another newbie project...any assistance appreciated! :-\)](#) posted by Kent E. Willyard on August 17, 1999 at 23:19:31:

> Hello, all. First off, I want to thank Neal for providing so many terrific
> resources for Forth beginners like myself. It's really a tremendous help.

Thanks!

> Basically, the program will consist of a single form that lets the user input
> a
> person's age and resting heart rate. They can then click a Calculate button,
> and the program will calculate the maximal heart rate [220-age], threshold of

> training [resting HR + ((max HR - resting HR) * .5)], and upper limit [resting
> HR + ((max HR - resting HR) * .85)]. These three values will each be displayed
> in separate fields. I would also like to have an option to perform the
> calculations without using the resting heart rate, as follows: maximal HR
[220-
> age]; threshold of training [maximal HR * .7]; upper limit [maximal HR * .85].

Will integers suffice, or do you need fractional beats?

> The way I envision this working is that the user would check a box
> labelled "Simple", and the input field for resting HR would actually disappear
> from the form. Is this possible? I haven't the faintest idea how I would code
> this at this point. Essentially, it's two programs in one. If the "Simple" box
> is checked, the calculations are performed one way; if it's unchecked, they're
> performed another way.

I'd do it by making a second form without the 'resting HR' field, and switch to
it as required.

> If my description is too confusing, I've posted a screenshot of the form at:
> <http://kwillyard.home.mindspring.com/hratescr.gif>

> I would also like to use the string2anyField function from PhoneDecode in
order
> to write my output to noneditable fields. I'm using Carl Jacobson's
> multiplication example from back in June to help me learn how to code the
> inputs, outputs, and basic math functions. It's a good starting point, but I
> have a ways to go yet, particularly where the math and data manipulation is
> concerned. This is a wee bit different from BASIC! ;-)

Not so different as you'd think at first glance. If you hit a speed bump,
describe it here and I'll code you over it, or help point the way.

Neal

Re: Another newbie project...any assistance appreciated! :-)

Posted by [Kent E. Willyard](#) on August 17, 1999 at 23:40:12:

In Reply to: [Re: Another newbie project...any assistance appreciated! :-\)](#) posted
by Neal Bridges on August 17, 1999 at 23:32:20:

Wow! Such a quick response! :-)

> Will integers suffice, or do you need fractional beats?

Integers are fine.

> I'd do it by making a second form without the 'resting HR' field, and switch
to

> it as required.

That makes sense. Thanks!

> Not so different as you'd think at first glance. If you hit a speed bump,
> describe it here and I'll code you over it, or help point the way.

Oh, I'll be back...you can count on that! ;-)

Kent

Re: Another newbie project...any assistance appreciated! :-)

Posted by [Neal Bridges](#) on August 17, 1999 at 23:56:11:

In Reply to: [Re: Another newbie project...any assistance appreciated! :-\)](#) posted by Kent E. Willyard on August 17, 1999 at 23:40:12:

> Wow! Such a quick response! :-)

> > Will integers suffice, or do you need fractional beats?

> Integers are fine.

Here's a small burst of code in that general direction:

```
variable age
variable maxhr
variable resting
0 age !
0 maxhr !
0 resting !

: maximal ( -- rate ) age @ 220 swap - ;
: diffhr ( -- diff ) maxhr @ resting @ - ;
: threshold ( -- threshold ) diffhr 2/ resting @ + ;
: upper ( -- upper ) diffhr 85 100 */ resting @ + ;
```

Note that */ is used to scale integers without loss of precision. Results are rounded toward zero. This can be fine-tuned to round as required.

Neal

Re: Another newbie project...any assistance appreciated! :-)

Posted by [E.](#) on August 30, 1999 at 01:10:59:

In Reply to: [Re: Another newbie project...any assistance appreciated! :-\)](#) posted by Neal Bridges on August 17, 1999 at 23:56:11:

Stupid question.

```
> : maximal ( -- rate ) age @ 220 swap - ;
```

Why not

```
: maximal ( -- rate ) 220 age @ - ;
```

?

-E (being naive and ignorant, as per spec)

Re: Another newbie project...any assistance appreciated! :-)

Posted by [Neal Bridges](#) on August 30, 1999 at 08:36:24:

In Reply to: [Re: Another newbie project...any assistance appreciated! :-\)](#) posted by E. on August 30, 1999 at 01:10:59:

> Stupid question.

>

```
> > : maximal ( -- rate ) age @ 220 swap - ;
```

>

> Why not

>

```
> : maximal ( -- rate ) 220 age @ - ;
```

>

> ?

Quite so. Shorter code that works identically; good show. As a finishing touch, I'd ensure the rate never goes out of bounds (0..220):

```
: maximal ( -- rate ) 220 age @ - 0 max 220 min ;
```

Neal

Re: Another newbie project...any assistance appreciated! :-)

Posted by [E.](#) on August 30, 1999 at 17:51:53:

In Reply to: [Re: Another newbie project...any assistance appreciated! :-\)](#) posted by Neal Bridges on August 30, 1999 at 08:36:24:

> > : maximal (-- rate) 220 age @ - ;

> Quite so. Shorter code that works identically; good show.

Heh. It's not that I was trying for an optimization, or something like that, it's just that I had seen similar constructs in other programs, and was wondering if there was a reason people were doing the fetch first. Apparently, it's just habit? I can certainly understand that.

> : maximal (-- rate) 220 age @ - 0 max 220 min ;

That actually helps with a problem I was working on. Thanks. :)

-E

get current date

Posted by [Yeshiah Mikhol](#) on August 17, 1999 at 11:30:47:

How do I get the current date similar to the VB NOW() function.

I need a way to get the result of current-day current-month current-year so I can pipe it into dmy>date.

I am working on date differentials but want to current date loaded when the program runs.

Yeshiah

Re: get current date

Posted by [Carl Jacobsen](#) on August 17, 1999 at 13:04:25:

In Reply to: [get current date](#) posted by Yeshiah Mikhol on August 17, 1999 at 11:30:47:

```
> How do I get the current date similar to the VB NOW() function.
> I need a way to get the result of current-day current-month current-year so I
> can pipe it into dmy>date.
>
> I am working on date differentials but want to current date loaded when the
> program runs.
```

Heh, I'm happy to say I have *no* experience with Visual Basic, but I've messed around with dates in C on Unix systems a lot... :-)

I'd suggest you read the section of the Palm OS SDK documentation on the Time Manager (cited below), to see what goodies the OS has to offer you; that said, the code below ought to take care of your current need... :-)

-- Carl

```
\ dmy-stuff - 99.8.17 9:45am CRJ
```

```
\ DateType defined by PalmOS as:
```

```
\
\ typedef struct {
\   Word year:7;
\   Word month:4;
\   Word day:5;
\ } DateType;
\ year field = years since 1904
```

```
\ Equivalent bitmasks and shifts:
```

```
\ year:      0xfe00 >> 9
\ month:     0x01e0 >> 5
\ day:       0x001f >> 0
```

```
\ Distances to right-shift bit fields
```

```
9 CONSTANT Shift.Y
5 CONSTANT Shift.M
( 0 CONSTANT Shift.D )
```

```
\ Bit masks, right shifted
```

```
(hex) 7f  CONSTANT MaskR.Y
(hex) 0f  CONSTANT MaskR.M
(hex) 1f  CONSTANT MaskR.D
```

```
1904 CONSTANT Add.Y
```

```
: DateType>dmy ( date -- d m y )
```

```
DUP MaskR.D AND SWAP
DUP Shift.M RSHIFT MaskR.M AND
SWAP Shift.Y RSHIFT MaskR.Y AND
Add.Y + ;
```

VARIABLE DtBuf

```
: CurrentDMY ( -- day month year )
DtBuf >abs TimGetSeconds
DateSecondsToDate
DtBuf @ DateType>dmy ;
```

- [Palm OS SDK Docs: Chapter 27 - Time Manager](#)

Re: get current date

Posted by [Carl Jacobsen](#) on August 17, 1999 at 13:08:26:

In Reply to: [Re: get current date](#) posted by Carl Jacobsen on August 17, 1999 at 13:04:25:

[gack, sigh]

Once again, while I'm throwing something together the hard way,
Neal sneaks in and writes it in two lines :-P

-- Carl :-)

Re: get current date

Posted by [E. Ross Helton](#) on August 17, 1999 at 13:27:05:

In Reply to: [Re: get current date](#) posted by Carl Jacobsen on August 17, 1999 at 13:08:26:

Hi Carl :-)

Neal is sneaky that way. He's done it to me a number of times. But that is okay, it is how we learn!

Make it a good day!

Ross

Re: get current date

Posted by [Neal Bridges](#) on August 17, 1999 at 13:19:24:

In Reply to: [Re: get current date](#) posted by Carl Jacobsen on August 17, 1999 at 13:08:26:

> [gack, sigh]

> Once again, while I'm throwing something together the hard way,
> Neal sneaks in and writes it in two lines :-P

Sorry 'bout that Carl :)

TIME&DATE is based around TimSecondsToDateTime, which returns discrete values and doesn't require any masking or extraction.

Neal

Re: get current date

Posted by [Neal Bridges](#) on August 17, 1999 at 11:47:50:

In Reply to: [get current date](#) posted by Yeshiah Mikhol on August 17, 1999 at 11:30:47:

> How do I get the current date similar to the VB NOW() function.
> I need a way to get the result of current-day current-month current-year so I
> can pipe it into dmy>date.

> I am working on date differentials but want to current date loaded when the
> program runs.

The Standard word you want is called TIME&DATE, in *facility-ext*.

needs facility-ext

time&date .s

Neal

string to field

Posted by [Yeshiah Mikhol](#) on August 17, 1999 at 10:29:59:

OK I got the hang of string2Anyfield. (I can use this for the output of Gem.) but then I realized I needed a field2string. I found BOTH of these were in Fields.txt. The snippet looks like this

needs Fields

```
needs string2anyfield
\ saves changing. This was only during testing
\ so I could test both methods
```

```
1001 constant LineField
```

```
show-panel
Username
LineField
string>Field
\ outputs NOTHING to the field
```

BUT

```
show-panel
Username
LineField
string>anyField
```

```
\ DOES output to field line.
```

What am I NOT doing right on Fields.txt and is there a problem which I should anticipate on the Field>string ? why is string>AnyField working but not String>Field. What is easy for you is a lesson for me...

Yeshiah.

Re: string to field

Posted by [Carl Jacobsen](#) on August 17, 1999 at 11:38:41:

In Reply to: [string to field](#) posted by Yeshiah Mikhol on August 17, 1999 at 10:29:59:

```
> OK I got the hang of string2Anyfield. (I can use this for the output of
> Gem.) but then I realized I needed a field2string. I found BOTH of these
> were in Fields.txt. The snippet looks like this
```

```
> ...
> 1001 constant LineField
> ... string>Field
> \ outputs NOTHING to the field
```

```
>
> BUT
> ... string>anyField
> \ DOES output to field line.
```

```
> What am I NOT doing right on Fields.txt and is there a problem which I
> should anticipate on the Field>string ? why is string>AnyField working
> but not String>Field. What is easy for you is a lesson for me...
```

I'm guessing that LineField is not an editable field. What you're

experiencing the reason for string>anyField's existence :-)

string>Field uses OS sysstraps (FldDelete, FldInsert) that emulate typing into the field in question -- if the field is not marked as editable, it won't have the effect you intended. I wrote string>anyField as sort of a drop-in replacement for string>Field (well, not exactly drop in, I guess -- it doesn't return an error flag, while string>Field does), but it uses one of the other "well-known methods" of scribbling on a field, one which is amenable to working on editable fields (it's really just a Forth port of the SetFieldTextFromStr() 'C' function used in some of the demos in the SDK).

I had all the same trouble as you, I just had it six months ago while you weren't looking :-)

-- Carl

Palm OS SDK Docs available on the Web now, BTW...

Posted by [Carl Jacobsen](#) on August 16, 1999 at 12:36:31:

Just to point it out for those who haven't noticed yet (I didn't until recently), the latest version of the Palm OS SDK documentation (beta for OS 3.3), which was previously only available in the much-groaned-at PDF format, is now available on-line at Palm's site in html format.

I bring this up mostly because I've noticed a number of recent asides mentioning the clumsiness of working with the PDF documentation.

Actually, I pulled down all the "interesting sections" a little while back, and set about writing a Perl script to massage it into a form suitable for converting to Doc format, but it isn't quite ready for prime time yet. (The work done on converting it to iSilo format was terrific, but I ended up deciding the files were a little large for me -- I'd rather just carry around selected chapters, like Fields, Forms, Controls, and Data Management -- and it carried over all the page headers/footers/etc., from the PDF version).

-- Carl

- [Palms OS SDK Docs page, look for "...or view the web version"](#)

Re: Palm OS SDK Docs available on the Web now, BTW...

Posted by [Bob Cunningham](#) on August 16, 1999 at 20:58:16:

In Reply to: [Palm OS SDK Docs available on the Web now, BTW...](#) posted by Carl Jacobsen on August 16, 1999 at 12:36:31:

> Just to point it out for those who haven't noticed yet (I didn't until
> recently), the latest version of the Palm OS SDK documentation (beta
> for OS 3.3), which was previously only available in the much-groaned-at
> PDF format, is now available on-line at Palm's site in html format.

YES!!

> I bring this up mostly because I've noticed a number of recent asides
> mentioning the clumsiness of working with the PDF documentation.

Grrr. The main problem with PDF (IMHO) is the rigid font and format of PDF files prevent adequate use of screen resolution and real estate. Sure, it is great for printing, but lousy for viewing. The second problem is the sheer size of PDF files. Just loading and opening them takes forever, compared to even nasty HTML.

For me, browsing the HTML version online (via cable modem) is faster and easier than browsing the PDF version locally (on a P200 with 64MB RAM and fast SCSI disks)!

I haven't tried it, but I'm wondering if browsing live with the Palm might also be faster than local PDF? ;^)

-BobC

recurse recurse explanation needed

Posted by [Dave Bennett](#) on August 16, 1999 at 11:17:52:

At the prompt in Quartus Forth I enter this.

```
2 2 dup + recurse .
```

I get 4 as the answer.

I expect to get 6. Because: 2 2 are on the stack. dup should put another 2 on there. The + should add the first 2. I expect recurse to execute the + again.

How far off base am I here? Do I even have a clue? :) Thanks.

Re: recurse recurse explanation needed

Posted by [Neal Bridges](#) on August 16, 1999 at 11:30:43:

In Reply to: [recurse recurse explanation needed](#) posted by Dave Bennett on August 16, 1999 at 11:17:52:

> At the prompt in Quartus Forth I enter this.

> 2 2 dup + recurse .

> I get 4 as the answer.

> I expect to get 6. Because: 2 2 are on the stack. dup should put another 2 on there. The + should add the first 2. I expect recurse to execute the + again.

> How far off base am I here? Do I even have a clue? :) Thanks.

In the code you show, you're not recursing into anything; RECURSE is a compilation-only word. Even were this to work, you'd recurse repeatedly with no exit until you overflowed the system stack. RECURSE is not a 'repeat the last function' word, but rather causes a recursive call to the current definition.

Any recursive word must have an exit condition, or the recursion will be endless.

Here's an example of recursion from 'beer.txt':

```
: #beers ( n -- n )
  dup 0= if ." No more "
  else dup . then
  ." bottle" dup 1 <> if ." s" then
  ." of beer" ;

: bottles ( beers -- )
  ?dup 0= if exit then \ this is the exit condition
  #beers ." on the wall," cr
  #beers ." ," cr
  ." Take one down, pass it around," cr
  1- #beers ." on the wall." cr cr
  recurse ;
```

Neal

newbie RsrcEdit question (Left Anchor)

Posted by Marcia Elliott on August 16, 1999 at 03:22:09:

This isn't a forth question, sorry, but I'm trying to learn how to use RsrcEdit (it's a lovely program) and this seems to be the best place to find the answer to my question.

What does checking Left Ancher *do* when you are editing, for instance, a button resource? Forms I make with and without this box checked look exactly the same to me.

I can see that for instance Duco uses the checked Left Anchor for its buttons but have started a form that is beginning to look similar without checking that box.

Re: newbie RsrcEdit question (Left Anchor)

Posted by [E.](#) on August 16, 1999 at 03:44:39:

In Reply to: [newbie RsrcEdit question \(Left Anchor\)](#) posted by Marcia Elliott on August 16, 1999 at 03:22:09:

> Forms I make with and without this box checked
> look exactly the same to me.

I'm running off at the mouth here without checking the SDK files (working with PDF files is not my favorite), but I have looked through the index of the appropriate ORA book, and can't find any information on this. Dejanews, Altavista and news.massena.com are similarly fruitless.

As much as I hate to even think this, might this be a bug in RsrcEdit?

Not, mind you, that I have clue one about what left anchor is SUPPOSED to do (and like the original poster, I'd sure appreciate finding out), but I did this:

```
Create ThingOne.PRC, a rsrc database with one form, which has one button
Upload it with the name t1.prc
Rsrcedit it, and remove the "left anchor" checkmark
Upload it with the name t2.prc
uuencode both the PRCs
diff -u the .uue files
```

They're identical.

I would, without hesitation, chalk this up to an error in either my procedure or my understanding, except that Roger has said this:

8/08/99 - version 1.003

- Fixed group field for buttons, wasn't writing changes to resource.

MIGHT this be the case with the left anchor box?

-E (who realizes this post doesn't answer what it DOES, but hope it explains WHY it doesn't answer that)

Re: newbie RsrcEdit question (Left Anchor)

Posted by [Carl Jacobsen](#) on August 16, 1999 at 12:59:26:

In Reply to: [Re: newbie RsrcEdit question \(Left Anchor\)](#) posted by E. on August 16, 1999 at 03:44:39:

> > Forms I make with and without this box checked
> > look exactly the same to me.
>
> I'm running off at the mouth here without checking the SDK files (working
> with PDF files is not my favorite), but I have looked through the index of the
> appropriate ORA book, and can't find any information on this. Dejanews,
> Altavista and news.massena.com are similarly fruitless.

I've never tried using it, but this is what the documentation says:

Anchor Left

Controls how the object resizes itself when its text label is changed.
If checked, the left bound of the object is fixed; if unchecked, the
right bound is fixed.

So it would seem to not come into play until (and unless) you start
changing the amount of text displayed as the button's label at runtime
(with CtlSetLabel?).

-- Carl

- [Button resource docs at Palm's site](#)

Re: newbie RsrcEdit question (Left Anchor)

Posted by [E.](#) on August 16, 1999 at 14:31:49:

In Reply to: [Re: newbie RsrcEdit question \(Left Anchor\)](#) posted by Carl Jacobsen
on August 16, 1999 at 12:59:26:

> I've never tried using it, but this is what the documentation says:

Hey, documentation! What a great concept.

Thanks for the pointer.

```
> So it would seem to not come into play until (and unless) you start  
> changing the amount of text displayed as the button's label at runtime  
> (with CtlSetLabel?).
```

So not anything that I personally need to worry about at the moment.

Upon repeating my experiment from last night, I am not only unable to find a difference between two resource databases that differ only in the (only) button having "Left Anchor" on or off, but when I check them later, they both have it turned on.

Would someone else try this and see if they get the same results?

Create a resource database with one form and one control, which has Left Anchor checked. Upload it to a safe place, and rename it. Change the value of the Left Anchor checkbox, and upload the new one. Compare the two. At this point, I find that they are identical. Then, one at a time, load them back onto your Palm and see if they are still identical. Has to be one at a time, obviously, otherwise the first will get overwritten. When I do this, I find that they both have "Left Anchor" checked.

Or, if nobody wants to actually test it, tell me where the flaw in my method is? Given that RsrcEdit is able to store databases that have Left Anchor (like Duco, apparently) and ones that don't (like my current project), I must be missing something.

-E

Events and fields

Posted by [Matthew Burke](#) on August 15, 1999 at 13:16:49:

I'm trying to get the hang of working with events and would like to do the following:

I have a form with two fields, f1 and f2, with the focus set to f1. What I want is every time the user enters a character into the f1, a word is invoked that alters the value in f2. For example,

```
: do-event  
keyDownEvent = if  
myStr f1 Field>string  
myStr swap f2 Field>string  
drop  
then ;
```

But this doesn't work. I can detect fldChangedEvent, but not keyDownEvent. I'm guessing this has something to do with the field handling the keyDownEvent and not passing it on because I have tried the following with a blank

form with no controls, fields, etc:

```
: do-event case
nilEvent of ." nil" cr endof
penDownEvent of ." pd" cr endof
penUpEvent of ." pu" cr endof
penMoveEvent of ." pm" cr endof
keyDownEvent of ." k" cr endof
\ etc. etc.
endcase ;

: go begin ekey do-event again ;
go
```

And with this, I can detect keydowns just fine. On a related note, I find that with the above, I cannot detect `ctlSelectEvent`, etc. unless I comment out the `penDown`, etc.

I know this is a rather broad query, but I appreciate whatever wisdom on event handling y'all can pass my way.

Thanks,

Matt

Re: Events and fields

Posted by [Neal Bridges](#) on August 15, 1999 at 20:35:25:

In Reply to: [Events and fields](#) posted by Matthew Burke on August 15, 1999 at 13:16:49:

> I'm trying to get the hang of working with events and would
> like to do the following:

> I have a form with two fields, f1 and f2, with the focus set to
> f1. What I want is every time the user enters a character into the
> f1, a word is invoked that alters the value in f2. For example,

```
> : do-event
> keyDownEvent = if
> myStr f1 Field>string
> myStr swap f2 Field>string
> drop
> then ;
```

> But this doesn't work. I can detect `fldChangedEvent`, but not `keyDownEvent`.
> I'm guessing this has something to do with the field handling the
`keyDownEvent`
> and not passing it on because I have tried the following with a blank

> form with no controls, fields, etc:

> : do-event case

> nilEvent of ." nil" cr endof

> penDownEvent of ." pd" cr endof

> penUpEvent of ." pu" cr endof

> penMoveEvent of ." pm" cr endof

> keyDownEvent of ." k" cr endof

> \ etc. etc.

> endcase ;

> : go begin ekey do-event again ;

> go

>

> And with this, I can detect keydowns just fine. On a related note,
> I find that with the above, I cannot detect ctlSelectEvent, etc. unless
> I comment out the penDown, etc.

> I know this is a rather broad query, but I appreciate whatever wisdom on
> event handling y'all can pass my way.

You're right; within the field the form handler itself handles the keyDown event; it's never passed to your app. Although there are ways to do what you want, you might better achieve what you're after by checking the length of the text in the field, and if the length changes, acting at that time.

Neal

Re: Events and fields

Posted by [Carl Jacobsen](#) on August 16, 1999 at 01:30:17:

In Reply to: [Re: Events and fields](#) posted by Neal Bridges on August 15, 1999 at 20:35:25:

> You're right; within the field the form handler itself handles the keyDown
> event; it's never passed to your app. Although there are ways to do what you
> want, you might better achieve what you're after by checking the length of the
> text in the field, and if the length changes, acting at that time.

>

> Neal

Could you also do something with polling FldDirty at appropriate times, and then clearing the flag with FldSetDirty, to await the next time?

I used them for something vaguely related a while back, with success, but it didn't involve having to call them repeatedly, so it may not be very applicable.

-- Carl

Re: Events and fields

Posted by [E.](#) on August 15, 1999 at 14:07:37:

In Reply to: [Events and fields](#) posted by Matthew Burke on August 15, 1999 at 13:16:49:

```
> : do-event case
> nilEvent of ." nil" cr endof
> penDownEvent of ." pd" cr endof
> penUpEvent of ." pu" cr endof
> penMoveEvent of ." pm" cr endof
> keyDownEvent of ." k" cr endof
> \ etc. etc.
> endcase ;
> : go begin ekey do-event again ;
> go
```

```
> And with this, I can detect keydowns just fine. On a related note,
> I find that with the above, I cannot detect ctlSelectEvent, etc. unless
> I comment out the penDown, etc.
```

What I found (and it only vaguely applies to your problem, if it's even accurate) is that you need to go from the specific to the general. An event will register as a pendown before it will register as a keydown / ctlselect / whathaveyou, if you check for it that way, so when you're trying to detect them, you should look for the specific events (keys, controls, etc.) first, and look for pen events last.

I hope someone better informed will step in with particulars, because other than "look for pen events last", I'm not sure what rules apply, if any.

```
> I know this is a rather broad query, but I appreciate whatever wisdom on
> event handling y'all can pass my way.
```

For what it's worth.

-E

What's the right way to do this?

Posted by [E.](#) on August 14, 1999 at 18:15:54:

```
: readfield
s" xxx" drop dup
MainField Field>string
0. 2swap
```

```
>number  
2drop d>s  
fieldval !  
;
```

That s" xxx" feels really bad. It's a field that contains a (one-or) two-digit number. In the definition of Field>string, I didn't see the data in the field ever exist as a number, so I figured I could use >number on the resulting string, but it's UGLY.

Lemme guess, this is where I need to use here?

-E

Re: What's the right way to do this?

Posted by [Neal Bridges](#) on August 14, 1999 at 19:07:36:

In Reply to: [What's the right way to do this?](#) posted by E. on August 14, 1999 at 18:15:54:

>

```
> : readfield  
>   s" xxx" drop dup  
>   MainField Field>string  
>   0. 2swap  
>   >number  
>   2drop d>s  
>   fieldval !  
> ;  
>
```

> That s" xxx" feels really bad. It's a field that contains a (one-or) two-digit number. In the definition of Field>string, I didn't see the data in the field ever exist as a number, so I figured I could use >number on the resulting string, but it's UGLY.

> Lemme guess, this is where I need to use here?

What you've got will work, but abusing a string literal that way is confusing, I agree. Generally a better technique is this:

create buffer 4 chars allot

```
: readfield  
  buffer dup  
  ...  
;
```

Neal

Re: What's the right way to do this?

Posted by [E.](#) on August 15, 1999 at 14:09:22:

In Reply to: [Re: What's the right way to do this?](#) posted by Neal Bridges on August 14, 1999 at 19:07:36:

> create buffer 4 chars allot

That makes a lot more sense, thanks.

-E

Quartus mentioned

Posted by [Alex Alava](#) on August 14, 1999 at 14:12:27:

Hi,

I just went to Crown Books and picked up Palm Programming(O'Reilly) and also picked up Palm OS Programming for Dummies (IDG). The IDG book mentions (1 paragraph) Quartus in Chapter 18 - 10 Other Development Environments.

Alex

Re: Quartus mentioned

Posted by [Neal Bridges](#) on August 14, 1999 at 19:08:48:

In Reply to: [Quartus mentioned](#) posted by Alex Alava on August 14, 1999 at 14:12:27:

> I just went to Crown Books and picked up Palm Programming(O'Reilly) and also
> picked up Palm OS Programming for Dummies (IDG). The IDG book mentions (1
> paragraph) Quartus in Chapter 18 - 10 Other Development Environments.

Thanks -- I'll have to pick up a copy, much though I hate buying books that call me a dummy.

Neal

Read/not-read messages in the forum

Posted by [Neal Bridges](#) on August 13, 1999 at 23:34:12:

If you're finding a difference between how messages are marked read/unread in the discussion forum and the 'last 50' list, change your bookmark to:

<http://www.interlog.com/~nbridges/palmboard/wwwboard.html>

The old link will continue to work, but will result in read messages looking unread in each view.

The change is a result of adding the new 'daVinci' discussion forum.

Neal

another newbie float question.

Posted by [Alex Alava](#) on August 13, 1999 at 12:16:44:

I am very interested in compiling an array of float values. I have a list of string values like "3.1415, 57.295," which I would like to convert to an array of float values during compilation. I do not wish to store the strings, only the float values that can be accessed thru an index. I know there is f! I would like to implement this with a temporary string like >f" 3.1415" for compilation that would use a compilation pad for conversion and then would like to be able to use something like f, for entering in the array. The string is not stored or compiled.

Implement like this.

```
create myfloatlist
>f" 3.1415" \leaves a r on float stack during compilation
f, \ stores r in myfloatlist
>f" 57.295" \ leaves r on float stack
f, \ stores r in myfloatlist

: myfloat ( n--adr) sizeoffloat * myfloatlist + ;
```

At this point I can then access any float on my list.

I need some help with the defining words to do this. Any suggestions?

Alex Alava

Re: another newbie float question.

Posted by [Neal Bridges](#) on August 13, 1999 at 12:28:28:

In Reply to: [another newbie float question.](#) posted by Alex Alava on August 13, 1999 at 12:16:44:

```
> I am very interested in compiling an array of float values. I have a list of
> string values like "3.1415, 57.295, ....." which I would like to convert to
an
> array of float values during compilation. I do not wish to store the strings,
> only the float values that can be accessed thru an index. I know there is f! I
> would like to implement this with a temporary string like >f" 3.1415" for
> compilation that would use a compilation pad for conversion and then would
like
> to be able to use something like f, for entering in the array. The string is
> not stored or compiled.
```

How's this?

```
: f, here f! 1 floats allot ;
```

```
3.1415e f,
57.295e f,
```

Neal

Re: another newbie float question.

Posted by [Alex Alava](#) on August 13, 1999 at 12:47:56:

In Reply to: [Re: another newbie float question.](#) posted by Neal Bridges on August 13, 1999 at 12:28:28:

That was simple! E or e was the key! I missed that on the ansi doc.
Thank you again.

Alex

edit menu

Posted by [Yeshiah Mikhol](#) on August 13, 1999 at 11:59:42:

Whats the easiest way to add the OS default Edit menu and then handle the events.?

Re: edit menu

Posted by [Mark Beckman](#) on August 13, 1999 at 16:00:36:

In Reply to: [edit menu](#) posted by Yeshiah Mikhol on August 13, 1999 at 11:59:42:

> Whats the easiest way to add the OS default Edit menu and then handle the
> events.?

Here is the handler I'm currently using. It seems to work for me, except I
can't prove that Undo works.

Mark

```
\ edit-menu

\ Requires the following to be
\ defined to your resource constants
\ 10000 constant EditUndo
\ 10001 constant EditCut
\ 10002 constant EditCopy
\ 10003 constant EditPaste
\ 10004 constant EditSelectAll
\ 10006 constant EditKeyboard
\ 10007 constant EditGrafitti

255 constant sysKeyboardDefault
255 constant GraffitiRefDefault
: Focus? ( -- fieldptr. )
FrmGetActiveForm
2dup 2>r FrmGetFocus
2r> FrmGetObjectPtr ;

: do_EditUndo ( -- )
Focus? 2dup or if
FldUndo else 2drop then ;

: do_EditCut ( -- )
Focus? 2dup or if
Fldcut else 2drop then ;

: do_EditCopy ( -- )
Focus? 2dup or if
Fldcopy else 2drop then ;

: do_EditPaste ( -- )
Focus? 2dup or if
FldPaste else 2drop then ;

: do_EditSelectAll ( -- )
Focus? 2dup or if
2dup FldGetTextLength
0 swap 2swap FldSetSelection
else 2drop then ;
```

```
: do_EditGrafitti ( -- )
GraffitiRefDefault >byte
SysGraffitiReferenceDialog ;

: do_EditKeyboard ( -- )
sysKeyboardDefault >byte SysKeyboardDialog ;

: doEditMenuEvent ( -- flag )
\ returns TRUE if an event was handled
event >abs itemid
dup EditUndo = if
drop do_EditUndo true else
dup EditCut = if
drop do_EditCut true else
dup EditCopy = if
drop do_EditCopy true else
dup EditPaste = if
drop do_EditPaste true else
dup EditSelectAll = if
drop do_EditSelectAll true else
dup EditKeyboard = if
drop do_EditKeyboard true else
dup EditGrafitti = if
drop do_EditGrafitti true
else drop false then then then then then then ;
```

Re: edit menu

Posted by [Neal Bridges](#) on August 13, 1999 at 13:23:47:

In Reply to: [edit menu](#) posted by Yeshiah Mikhol on August 13, 1999 at 11:59:42:

> Whats the easiest way to add the OS default Edit menu and then handle the
> events.?

I believe Carl Jacobsen's PhoneDecode handles this quite neatly.

Neal

Re: edit menu

Posted by Erwin on August 13, 1999 at 16:21:36:

In Reply to: [Re: edit menu](#) posted by Neal Bridges on August 13, 1999 at
13:23:47:

> > Whats the easiest way to add the OS default Edit menu and then handle the
> > events.?

> I believe Carl Jacobsen's PhoneDecode handles this quite neatly.

> Neal

Yes it does it nicely, and thanks for preventing yet another re-invention of the wheel.

/Erwin

Re: edit menu

Posted by Yeshiah Mikhol on August 15, 1999 at 16:54:56:

In Reply to: [Re: edit menu](#) posted by Erwin on August 13, 1999 at 16:21:36:

> > > Whats the easiest way to add the OS default Edit menu and then handle the
> > > events.?

> > I believe Carl Jacobsen's PhoneDecode handles this quite neatly.

> > Neal

> Yes it does it nicely, and thanks for preventing yet another re-invention of the
> wheel.

> /Erwin

I onloy got a fatal Exception. Us Newbies need some help getting started. I am getting better at menus and buttons though so progress IS being made here.

Re: edit menu

Posted by [Erwin Schomburg](#) on August 13, 1999 at 12:39:41:

In Reply to: [edit menu](#) posted by Yeshiah Mikhol on August 13, 1999 at 11:59:42:

> Whats the easiest way to add the OS default Edit menu and then handle the
> events.?

There is no such thing as an OS default Edit Menu, its just a menu structure that is more or less followed by all applications. You'd have to write your own. Maybe, if I can squeeze the time, I write a library snippet around this idea for Neal and all.

May the Forth be with you!

/Erwin

DATABASE EXAMPLE

Posted by [Volker Lapczynski](#) on August 13, 1999 at 08:08:43:

Hello!

A newbie ist dreaming about to "programm" a (patient-tracking programm) on the palm.

I played with Sattelite forms ... but it is mutch better to develop the programm on the palm (on the job.... :) and develop it further.

I am searching for a EXAMPLE DATABASE: fill in information in a field on a form and put it into a record on a table. and creat/access/delet/search for it.

Can someone donate such a "one field" database?. I am not FORTH enough for it! I can study it and develop it to my patient tracking programm.

I know about DB example.

sorry about my english.

Volker Lapczynski, Norway

lapczyn@uni-muenster.de

doskey tool?

Posted by [Alex Alava](#) on August 12, 1999 at 15:03:21:

Is there a doskey type tool in Quartus? I am looking for a command stack type utility which remembers the last say 5 to 10 lines entered. I know that the up and down hard button remembers the last line. Has anyone modified this or made a hack for this?

Alex Alava

Re: doskey tool?

Posted by [Neal Bridges](#) on August 12, 1999 at 15:31:31:

In Reply to: [doskey tool?](#) posted by Alex Alava on August 12, 1999 at 15:03:21:

> Is there a doskey type tool in Quartus? I am looking for a command stack type
> utility which remembers the last say 5 to 10 lines entered. I know that the up
> and down hard button remembers the last line. Has anyone modified this or made
> a
> hack for this?

It's a feature of Quartus Forth version 2 -- I recall mention of a hack that allows pop-up of the last few entered lines, though; name escapes me at the moment.

Neal

Re: doskey tool?

Posted by [Bob Cunningham](#) on August 12, 1999 at 23:07:10:

In Reply to: [Re: doskey tool?](#) posted by Neal Bridges on August 12, 1999 at 15:31:31:

> > Is there a doskey type tool in Quartus? I am looking for a command stack
type
> > utility which remembers the last say 5 to 10 lines entered. I know that the
up
> > and down hard button remembers the last line. Has anyone modified this or
made
> a
> > hack for this?

> It's a feature of Quartus Forth version 2 -- I recall mention of a hack that
> allows pop-up of the last few entered lines, though; name escapes me at the
> moment.

Some related thoughts for a couple of features that would really be a huge help
to me during development and debugging:

Can text select/cut/copy/paste be enabled for the Quartus console screen?
Could all text display output (including the echo of user input) be captured to
a DOC file?

Not to worry: I'm willing to wait until QF2.1!

Re: doskey tool?

Posted by [Neal Bridges](#) on August 12, 1999 at 23:10:11:

In Reply to: [Re: doskey tool?](#) posted by Bob Cunningham on August 12, 1999 at 23:07:10:

> Some related thoughts for a couple of features that would really be a huge
help
> to me during development and debugging:

> Can text select/cut/copy/paste be enabled for the Quartus console screen?

It's there now, but only applies to the current input line.

> Could all text display output (including the echo of user input) be captured

to
> a DOC file?

Given the structure of DOC files, this would be awkward.

> Not to worry: I'm willing to wait until QF2.1!

I've put your suggestions on my list!

Neal

Re: doskey tool?

Posted by [Carl Jacobsen](#) on August 12, 1999 at 21:48:49:

In Reply to: [Re: doskey tool?](#) posted by Neal Bridges on August 12, 1999 at 15:31:31:

> It's a feature of Quartus Forth version 2 -- I recall mention of a hack that
> allows pop-up of the last few entered lines, though; name escapes me at the
> moment.

Wow, now I'm even more eager to get my hands on v2 :-)

Not sure if this is the hack you're thinking of (it doesn't actually recall previously typed lines, at least not without some forethought), but I've found **Pop!** to be quite handy for interacting with Quartus. Think in terms of a popup hierarchical list of shortcuts, which you can modify and add to on the fly. Mine will invariably have the string "include name-of-whatever-i'm-working-on" in it, so when I switch from MemoPad into Quartus, just a couple strokes get the compiler reading my latest changes. And if I type some line of text that I realize I'm going to do over and over while testing, I just select the text and tell **Pop!** to add it to the list.

Gack, didn't mean to end up sounding like an advertisement -- well, if the description appeals to you, take a look... Like I said, I've found it quite useful in the edit/compile/debug cycle.

-- Carl

- [Pop!](#)

Re: doskey tool?

Posted by [Alex Alava](#) on August 13, 1999 at 11:54:41:

In Reply to: [Re: doskey tool?](#) posted by Carl Jacobsen on August 12, 1999 at 21:48:49:

Thanks for the Suggestions. I am also eager to get Version 2.

I will try pop.

Alex Alava

Happy LeftHanders' Day August 13!

Posted by [Neal Bridges](#) on August 12, 1999 at 14:30:04:

Palm Computing is featuring LeftHack on their home page this week. If you're left-handed (or hey, even if you're not), check it out!

Neal

- [LeftHack on Palm Computing's Home Page!](#)

Re: Happy LeftHanders' Day August 13!

Posted by [Barry Marks](#) on August 13, 1999 at 23:24:55:

In Reply to: [Happy LeftHanders' Day August 13!](#) posted by Neal Bridges on August 12, 1999 at 14:30:04:

> Palm Computing is featuring LeftHack on their home page this week. If you're
> left-handed (or hey, even if you're not), check it out!

> Neal

A related idea for a hack that I think would be helpful is one that makes the arrows at top and bottom of the scroll bars a little easier to hit. Maybe a little bigger. Or maybe a little seperation from the scroll bar itself. I often page down accidentally when I meant to scroll a line or 2. It's pretty clumsy to scroll as it is.

Barry

Re: Happy LeftHanders' Day August 13!

Posted by [Neal Bridges](#) on August 13, 1999 at 23:31:10:

In Reply to: [Re: Happy LeftHanders' Day August 13!](#) posted by Barry Marks on August 13, 1999 at 23:24:55:

> A related idea for a hack that I think would be helpful is one that makes the
> arrows at top and bottom of the scroll bars a little easier to hit. Maybe a
> little bigger. Or maybe a little seperation from the scroll bar itself. I
> often page down accidentally when I meant to scroll a line or 2. It's pretty
> clumsy to scroll as it is.

I wrote that hack. It fails to work with most apps because the wider scrollbar overlaps the field object -- and resizing/moving the field object is tricky.

What's really needed, and is completely missing from the Palm, is a scrolling-field object -- a field with a scrollbar attached and managed by the OS. Then it'd be simple to reconfigure it in a number of ways. As it stands, LeftHack has to dance quite a bit to achieve what it does.

Neal

Re: Happy LeftHanders' Day August 13!

Posted by [Carl Jacobsen](#) on August 12, 1999 at 21:39:29:

In Reply to: [Happy LeftHanders' Day August 13!](#) posted by Neal Bridges on August 12, 1999 at 14:30:04:

> Palm Computing is featuring LeftHack on their home page this week. If you're
> left-handed (or hey, even if you're not), check it out!

Hey Neal, that's cool! Congratulations on getting on Palm's front page!

You know, oddly enough, I'm left handed, and I've played around with LeftHack and Lefty, but I found that I'm better off with the scrollbars on the, uh, right side. I tend to hold my stylus (one of PDA Panache's chrome plated same-size ones) sorta like a wand, with my fingers about an inch and a half away from the tip, so I don't have much trouble seeing the scrollbars. On the other hand, I tend to select lines of text in the memo pad by putting the stylus tip at the extreme left edge of the screen and dragging downwards -- and with the scrollbar moved over there, I was forever flying off to other parts of the file, away from the text that I was trying to concentrate on :-)

I guess everyone interfaces with the Pilot a little differently, eh?

-- Carl

newbie float question

Posted by [Alex Alava](#) on August 12, 1999 at 13:23:53:

Help! I have the following code

```
\ floattest  
needs zstrings  
needs float-ext  
:tst1 z" 3.1415" ;
```

When I type

```
tst1 >float drop f.
```

I get

```
3.1414999
```

instead of 3.1415

What can I do to get the exact same value that I originally had?

When I enter

```
3. d>f f.
```

I get 3.

I guess this can be fixed in (f.) so that there are some trailing zeroes.

I am new with this float stuff.

Alex Alava

Re: newbie float question

Posted by [Neal Bridges](#) on August 12, 1999 at 13:46:53:

In Reply to: [newbie float question](#) posted by Alex Alava on August 12, 1999 at 13:23:53:

> Help! I have the following code

```
> \ floattest  
> needs zstrings  
> needs float-ext  
> :tst1 z" 3.1415" ;
```

> When I type
> tst1 >float drop f.
> I get
> 3.1414999
> instead of 3.1415
> What can I do to get the exact same value that I originally had?

You are getting the exact same value -- at least, the same value as closely as it can be represented in floating-point format. Floats are inherently inaccurate.

Neal

Re: newbie float question

Posted by [Alex Alava](#) on August 12, 1999 at 14:28:40:

In Reply to: [Re: newbie float question](#) posted by Neal Bridges on August 12, 1999 at 13:46:53:

Thanks for the explanation. What do people do when they want to perform calculation in an application? I cannot show 3.1414999 when multiplying 3.1415 by 1.0? Do I need to generate application specific math code using d number math on the numbers before and after the decimal point?

Alex

Re: newbie float question

Posted by [Neal Bridges](#) on August 12, 1999 at 14:31:41:

In Reply to: [Re: newbie float question](#) posted by Alex Alava on August 12, 1999 at 14:28:40:

> Thanks for the explanation. What do people do when they want to perform
> calculation in an application? I cannot show 3.1414999 when multiplying
> 3.1415
> by 1.0? Do I need to generate application specific math code using d number
math
> on the numbers before and after the decimal point?

It comes down to how many significant digits you round the result to. SET-PRECISION controls this, and should give you more consistent (though no more accurate) answers.

Neal

Re: newbie float question

Posted by [Alex Alava](#) on August 12, 1999 at 14:58:45:

In Reply to: [Re: newbie float question](#) posted by Neal Bridges on August 12, 1999 at 14:31:41:

Thanks I'll give that a try.

Alex

Saving program state?

Posted by [Barry Ekstrand](#) on August 12, 1999 at 10:49:10:

I've been working on adding a registration code routine. I've got the code worked out for this, and now am looking to add it into a program. What I'm unsure about is if I am going to need to have the program create a database to save the registration state between uses, or if Palm OS does this automatically. I don't want the user to have to re-enter the registration code for each use; one way to avoid this would be to save the registration code in a database that gets read on start-up each time. Is this an approach others have used? Is there a better way? Any direction or input will be appreciated.

Regards,

Barry Ekstrand

Re: Saving program state?

Posted by [Erwin Schomburg](#) on August 12, 1999 at 11:40:05:

In Reply to: [Saving program state?](#) posted by Barry Ekstrand on August 12, 1999 at 10:49:10:

> I've been working on adding a registration code routine. I've got the code worked out for this, and now am looking to add it into a program. What I'm unsure about is if I am going to need to have the program create a database to

save the registration state between uses, or if Palm OS does this automatically. I don't want the user to have to re-enter the registration code for each use; one way to avoid this would be to save the registration code in a database that gets read on start-up each time. Is this an approach others have used? Is there a better way? Any direction or input will be appreciated.

> Regards,

> Barry Ekstrand

If you do not want to be too secretive, just put the reg-code into the SavedPreferences database. Hints on how to do this see Neal's getprefs and setprefs snippets in conjunction with the exithandling, mine and other's usage of this (e.g. in Quintominoes) and also the Registration Timer snippet further down in this forum.

If you have problems sorting all this out, feel free to mail me.

May the Forth be with you!

/Erwin

Bitmap resources revisited.

Posted by [E.](#) on August 12, 1999 at 02:42:37:

Neal writes:

```
> : DrawBitmapResource
>   ( y x id type. --)
>   DmGetResource 2dup >r >r
>     MemHandleLock
>     WinDrawBitmap
>     r> r> 2dup MemHandleUnlock throw
>   DmReleaseResource throw ;
```

In a small test memo I wrote, I left these values on the stack rather than throwing them. Both MemHandleUnlock and DmReleaseResource (according to "Quartus Forth Specific Words") return Err.

I execute a loop from 0 to 11 (to test all 12 bitmaps), display Tbmp 8000+i and print the stack after each one. MemHandleUnlock throws -3496 at first, then -15382, -15378, etc. Keep adding 4, down to -15342.

DmReleaseResource returns 0 each time.

Since I'm getting a non-zero Err, should I be concerned? It all seems to work, aside from that, but I don't want to open myself up to a whole bunch of unseen errors that will come back and bite me later.

-E

Re: Bitmap resources revisited.

Posted by [Neal Bridges](#) on August 12, 1999 at 12:19:14:

In Reply to: [Bitmap resources revisited.](#) posted by E. on August 12, 1999 at 02:42:37:

> Neal writes:

>

```
> > : DrawBitmapResource
> >   ( y x id type. --)
> >   DmGetResource 2dup >r >r
> >     MemHandleLock
> >     WinDrawBitmap
> >     r> r> 2dup MemHandleUnlock throw
> >   DmReleaseResource throw ;
>
```

> In a small test memo I wrote, I left these values on the stack rather than
> throwing them. Both MemHandleUnlock and
> DmReleaseResource (according to "Quartus Forth Specific Words")
> return Err.

> I execute a loop from 0 to 11 (to test all 12 bitmaps), display Tbmp 8000+i
> and
> print the stack ater each one. MemHandleUnlock throws -3496 at
> first, then -15382, -15378, etc. Keep adding 4, down to -15342.
> DmReleaseResource returns 0 each time.

> Since I'm getting a non-zero Err, should I be concerned? It all
> seems to work, aside from that, but I don't want to open myself up to a whole
> bunch of unseen errors that will come back and bite me later.

E, if you were getting a non-zero return from MemHandleUnlock, it'd be the same
(or one of a very few possibilities) each time. Something else is going on.
Mail or post your actual code, and I'll see if I can find what.

Neal

Re: Bitmap resources revisited.

Posted by [E.](#) on August 12, 1999 at 13:17:31:

In Reply to: [Re: Bitmap resources revisited.](#) posted by Neal Bridges on August 12, 1999 at 12:19:14:

> E, if you were getting a non-zero return from MemHandleUnlock, it'd be the
> same (or one of a very few possibilities) each time.

Indeed. I was expecting "0 0" each time.

> Something else is going on.

Dumbass Attack on my part.

> Mail or post your actual code, and I'll see if I can find what.

Thanks for the offer, but Erwin nailed it. :)

-E

Re: Bitmap resources revisited.

Posted by [E.](#) on August 12, 1999 at 03:27:25:

In Reply to: [Bitmap resources revisited.](#) posted by E. on August 12, 1999 at 02:42:37:

> Since I'm getting a non-zero Err, should I be concerned? It all
> seems to work, aside from that, but I don't want to open myself up to a whole
> bunch of unseen errors that will come back and bite me later.

Um. Not to mention, how can I catch a value that keeps changing like this?

-E

Re: Bitmap resources revisited.

Posted by [Erwin Schomburg](#) on August 12, 1999 at 08:13:16:

In Reply to: [Re: Bitmap resources revisited.](#) posted by E. on August 12, 1999 at 03:27:25:

> > Since I'm getting a non-zero Err, should I be concerned? It
> all

> > seems to work, aside from that, but I don't want to open myself up to a

whole
> > bunch of unseen errors that will come back and bite me later.
> Um. Not to mention, how can I catch a value that keeps changing
> like this?
> -E

Weird, after the MemHandleUnlock I get the 2 cells for the handle and zero, the DMResourceRelease gives me zero, having "eaten" the handle. You don't try to catch a "variable" error-return value, you should check what you do to your stacks (plural!) while in the loop, the loop index is buffered as top of stack on the return stack. From what you are writing, I take it that you tried to split up the DrawBitmapResource word inside a loop, so the stacking of the handles to the return stack gets mixed up with the loop index sitting there. This a possible scenario?

May the Forth be with you!

/Erwin

Re: Bitmap resources revisited.

Posted by [E.](#) on August 12, 1999 at 11:52:14:

In Reply to: [Re: Bitmap resources revisited.](#) posted by Erwin Schomburg on August 12, 1999 at 08:13:16:

> the loop index is buffered as top of stack
> on the return stack.

This much I knew.

> From what you are writing, I take it that you tried to
> split up the DrawBitmapResource word inside a loop, so the stacking of the
> handles to the return stack

This, I did not.

> gets mixed up with the loop index sitting there.
> This a possible scenario?

I don't think so, from what I understand of what you're saying. I certainly use the code given by Neal for DrawBitmapResource. Well, almost.

My actual code (given the definition of DrawBitmapResource in the thread above, except that I don't THROW the values) is thus:

```
\ All my "needs".  
(id) CRAP (id) rsrc use-resources  
\ This contains 8000..8009 as the digit bitmaps, plus 8010 and 8011 as two more.  
id Tbmp
```

```
: pause
  begin ekey penupevent = until
;

: go
  12 0 do
    page
    0 0 i 8000 + Tbmp
    DrawBitmapResource
    80 80 at .s 2drop
    pause
  loop
;
```

And, as I said, the loop executes fine, the bitmaps work, and so on. The only thing I notice out of the ordinary is the changing value returned by MemHandleUnlock.

I'm just confused as to, well, WHY it's working. I'm certainly not complaining about it, and I intend to keep my code simple enough so that I never have to split up the Get and Release of resources (or bundle them all into the same word, as I do above), but it bothers me when People Who Know do things that seem important (THROWing the return value from MemHandleUnlock, etc.) and I cannot both understand why AND get meaningful results in my own experiments. It's fairly obvious why you would want to THROW the error code, but I can't seem to get back a number worth THROWing.

> May the Forth be with you!

Thanks. It's trying. :/

-E

Re: Bitmap resources revisited.

Posted by Erwin on August 12, 1999 at 12:17:30:

In Reply to: [Re: Bitmap resources revisited.](#) posted by E. on August 12, 1999 at 11:52:14:

> > the loop index is buffered as top of stack
> > on the return stack.

> This much I knew.

> > From what you are writing, I take it that you tried to
> > split up the DrawBitmapResource word inside a loop, so the stacking of the
> > handles to the return stack

> This, I did not.

```
> > gets mixed up with the loop index sitting there.
> > This a possible scenario?

> I don't think so, from what I understand of what you're saying. I certainly
use
> the code given by Neal for DrawBitmapResource. Well, almost.

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> thread above, except that I don't THROW the values) is thus:

>

> \ All my "needs".
> (id) CRAP (id) rsrc use-resources
> \ This contains 8000..8009 as the digit bitmaps, plus 8010 and 8011 as two
more.

> id Tbmp
> : pause
>   begin ekey penupevent = until
> ;

> : go
>   12 0 do
>     page
>     0 0 i 8000 + Tbmp
>     DrawBitmapResource
>     80 80 at .s 2drop
>     pause
>   loop
> ;
>

> And, as I said, the loop executes fine, the bitmaps work, and so on. The only
> thing I notice out of the ordinary is the changing value returned by
> MemHandleUnlock.

> I'm just confused as to, well, WHY it's working. I'm certainly not
complaining
> about it, and I intend to keep my code simple enough so that I never have to
> split up the Get and Release of resources (or bundle them all into the same
> word, as I do above), but it bothers me when People Who Know do things that
seem
> important (THROWing the return value from
> MemHandleUnlock, etc.) and I cannot both understand why AND get
> meaningful results in my own experiments. It's fairly obvious why you would
> want to THROW the error code, but I can't seem to get back a
number
> worth THROWing.

> > May the Forth be with you!

> Thanks. It's trying. :/

> -E
```

Assuming, just assuming, that your revised code with stack comments looks like

```
: DrawBitmapResource
( y x id type. --)
DmGetResource 2dup
( y x handle. handle. )
>r >r
( y x handle. ) { handle. }
MemHandleLock
( y x pointer. ) { handle. }
WinDrawBitmap
( [stack empty] ) { handle. }
r> r> 2dup
( handle. handle. \ 4 cells! )
MemHandleUnlock
( handle. errMHU \ 3 cells! )
DmReleaseResource
( "half_a_handle" errDRR \ 2 cells ! )
;
```

This a possible scenario?

/Erwin

Re: Bitmap resources revisited.

Posted by [E.](#) on August 12, 1999 at 13:13:29:

In Reply to: [Re: Bitmap resources revisited.](#) posted by Erwin on August 12, 1999 at 12:17:30:

> Assuming, just assuming, that your revised code with stack comments looks like

Okay, I've snipped yours and am going to attempt to retrace mine from the beginning. Using "Quartus Forth Specific Words" for the stack diagrams...

```
: DrawBitmapResource ( y x id type. -- n1 n2 ) \ Neal's minus 2 THROWS.
DmGetResource ( y x id type. -- y x VoidHand. )
2dup ( y x VoidHand. -- y x VoidHand. VoidHand. )
>r >r ( y x VoidHand. VoidHand. -- y x VoidHand. | VoidHand. )
\ Not sure how to represent return stack in diagrams, so using |.
MemHandleLock ( y x VoidHand. | VoidHand. -- y x &VoidPtr. | VoidHand. )
WinDrawBitmap ( y x &VoidPtr. | VoidHand. -- | VoidHand. )
r> r> ( | VoidHand. -- VoidHand. )
2dup ( VoidHand. -- VoidHand. VoidHand. )
MemHandleUnlock ( VoidHand. VoidHand. -- VoidHand. Err )
\ Ah, crap. There's the error.
DmReleaseResource ( VoidHand. Err -- [garbage] Err )
;
```

> *This* a possible scenario?

That's it exactly. I guess I got really lucky that my half-a-handle move didn't give me a Fatal Exception. :/

I changed the last line to

```
>r  
DmReleaseResource  
r>
```

and I'm getting a stack of "0 0", as I expected.

Thanks so much. I would NEVER have found that. :(

-E

Re: Bitmap resources revisited.

Posted by [E. Ross Helton](#) on August 12, 1999 at 15:50:19:

In Reply to: [Re: Bitmap resources revisited.](#) posted by E. on August 12, 1999 at 13:13:29:

Hi All;

Since we have been discusing bitmaps -- have question. How do you make one go away? For instance I have one appear at 20 30 then I what the same one to be appear at 100 120. How do you make the 20 30 one go away?

Make it a good day!

Ross

Re: Bitmap resources revisited.

Posted by [Neal Bridges](#) on August 12, 1999 at 16:10:52:

In Reply to: [Re: Bitmap resources revisited.](#) posted by E. Ross Helton on August 12, 1999 at 15:50:19:

> Since we have been discusing bitmaps -- have question. How do you make one
> go away? For instance I have one appear at 20 30 then I what the same one to
> be appear at 100 120. How do you make the 20 30 one go away?

Use **erase-rectangle** from *graphics.txt*.

Neal

Projects underway?

Posted by [Neal Bridges](#) on August 11, 1999 at 16:43:57:

Hi folks. I haven't build the user links page yet, and so thought I'd put out another call. Let me know what you're working on -- if you've got a Quartus Forth-related page I'm happy to put up a link.

Any good news is welcome; my spirits need a boost!

Neal

Re: Projects underway?

Posted by [Carl Jacobsen](#) on August 16, 1999 at 02:57:48:

In Reply to: [Projects underway?](#) posted by Neal Bridges on August 11, 1999 at 16:43:57:

Well I'm a little late to the party on this one, but it's been a busy weekend :-)

I've got a couple applications (and some attendant library files) in the queue, both 80% done. One might or might not end up as a options menu choice on the other. Both were written at the behest of a friend of mine who has a loom and weaves things as a hobby (no, it isn't a very hot vertical market to write for, just, well, I needed some subject matter to test ideas on, and she wanted me to write her a Pilot program; better than writing yet another mileage tracker, though I may do that someday, too :-).

So, first app in the queue: Weavecalc

This program lets you enter a bunch of numbers in a left-hand column, describing a prospective weaving project (length, width, threads per inch, etc.), and then displays various computed numbers in the right-hand column, culminating in the total amount of yarn needed for the project. Something one can use for lots of what-if calculations while perusing yarn catalog or looking at projects in a book. For fun (or maybe it will be terribly useful to someone), the program can convert both the entered and computed values back and forth between metric and "English" units on the fly. The project was using my fixed-point doubles "library" until I started doing metric/english conversions, and then it got converted to floats. The calculation and display stuff all works fine (my friend has since used it on several projects), but it does not yet save any state between executions. It's waiting for me to hook it up to a database so that one can enter numbers for multiple projects,

giving each a name, and move among them using a pick list (up in the corner, like the way categories work).

Second app in the queue: Dobby

A program to assist a weaver in following their way through a complicated pattern on the loom (named after an attachment for a loom that does sort of the same thing; weaving a complex pattern can involve pressing a different grouping of the 4, 8, or 16 pedals for each row in the pattern, which may have dozens of rows). Basically, the program reads a memo containing one line per row in the pattern, with each line containing a "0" or "1" representing each foot pedal (actually called treadles). The program displays a grid of filled and unfilled squares on the screen, representing the current row of the pattern, the next two rows, and the previous five rows (the current row is highlighted, the others are "dim"; also, there are row numbers down the edge); the user uses the hardware up/down buttons to move through the pattern as each row is treadled. In this program, the display stuff all works, and it currently reads from a memo with a hard-coded title. It's waiting for me to add code to display a picklist of memos whose titles start with some special prefix.

Miscellaneous "library" files:

float-support - provides additional words for dealing with floats:

```
FCONSTANT NoF \ "No Float"
=NoF ( -- flag ) ( F: r -- )
f>string ( u -- c-addr u ) ( F: r -- )
field>f ( fieldID -- ) ( F: -- r )
f>field ( places fieldID -- ) ( F: r -- )
```

focus-ring - provides a simple mechanism to ensure that grafitti "next-field" and "previous-field" strokes sequence properly through your input fields

memo-file - provides a coherent set of words for working with memos, that let you treat them pretty much like a tiny unix filesystem (reading them a line at a time, etc.). To be joined eventually by memo-file-rw, which supplies corresponding words for writing to the memo database (this first pass doesn't contain any words that modify the database, because that could be dangerous :-).

memo-list - words to build a list of titles of memos matching some criteria, which can then be used in conjunction with LstSetDrawFunction do display the list of selected memos (useful for allowing users to select a memo for importing, etc.). Still putting this one together...

os-string - a variation on zstrings, gives one a word for creating strings that return 32bit absolute addresses and are zero terminated (in other words, very OS friendly). Haven't actually used this yet for anything...

```
os" ( ...<"> -- ) ( runtime: z-addr. )
```

sparse-array - words to implement "sparse" single-dimension arrays. Space will be allocated in mid-sized chunks (i.e. larger than one array element, but smaller than the whole array) as needed. Elements can be accessed randomly (so you don't need to traverse a list to find the 43rd element), but it avoids doing thousands of tiny allocations. For when you want a small

array, but you're not sure how large you really need, but you don't want to fill all of memory with a worst-case-sized array if it isn't actually needed. Uses ALLOCATE, so the elements all live inside Quartus's address space (i.e. can be accessed with cell-sized pointers).

trailing - enhances and expounds upon the Standard's -TRAILING word. Provides:
-TRAILING (c-addr u -- c-addr u) (missing from Quartus?)
/leading (c-addr u -- c-addr u)
-trailing-ws (c-addr u -- c-addr u)
/leading-ws (c-addr u -- c-addr u)

Well, that about covers it, everything on my stack. The two apps above should surface before too much longer, along with full source, same arrangement as with PhoneDecode.

Actually, I think I've seen a few programs where the author says, in essence, "this program is freely available, but if you want to reward me for writing it, I've listed it at PilotGear as shareware (for, say, \$5) to make doing so a little easier." I might be tempted to do something like that, full source, freeware, no special registered version, but if someone feels particularly motivated to send me some money, there's an easy way. Any comments on this? Anyone know if PilotGear looks askance at this attitude?

-- Carl

Re: Projects underway?

Posted by [Vadim Zaliva](#) on August 13, 1999 at 19:23:15:

In Reply to: [Projects underway?](#) posted by Neal Bridges on August 11, 1999 at 16:43:57:

> Hi folks. I haven't build the user links page yet, and so thought I'd put out
> another call. Let me know what you're working on -- if you've got a Quartus
> Forth-related page I'm happy to put up a link.

Here is my page:

<http://noir.crocodile.org/pilot/forth.html>

It contains now just some simple serial code.

I am also finishing another sample app on Quartus: Restoraunt Bill Splitter. It is 90% done, once I am finished with it I will post it there.

Vadim

Re: Projects underway?

Posted by [Wayne Carson](#) on August 13, 1999 at 01:05:15:

In Reply to: [Projects underway?](#) posted by Neal Bridges on August 11, 1999 at 16:43:57:

Well, I was working on a version of fox and geese (an English game where the fox eats the geese and the geese try to surround the fox). I got most of the min-max algorithm working. Very slow, though. Then my Pilot got sick. Hopefully this week I'll be buying another. Staples has the Pro on sale for \$100, if you can fine it.

I miss being able to program a little wherever I go.

Wayne

Re: Projects underway?

Posted by [Dave Seidel](#) on August 11, 1999 at 19:56:20:

In Reply to: [Projects underway?](#) posted by Neal Bridges on August 11, 1999 at 16:43:57:

> Any good news is welcome; my spirits need a boost!

No project to talk about yet, just wanted to commiserate. :-)

I know how you feel, but don't let it bother you for too long. You've got great, useful software, and it is appreciated by a number of discerning (ahem) people.

- Dave

Re: Projects underway?

Posted by [Matthew Blair](#) on August 12, 1999 at 08:24:15:

In Reply to: [Re: Projects underway?](#) posted by Dave Seidel on August 11, 1999 at 19:56:20:

> > Any good news is welcome; my spirits need a boost!

> No project to talk about yet, just wanted to commiserate. :-)

> I know how you feel, but don't let it bother you for too long. You've got
> great, useful software, and it is appreciated by a number of discerning (ahem)
> people.

> - Dave

Dave's right -- When I first got my Palm III approximately 3-4 months ago and found out that it was programmable, I knew that I would be getting involved. My first inclination was to grab the ASDK since I wanted to do assembly rather than C/C++. However, I found that I just couldn't overcome my inertia and turn on the computer to do the whole compile-link-download to POSE-test-repeat cycle (especially after sitting in front of a computer most of the day!). I initially had some reservations about the feasibility of programming onboard, but after actually trying it and seeing the built-in support for Palm OS API calls and the other infrastructure in place, plus small executables, etc., I have to say that Quartus Forth is one of the most innovative and well-built concepts I have seen for the Palm.

In short, you deserve an official atta-boy (TM)!

- Matthew

Re: Projects underway?

Posted by [Neal Bridges](#) on August 12, 1999 at 00:08:54:

In Reply to: [Re: Projects underway?](#) posted by Dave Seidel on August 11, 1999 at 19:56:20:

> > Any good news is welcome; my spirits need a boost!

> No project to talk about yet, just wanted to commiserate. :-)

> I know how you feel, but don't let it bother you for too long. You've got
> great, useful software, and it is appreciated by a number of discerning
(ahem)
> people.

Thanks, Dave. I appreciate that. I'm already shaking it off. :)

Neal

Re: Projects underway?

Posted by [Erwin Schomburg](#) on August 11, 1999 at 16:56:12:

In Reply to: [Projects underway?](#) posted by Neal Bridges on August 11, 1999 at 16:43:57:

> Hi folks. I haven't build the user links page yet, and so thought I'd put out
> another call. Let me know what you're working on -- if you've got a Quartus
> Forth-related page I'm happy to put up a link.

> Any good news is welcome; my spirits need a boost!

> Neal

If you call again, I shall answer again:
<http://home.t-online/home/Erwin.Schomburg>

I can understand your frustratation, that person had me pissed off (excuse my french){oops, shouldn't use that one towards a Canadian} a couple of times, directly and indirectly, though I have not been had as bad as you.

Remember, the Forth will be with you, always.

/Erwin

Is it possible to use QForth with Palm IIIe?

Posted by [Luis Martin](#) on August 11, 1999 at 14:57:00:

Since 3com says the Palm IIIe is not software upgradeable, does it imply you can't download new applications to it?

Luis Martin

Re: Is it possible to use QForth with Palm IIIe?

Posted by [Neal Bridges](#) on August 11, 1999 at 16:09:48:

In Reply to: [Is it possible to use QForth with Palm IIIe?](#) posted by Luis Martin on August 11, 1999 at 14:57:00:

> Since 3com says the Palm IIIe is not software upgradeable, does it imply you
> can't download new applications to it?

You can certainly put new applications on the IIIe. The non-software-upgradeable part refers to the inability to flash in a new ROM

image.

Neal

Re: Is it possible to use QForth with Palm IIIe?

Posted by [Carl Jacobsen](#) on August 11, 1999 at 15:57:25:

In Reply to: [Is it possible to use QForth with Palm IIIe?](#) posted by Luis Martin on August 11, 1999 at 14:57:00:

> Since 3com says the Palm IIIe is not software upgradeable, does it imply you
> can't download new applications to it?

Nope, just that when OS3.3 comes out, er, sometime soon, you won't be able to use it (er, I understand that it will be a new (flashable) ROM image, but I suppose they could also make a patch file that sits your normal RAM and redirects some of the system calls to itself). But you ought to be able to HotSync apps into it to your heart's (or at least, RAM's) content.

The IIIe has the OS in ROM, rather than Flash RAM (EEPROM?). All the other more recent models (III, IIIx, V, VII) have switched to the more expensive Flash RAM because updates can be distributed online, rather than through a tedious and expensive exchange program. They (Palm) have yet to take advantage of this capability (though I presume 3.3 will remedy that), but TRG has made wonderful use of the "spare" space in the Flash, with FlashPro.

My take on the IIIe is that it's aimed directly at people who have little need for expansion and who have not yet seriously considered PalmPilots because the price scared them away. With a \$229 list, you just know that it'll be selling for \$150 online in a few months, and could that "e" be for "educational" rather than "economy"? Appearing a month or so before school starts, it's the obvious choice for parents to send their kids off to college with...

Of course, Neal is the ultimate authority (and may have run tests already), but I suspect the IIIe would run Quartus just fine.

-- Carl

Suggestions for Forth editor

Posted by [Matthew Blair](#) on August 11, 1999 at 10:57:13:

Hi,

I've been thinking about an application that I could use to learn both Forth and the Palm API in more depth than my simple factorial calculator. In working with Quartus, I've noticed that what I really

need is a decent editor besides the MemoPad.

I can think of a few features that I would like, such as:

- revision control (maybe as simple as an easy way to duplicate a file without having to select all text, open new memo, paste)
- adjustable indentation
- small button to indent (instead of having to do two strokes for each indent level)

Are there other features that would be particularly useful for a Forth editor? Would such an editor be useful to this community? Any comments or suggestions are appreciated.

Thanks,

Matt

Re: Suggestions for Forth editor

Posted by [Carl Jacobsen](#) on August 11, 1999 at 15:06:48:

In Reply to: [Suggestions for Forth editor](#) posted by Matthew Blair on August 11, 1999 at 10:57:13:

> Are there other features that would be particularly useful for a
> Forth editor? Would such an editor be useful to this community?
> Any comments or suggestions are appreciated.

Well, since you asked...

I maintain a BrainForest database of things that irk me (or just occur to me) about some of the programs I use. Occasionally, when things hit some ill-defined critical mass, I mail off the list of suggestions and/or bugs to the program author (I mailed Roger Lawrence a long laundry list of suggestions a while back, and darned if he didn't implement practically all of them :-). Anyways, the reason I bring this up is that I've got such a list for MemoPad...

My original idea, was/is to send this to 3com sometime, or, since I think the source for MemoPad is available, to just to patch it all in myself sometime (since no changes to the file format are entailed, such a modified MemoPad could be used as a drop-in replacement, perhaps with the additional global preferences stored under a different tag in the preferences database).

The cool part is, none of this has to make the MemoPad appear/feel any different to "normal" users, if the new options default to the old behavior.

So, here's a copy of my list, with some hastily added commentary, to try to explain my reasoning. If you feel like implementing any of this, in Forth or in C, I'll be happy to use it :-)

These are roughly in order of decreasing preference (er, the ones I want most are nearest the top of the list):

- * Add an option to turn off the "beep over" into next memo.
I *hate* accidentally ending up in a different memo, just because I didn't stop scrolling fast enough -- should be able to set an option so that MemoPad just beeps endlessly when one tries to scroll past either end of the memo.
- * Add an option for "Auto-Indent".
With auto-indent toggled on, when you enter a return stroke, MemoPad would then automatically insert a copy of whatever whitespace (blanks and/or tabs) were at the beginning of the line you just ended. You can backspace away the indent, obviously, but (statistically) most of the time you won't. Makes any programming language where indents are used to show structure *much* easier to write.
- * Add menu choices for "Block Indent" and "Block Unindent".
Indents (or unindents) each line in currently selected block of text by "shiftwidth" spaces (or, optionally, tabs). If no block selected, indents (or unindents) the current line only. Options screen should allow specification of a count for shiftwidth, and radio buttons for spaces or tabs (most commonly, 2 spaces for Forth source code, or 1 tab for various other things). This is really handy when you decide to add an enclosing loop around several lines of code. (Lifted straight from "vi".)
- * Add shortcuts for "go to top/bottom of document".
SmartDoc uses /1 and /2. More convenient than holding down the scroll buttons.
- * Add menu choices for in-memo search/replace.
Can be handled by EEdit or MagicText hacks, but it'd be nice to have this built-in.
- * Add an option to replace scrollbar with up/dn arrows in lower right corner.
They're less convenient, but on occasion useful, as they would allow lines to be a tiny bit longer without wrapping.
- * Add an option to turn underlining on/off.
Would sometimes make it much easier to see punctuation. Yes, this can be done with hacks, but I'd still like to see it built into MemoPad.
- * Add an option to turn auto-shift on/off.
Again, can be done with hacks (Hi Neal), but I'd like to see it built into MemoPad.

-- Carl

Re: Suggestions for Forth editor

Posted by [Neal Bridges](#) on August 11, 1999 at 16:17:36:

In Reply to: [Re: Suggestions for Forth editor](#) posted by Carl Jacobsen on August 11, 1999 at 15:06:48:

> * Add an option for "Auto-Indent".
> With auto-indent toggled on, when you enter a return stroke,
> MemoPad would then automatically insert a copy of whatever
> whitespace (blanks and/or tabs) were at the beginning of the
> line you just ended. You can backspace away the indent,
> obviously, but (statistically) most of the time you won't.
> Makes any programming language where indents are used to
> show structure *much* easier to write.

This might make a good HackMaster hack. I'm not sure I want to write it, given recent events, but nonetheless it should be manageable as a hack.

Neal

Re: Suggestions for Forth editor

Posted by [Matthew Blair](#) on August 11, 1999 at 15:59:57:

In Reply to: [Re: Suggestions for Forth editor](#) posted by Carl Jacobsen on August 11, 1999 at 15:06:48:

> My original idea, was/is to send this to 3com sometime, or, since I think
> the source for MemoPad is available, to just to patch it all in myself
> sometime (since no changes to the file format are entailed, such a modified
> MemoPad could be used as a drop-in replacement, perhaps with the additional
> global preferences stored under a different tag in the preferences database).

> The cool part is, none of this has to make the MemoPad appear/feel any
> different to "normal" users, if the new options default to the old behavior.

-- snipped ---

Carl,

Thanks for your input -- these are all cool suggestions.
My first thought was also to use the same MemoPad database; however,
I thought it might be good to have memos > 4K. I haven't done
enough QF programming (or looked at other's sources) to see if
the 4K limit is a big deal...

Matt

Re: Suggestions for Forth editor

Posted by Erwin on August 11, 1999 at 16:47:31:

In Reply to: [Re: Suggestions for Forth editor](#) posted by Matthew Blair on August 11, 1999 at 15:59:57:

> > My original idea, was/is to send this to 3com sometime, or, since I think
> > the source for MemoPad is available, to just to patch it all in myself
> > sometime (since no changes to the file format are entailed, such a modified
> > MemoPad could be used as a drop-in replacement, perhaps with the additional
> > global preferences stored under a different tag in the preferences
database).

> > The cool part is, none of this has to make the MemoPad appear/feel any
> > different to "normal" users, if the new options default to the old behavior.

> -- snipped ---

> Carl,

> Thanks for your input -- these are all cool suggestions.

> My first thought was also to use the same MemoPad database; however,

> I thought it might be good to have memos > 4K. I haven't done

> enough QF programming (or looked at other's sources) to see if

> the 4K limit is a big deal...

> Matt

Even if you modularize down to less than 4k chunks, that leaves the inability of memos to enact any version control without modifying many of the INCLUDEs and NEEDS. In doc format you can duplicate a database, rename it and continue work towards new horizons ehh, features. Why do I get the impression that nobody likes to write Quartus code in a doc editor?

/Erwin

Re: Suggestions for Forth editor

Posted by [Neal Bridges](#) on August 11, 1999 at 16:11:19:

In Reply to: [Re: Suggestions for Forth editor](#) posted by Matthew Blair on August 11, 1999 at 15:59:57:

> My first thought was also to use the same MemoPad database; however,

> I thought it might be good to have memos > 4K. I haven't done

> enough QF programming (or looked at other's sources) to see if

> the 4K limit is a big deal...

Beware -- the >4K memos won't synchronize to the Palm Desktop software properly.

Neal

Re: Suggestions for Forth editor

Posted by [Erwin Schomburg](#) on August 11, 1999 at 11:20:40:

In Reply to: [Suggestions for Forth editor](#) posted by Matthew Blair on August 11, 1999 at 10:57:13:

> Hi,

> I've been thinking about an application that I could use to learn
> both Forth and the Palm API in more depth than my simple factorial
> calculator. In working with Quartus, I've noticed that what I really
> need is a decent editor besides the MemoPad.

> I can think of a few features that I would like, such as:

> - revision control (maybe as simple as an easy way to duplicate a
> file without having to select all text, open new memo, paste)

> - adjustable indentation

> - small button to indent (instead of having to do two strokes for
> each indent level)

> Are there other features that would be particularly useful for a
> Forth editor? Would such an editor be useful to this community?
> Any comments or suggestions are appreciated.

> Thanks,

> Matt

'xcept the indentation (which you could emulate by the tab character,
(Gr_shift_dot-upstroke-to_right), you sound like you want to try SmartDoc.

May the Forth be with you!
/Erwin

IR Port

Posted by [Jim Meadows](#) on August 10, 1999 at 14:23:11:

A while back you mentioned you may develop a way to use the serial IO routines to access the IR port. Any luck? I have a project I am developing that requires access to the IR port. - Jim

Re: IR Port

Posted by [Neal Bridges](#) on August 10, 1999 at 14:34:15:

In Reply to: [IR Port](#) posted by Jim Meadows on August 10, 1999 at 14:23:11:

> A while back you mentioned you may develop a way to use the serial IO routines
> to access the IR port. Any luck? I have a project I am developing that
> requires access to the IR port. - Jim

Sorry for the delay, Jim. Have you tried to use the system call I mentioned previously? If not, I'll sit down tonight and put a few lines together.

Neal

Re: IR Port

Posted by [Jim Meadows](#) on August 11, 1999 at 23:14:15:

In Reply to: [Re: IR Port](#) posted by Neal Bridges on August 10, 1999 at 14:34:15:

> > A while back you mentioned you may develop a way to use the serial IO
routines
> > to access the IR port. Any luck? I have a project I am developing that
> > requires access to the IR port. - Jim

> Sorry for the delay, Jim. Have you tried to use the system call I mentioned
> previously? If not, I'll sit down tonight and put a few lines together.

> Neal

I was not real clear on which system call to use. Any help would be greatly appreciated. Thanks - Jim

Re: IR Port

Posted by [Neal Bridges](#) on August 12, 1999 at 00:19:15:

In Reply to: [Re: IR Port](#) posted by Jim Meadows on August 11, 1999 at 23:14:15:

> > > A while back you mentioned you may develop a way to use the serial IO
> routines
> > > to access the IR port. Any luck? I have a project I am developing that
> > > requires access to the IR port. - Jim

> > Sorry for the delay, Jim. Have you tried to use the system call I mentioned

> > previously? If not, I'll sit down tonight and put a few lines together.

> > Neal

> I was not real clear on which system call to use. Any help would be greatly
> appreciated. Thanks - Jim

Ok -- can't manage it tonight but will hit the ground running tomorrow.

Neal

Re: IR Port

Posted by [Jim Meadows](#) on August 14, 1999 at 21:51:54:

In Reply to: [Re: IR Port](#) posted by Neal Bridges on August 12, 1999 at 00:19:15:

> > > > A while back you mentioned you may develop a way to use the serial IO
> > routines

> > > > to access the IR port. Any luck? I have a project I am developing
that

> > > > requires access to the IR port. - Jim

> > > Sorry for the delay, Jim. Have you tried to use the system call I
> mentioned

> > > previously? If not, I'll sit down tonight and put a few lines together.

> > > Neal

> > I was not real clear on which system call to use. Any help would be
greatly

> > appreciated. Thanks - Jim

> Ok -- can't manage it tonight but will hit the ground running tomorrow.

> Neal

Great! I'll be happy to try out whatever you come up with & show you my final
product when I'm finished. - Jim

Re: IR Port

Posted by [Neal Bridges](#) on August 14, 1999 at 22:06:51:

In Reply to: [Re: IR Port](#) posted by Jim Meadows on August 14, 1999 at 21:51:54:

> > > I was not real clear on which system call to use. Any help would be
> greatly

> > > appreciated. Thanks - Jim

Here's the relevant code:

```
needs serial
```

```
9 constant serCtlIrDAEnable  
10 constant serCtlIrDADisable
```

```
: SerControl ( &valueLenP. &valueP. op -- err )  
  43030 serSysTrap4n nip ;
```

```
: IrEnable ( -- err )  
  0. 0. serCtlIrDAEnable SerControl ;
```

```
: IrDisable ( -- err )  
  0. 0. serCtlIrDADisable SerControl ;
```

After a SerOpen, do IrEnable; before SerClose, do IrDisable. Should do the trick -- I haven't tested the code yet myself however. Let me know if there are problems.

Neal

- [Previous forum message about IR redirection](#)

Digging myself into a hole with CREATE and DOES>.

Posted by [E.](#) on August 10, 1999 at 09:52:21:

I'm working on something that needs a readout that looks like a 7-segment LCD display. I didn't think it would be good style to draw all 10 bitmaps, when they all have so much in common. So I figured I could have an array (0..9) of 7-bit values that I could pass to the word that actually draws the segments. Of course, I didn't stop there. I thought, for some reason (probably "hey, it's 4am, and this sounds like a good idea!") that it would be a good idea to have the drawing word check each bit in turn, and if that bit is set, OR the bits that result in that fake-LCD-segment with a blank bitmap, and (after all 7 bits were done) draw the now-not-blank bitmap. Making sense so far?

In the course of figuring out which bits would be lit, I made a test 8, so that I could see all the segments on. Because I'm not a COMPLETE idiot, I used Neal's bitmap library.

The problem I'm having is that I can't find the bitmap in memory. I got the xt of my test bitmap, did a >BODY on it, and started looking through memory. I found its dimensions (32x64), then a 4, then a string of 0s.

So, my questions are:

Am I looking in the wrong place? Did I just not look far enough to get past the

0s? If either of these are true, would this even be the best way to do it, or should I just keep an array of X/Y offsets and do draw-horiz/draw-vert at those offsets using WinDrawLine? That was my original plan, but doing it with bitmaps seems so much faster and like it would be "better" code.

Of course, I'm assuming that messing around inside the body of CREATED words doesn't automatically negate any "better"ness. :/

And I don't want to sound like a complete ingrate here, but a simple answer (as opposed to actual sample code) would be preferred. I'm writing this program only to try to improve my Palm and Forth skills (well, and so I have some source code to release; there are hitches with parts of the first app I wrote), so a pointer would help on this level too, whereas a solution wouldn't. Sorry.

-E (trying not to offend, seriously)

Re: Digging myself into a hole with CREATE and DOES>.

Posted by [Neal Bridges](#) on August 10, 1999 at 09:59:49:

In Reply to: [Digging myself into a hole with CREATE and DOES>.](#) posted by E. on August 10, 1999 at 09:52:21:

> The problem I'm having is that I can't find the bitmap in memory. I got the
> xt
> of my test bitmap, did a >BODY on it, and started looking
through
> memory. I found its dimensions (32x64), then a 4, then a string of 0s.

If the bitmap works, certainly it's in memory. However, I'd say that OR'ing the bits together in memory is a complex way to go about things -- clever, but unnecessary, and it means you are forcing a dependency on the bitmap format -- if you wanted to migrate to, say, colour at some later date, or if you wanted to provide an option for non-LCD-style digits, you'd have recoding to do. For ten digits, store ten bitmaps; it's simplest.

Neal

Re: Digging myelf into a hole with CREATE and DOES>.

Posted by [E.](#) on August 10, 1999 at 10:14:33:

In Reply to: [Re: Digging myelf into a hole with CREATE and DOES>.](#) posted by Neal Bridges on August 10, 1999 at 09:59:49:

> If the bitmap works, certainly it's in memory.

Well, yeah, but it's not necessarily in the place I'm looking. From my limited understanding of Forth internals, I figured it would be in the body, so that's where I went first.

> clever, but
> unnecessary,

The story of my life. :)

> and it means you are forcing a dependency on the bitmap format

I hadn't really considered this. This is a pretty trivial app, without much room for improvement.

> For ten digits, store ten bitmaps; it's simplest.

Check. Now I get to play around and try to store them all in the same memo.

Thanks.

-E

Re: Digging myelf into a hole with CREATE and DOES>.

Posted by [Neal Bridges](#) on August 10, 1999 at 10:17:24:

In Reply to: [Re: Digging myelf into a hole with CREATE and DOES>.](#) posted by E. on August 10, 1999 at 10:14:33:

> > If the bitmap works, certainly it's in memory.

> Well, yeah, but it's not necessarily in the place I'm looking. From my limited

> understanding of Forth internals, I figured it would be in the body, so that's

> where I went first.

It is in the body of the CREATE word.

> > and it means you are forcing a dependency on the bitmap format

> I hadn't really considered this. This is a pretty trivial app, without much

> room for improvement.

But you may well use the LCD module again in another app. And were it expanded to provide more than one font, that expansion would apply to your other apps as well.

> > For ten digits, store ten bitmaps; it's simplest.

> Check. Now I get to play around and try to store them all in the same memo.

> Thanks.

No problem. If they're fancy bitmaps I'd consider storing them as Tbmp resources. Have a look at *LCD.zip* in the File Area.

Neal

- [File Area](#)

Re: Digging myself into a hole with CREATE and DOES>.

Posted by [E.](#) on August 11, 1999 at 00:25:04:

In Reply to: [Re: Digging myself into a hole with CREATE and DOES>.](#) posted by Neal Bridges on August 10, 1999 at 10:17:24:

> It is in the body of the CREATE word.

Then I guess I didn't look far enough to get pas the 0s. Hrm.

> > This is a pretty trivial app, without much

> > room for improvement.

> But you may well use the LCD module again in another app.

True, but if I wanted an LCD module, I'd have the LCD numerals already there. In fact, I already decided to tone down the scope of the LCD display so that I could do it as 7 bits, instead of 9/11/13. I was trying to simplify.

> And were it expanded

> to provide more than one font, that expansion would apply to your other apps

> as well.

While I'm certainly not arguing its utility, it would be IMMENSE overkill for the application at hand.

> If they're fancy bitmaps I'd consider storing them as Tbmp

> resources.

To be honest, I decided against that because it seemed (again) far too complex for what I needed. Given relatively small and simple bitmaps, I'm going to choose the easy way out and use the bitmap library.

> Have a look at *LCD.zip* in the File Area.

Ah. This is what you use in Swatch, yes? Well, hm. Perhaps I should just bite the bullet and get familiar with Tbmps.

-E

Re: Digging myelf into a hole with CREATE and DOES>.

Posted by [Neal Bridges](#) on August 11, 1999 at 00:33:22:

In Reply to: [Re: Digging myelf into a hole with CREATE and DOES>.](#) posted by E. on August 11, 1999 at 00:25:04:

> > Have a look at *LCD.zip* in the File Area.

> Ah. This is what you use in Swatch, yes? Well, hm. Perhaps I should just bite

> the bullet and get familiar with Tbmps.

They're the same as bitmaps created via *bitmap.txt*, but living in resources rather than in dataspace.

Neal

Re: Digging myelf into a hole with CREATE and DOES>.

Posted by [E.](#) on August 11, 1999 at 01:36:20:

In Reply to: [Re: Digging myelf into a hole with CREATE and DOES>.](#) posted by Neal Bridges on August 11, 1999 at 00:33:22:

> > Well, hm. Perhaps I should just bite

> > the bullet and get familiar with Tbmps.

> They're the same as bitmaps created via *bitmap.txt*, but living in
> resources rather than in dataspace.

But from what I've seen on the forum here, using them is quite a bit different,

yes? I think it's the whole "dealng with resources" thing that I should learn. It's something that I think I'll need if I want to make non-trivial apps.

Of course, I have no idea WHEN, because I'm suddenly amazingly busy trying to track down a "trying to HotSync causes Fatal Exception" problem.

-E

Re: Digging myelf into a hole with CREATE and DOES>.

Posted by [E.](#) on August 10, 1999 at 09:54:20:

In Reply to: [Digging myelf into a hole with CREATE and DOES>.](#) posted by E. on August 10, 1999 at 09:52:21:

The problem, obviously, is that I shouldn't try to dig elves into holes.

Obviously, that was suppose to be "myself" in the topic. *sigh*

-E

Adding fields to a form at runtime

Posted by [Matthew Blair](#) on August 10, 1999 at 08:01:27:

Hi,

I've wrote a short program to add a field to a form. It works, insofar as I get a pointer to the field returned from FldNewField. However, I can't seem to display the field. What do I need to do after calling FldNewField?

Thanks,

Matthew Blair

Re: Adding fields to a form at runtime

Posted by [Neal Bridges](#) on August 10, 1999 at 09:42:06:

In Reply to: [Adding fields to a form at runtime](#) posted by Matthew Blair on August 10, 1999 at 08:01:27:

> I've wrote a short program to add a field to a form. It works,
> insofar as I get a pointer to the field returned from FldNewField.
> However, I can't seem to display the field. What do I need to do after
> calling FldNewField?

I haven't worked with dynamic fields; however FldDrawField should do it.

Neal

Re: Adding fields to a form at runtime

Posted by [Matthew Blair](#) on August 11, 1999 at 11:00:34:

In Reply to: [Re: Adding fields to a form at runtime](#) posted by Neal Bridges on August 10, 1999 at 09:42:06:

> > I've wrote a short program to add a field to a form. It works,
> > insofar as I get a pointer to the field returned from FldNewField.
> > However, I can't seem to display the field. What do I need to do after
> > calling FldNewField?

> I haven't worked with dynamic fields; however FldDrawField should do it.

> Neal

Just to follow up -- it turns out that I did not set the height of the field correctly. I changed the height to 20 pixels (from 10, which surprises me), and did a FrmDrawForm. It worked...

Thanks,

Matt

Newest RsrcEdit

Posted by [E. Ross Helton](#) on August 09, 1999 at 23:42:07:

Hi All;

Roger Lawrence has posted the newest version of RsrcEdit which is V1.003

At his sight:

Make it a good day!

Ross

- [RsrcEdit](#)

Forum LIST SERVER? anyone...

Posted by Yeshiah Mikhol on August 10, 1999 at 10:11:40:

In Reply to: [Newest RsrcEdit](#) posted by E. Ross Helton on August 09, 1999 at 23:42:07:

Have you thought of setting up a listserver with <http://www.listbot.com/> and modifying the forum script to CC: everything posted to this list group? and find a way that list replies also would get posted into the forum? That way people could keep up on current threads easier yet simply go to form to "BROWSE" or search the history.? I for one wouldnt care if the list simply sent forum posts and didnt allow post backs. I just would like to see an easier way to read it.

I think this may be a good idea?

Re: Forum LIST SERVER? anyone...

Posted by [Neal Bridges](#) on August 10, 1999 at 10:14:30:

In Reply to: [Forum LIST SERVER? anyone...](#) posted by Yeshiah Mikhol on August 10, 1999 at 10:11:40:

> Have you thought of setting up a listserver with <http://www.listbot.com/> and
> modifying the forum script to CC: everything posted to this list group? and
> find a way that list replies also would get posted into the forum? That way
> people could keep up on current threads easier yet simply go to form to
> "BROWSE" or search the history.? I for one wouldnt care if the list simply
> sent forum posts and didnt allow post backs. I just would like to see an
> easier way to read it.

How would it be easier?

> I think this may be a good idea?

Neal

Re: Forum LIST SERVER? anyone...

Posted by [Neal Bridges](#) on August 10, 1999 at 16:25:23:

In Reply to: [Re: Forum LIST SERVER? anyone...](#) posted by Neal Bridges on August 10, 1999 at 10:14:30:

> > Have you thought of setting up a listserver with <http://www.listbot.com/> and
> > modifying the forum script to CC: everything posted to this list group? and
> > find a way that list replies also would get posted into the forum? That way
> > people could keep up on current threads easier yet simply go to form to
> > "BROWSE" or search the history.? I for one wouldnt care if the list simply
> > sent forum posts and didnt allow post backs. I just would like to see an
> > easier way to read it.

> How would it be easier?

I have given some thought to this today. To simultaneously post each new message to a list server would deprive me of editorial control over the content of the group. Because this is a pleasantly civilized and interesting discussion group, I've never had to exercise that control, but I don't want to lose it.

Neal

Re: Forum LIST SERVER? anyone...

Posted by [Erwin Schomburg](#) on August 11, 1999 at 01:51:27:

In Reply to: [Re: Forum LIST SERVER? anyone...](#) posted by Neal Bridges on August 10, 1999 at 16:25:23:

> > > Have you thought of setting up a listserver with <http://www.listbot.com/>
> > > and
> > > modifying the forum script to CC: everything posted to this list group?
> > > and
> > > find a way that list replies also would get posted into the forum? That
> > > way
> > > people could keep up on current threads easier yet simply go to form to
> > > "BROWSE" or search the history.? I for one wouldnt care if the list
> > > simply
> > > sent forum posts and didnt allow post backs. I just would like to see an
> > > easier way to read it.

> > How would it be easier?

> I have given some thought to this today. To simultaneously post each new
> message to a list server would deprive me of editorial control over the
content
> of the group. Because this is a pleasantly civilized and interesting
discussion
> group, I've never had to exercise that control, but I don't want to lose it.
> Neal

In support of your intentions, NO forum mailing list, please!

May the Forth be with you!

/Erwin

Re: Forum LIST SERVER? anyone...

Posted by [E. Ross Helton](#) on August 11, 1999 at 10:11:17:

In Reply to: [Re: Forum LIST SERVER? anyone...](#) posted by Erwin Schomburg on
August 11, 1999 at 01:51:27:

Hi Neal;

> In support of your intentions, NO forum mailing list, please!

> May the Forth be with you!

> /Erwin

I also concur with Erwin, not forum mailing list!

Make it a good day!

Ross

Re: Forum LIST SERVER? anyone...

Posted by [Bob Cunningham](#) on August 11, 1999 at 13:14:20:

In Reply to: [Re: Forum LIST SERVER? anyone...](#) posted by E. Ross Helton on August
11, 1999 at 10:11:17:

I'd recommend a newserver/newsgroup instead, since it has several advantages:

1. Easy to moderate.
2. Very fast access (less overhead than HTTP).
3. Easy to maintain.
4. Users can archive articles locally (hard to do with WebBoard).
5. Users can still send HTML content (if needed), since most news readers now understand HTML (or interface directly with browsers).

I'd recommend Darrin Massena's Palm developer's news server as a very good example of how Palm development can be supported. His configuration never deletes any postings, so all past articles are just as accessible as the most recent postings.

-BobC

Re: Forum LIST SERVER? anyone...

Posted by [Neal Bridges](#) on August 12, 1999 at 00:24:41:

In Reply to: [Re: Forum LIST SERVER? anyone...](#) posted by Bob Cunningham on August 11, 1999 at 13:14:20:

> I'd recommend a newsserver/newsgroup instead, since it has several advantages:

Certainly something to consider, if I had a dedicated server on which to run it.

This forum serves the purpose more than adequately, so at the present time I'm not devoting a lot of energy to considering alternatives.

Neal

Forum LIST SERVER? anyone...

Posted by Yeshiah Mikhol on August 13, 1999 at 12:12:31:

In Reply to: [Re: Forum LIST SERVER? anyone...](#) posted by Neal Bridges on August 12, 1999 at 00:24:41:

It doesnt have to be 2-way. simply a CC: of posts in the cgi script to the list. Make reply's not possible. IT would make it easier for some like me to follow current threads who have more email access time than web access. Can read email in the work bathroom, not a web board.

also a simply CC: would only allow listed the same material posted on the web board. I dont understand why this is difficult nor lose of control. I certainly has not been so for my site.

In fact it is better than the newsgroup idea because you could keep the web board and I could get current posts emailed. thats All I want...

"shall I beg now?" :-)

Re: Forum LIST SERVER? anyone...

Posted by [Vadim Zaliva](#) on August 13, 1999 at 19:28:28:

In Reply to: [Forum LIST SERVER? anyone...](#) posted by Yeshiah Mikhol on August 13, 1999 at 12:12:31:

> It doesnt have to be 2-way. simply a CC: of posts in the cgi script to the
> list. Make reply's not possible. IT would make it easier for some like me to
> follow current threads who have more email access time than web access. Can
> read email in the work bathroom, not a web board.

> also a simply CC: would only allow listed the same material posted on the web
> board. I dont understand why this is difficult nor lose of control. I
certainly
> has not been so for my site.

> In fact it is better than the newsgroup idea because you could keep the web
> board and I could get current posts emailed. thats All I want...

> "shall I beg now?" :-)

I already asked for this.

I am very tired checking this page

each day to see if any new messages arrived.

I would rather receive all forum messages in mailbox.

Vadim

Re: Forum LIST SERVER? anyone...

Posted by [Neal Bridges](#) on August 13, 1999 at 12:30:46:

In Reply to: [Forum LIST SERVER? anyone...](#) posted by Yeshiah Mikhol on August 13, 1999 at 12:12:31:

What it would prevent is my deleting any inappropriate material, as by then it
would already have gone rolling out to the mailing list.

> In fact it is better than the newsgroup idea because you could keep the web
> board and I could get current posts emailed. thats All I want...

I understand your motiviation -- perhaps I can work something out in a digest
format. It's on my list.

Neal

Re: Forum LIST SERVER? anyone...

Posted by [Bob Cunningham](#) on August 14, 1999 at 04:04:35:

In Reply to: [Re: Forum LIST SERVER? anyone...](#) posted by Neal Bridges on August 13, 1999 at 12:30:46:

> What it would prevent is my deleting any inappropriate material, as by then
> it would already have gone rolling out to the mailing list.

> > In fact it is better than the newsgroup idea because you could keep the web
> > board and I could get current posts emailed. thats All I want...

> I understand your motivation -- perhaps I can work something out in a digest
> format. It's on my list.

It seems to me that no posts should be distributed to users unless and until requested, something both a web board and a news server are able to do. Email lists and their digest versions can easily send tons of drek, especially if someone accidentally adds a binary attachment instead of a URL.

If this logic is applied to the QF message archives (which now total about 2MB), then an on-line searchable archive (queried either via the Web or email) would also seem to be desirable.

I am willing to donate some of my home server resources (Win95, MS Personal Web Server, cable modem, P200, 64MB, 8GB, UPS) to hosting such a searchable archive resource. I have no expertise in this area, but would be glad to work with someone who does! "Plug&Play" solutions are desired, since stability and ease of use is desired over performance (reboots should be as fast as possible - this is Win95 after all). If possible, I'd like to host not only the existing archives (index and query), but also add and index new posts as they appear on the web board. Any recommendations?

The main limitations are: 1) The use of DHCP. I can certainly get an alias through DynDns.org or elsewhere, but the delayed name lookup may cause some users to timeout once in a while. 2) Monitored bandwidth. I'm on Time Warner's RoadRunner service, and though they do not put fixed limits on traffic, if uplink congestion appears, they will act to eliminate it. Other than that, my maximum upstream bandwidth is 750 Kbps, and my maximum downstream bandwidth is 10 Mbps.

Bottom line, I expect everything to go fine until the archive gets too popular, at which time either Win95 will blow up or my ISP will ask me to stop. My record for running Win95 without shutting it down for any reason is an impressive THREE MONTHS, so I think I'm running some adequate code. When doing software development, I do tend to reboot quite a bit, but it shouldn't be too noticable (users of my present web and FTP servers haven't said anything).

Heck, I'm even willing to shut down my Seti@Home client, both for CPU bandwidth and stability reasons.

Any takers?

pursuing a searchable QDF archive...

Posted by [Kip DeGraaf](#) on August 15, 1999 at 01:50:27:

In Reply to: [Re: Forum LIST SERVER? anyone...](#) posted by Bob Cunningham on August 14, 1999 at 04:04:35:

> If this logic is applied to the QF message archives (which now total about
> 2MB), then an on-line searchable archive (queried either via the Web or email)
> would also seem to be desirable.

Is there a desire by more than a few for this kind of service? I've debated about providing just such a service. Since I'm already hosting the archives as they are, I'm in a good position to add a search engine.

The box where the archives are housed is rather idle, so the CPU overhead in a search engine wouldn't be a bother.

I guess I would like to know two things. Are many people interested? Does anyone have a good search engine they would like to suggest?

No need to clutter the forum with your answers, just drop me some email and I'll summarize back here later.

Re: Forum LIST SERVER? anyone...

Posted by [Neal Bridges](#) on August 14, 1999 at 11:20:49:

In Reply to: [Re: Forum LIST SERVER? anyone...](#) posted by Bob Cunningham on August 14, 1999 at 04:04:35:

> > What it would prevent is my deleting any inappropriate material, as by then
> > it would already have gone rolling out to the mailing list.

> > > In fact it is better than the newsgroup idea because you could keep the
web

> > > board and I could get current posts emailed. thats All I want...

> > I understand your motivation -- perhaps I can work something out in a
digest

> > format. It's on my list.

...
> If this logic is applied to the QF message archives (which now total about
> 2MB), then an on-line searchable archive (queried either via the Web or email)
> would also seem to be desirable.

...

This all sounds nifty, but I question the need for such a top-heavy solution. The current discussion forum software isn't super-flexible, but it's certainly adequate. As I say, it's on my list to revamp it.

Now, if you'd like to independently index the archives, I could see that as being quite useful. Or, perhaps, to identify useful tips for the FAQ and snippets for collection in the Snippets file area -- that'd be very handy, and immediately useful.

Neal

Re: Forum LIST SERVER? anyone...

Posted by [Bob Cunningham](#) on August 15, 1999 at 01:45:57:

In Reply to: [Re: Forum LIST SERVER? anyone...](#) posted by Neal Bridges on August 14, 1999 at 11:20:49:

> ...
> > ... an on-line searchable archive (queried either via the Web or email)
> > would also seem to be desirable.
> ...

> Now, if you'd like to independently index the archives, I could see that as
> being quite useful.

I can offer CPU, storage and connectivity. I haven't much of a clue about CGI, ASP or anything else to do with server-side stuff. If anyone knows of a "simple" solution (maybe a Perl server+indexer?), then I'd be glad to host it.

Re: Forum LIST SERVER? anyone...

Posted by Yeshiah Mikhol on August 13, 1999 at 16:02:15:

In Reply to: [Re: Forum LIST SERVER? anyone...](#) posted by Neal Bridges on August 13, 1999 at 12:30:46:

> What it would prevent is my deleting any inappropriate material, as by then
> it
> would already have gone rolling out to the mailing list.

> > In fact it is better than the newsgroup idea because you could keep the web
> > board and I could get current posts emailed. thats All I want...

> I understand your motivation -- perhaps I can work something out in a digest
> format. It's on my list.

> Neal

Now there we are. That I like. Thanks.

Trying to find time to sort through this wealth of information is not easy.

Re: Forum LIST SERVER? anyone...

Posted by [E. Ross Helton](#) on August 12, 1999 at 09:05:22:

In Reply to: [Re: Forum LIST SERVER? anyone...](#) posted by Neal Bridges on August 12, 1999 at 00:24:41:

Hi Neal,

Not only has this forum be very great in its service, it has helped some of us who are on the very down side of the Forth learning curve, to get a good handle on things.

This one of the few forums that allows real help to be received. I have had questions to ask at other places and not only was it hard to get the question asked, it sometimes took forever to get an answer. And sometimes some of the answers given were worse than the problem I was having.

That isn't true here. If a question, is posed it gets answered. Sometimes by several people. The key is that it is always a good answer. Many contribute to the answers and that makes for a good mix.

Of course Neal, you are always there to help! That is fantastic! Not many boards get such first hand help directly from the source.

Thanks! Many Thanks!

> This forum serves the purpose more than adequately, so at the present time I'm
> not devoting a lot of energy to considering alternatives.

make it a good day!

Ross

New Discussion Forum opened

Posted by [Neal Bridges](#) on August 09, 1999 at 23:23:59:

I've opened a daVinci discussion forum, as part of the ongoing enhancements. It's for questions, comments, and discussion specific to Quartus daVinci products. There's a link at the top of the Quartus Palm Discussion Forum page, and it'll be even better connected shortly.

Neal

For Mac Users: The Text to Palm™ Desktop conversion utility.

Posted by [Neal Bridges](#) on August 09, 1999 at 18:45:47:

From Brian Beeler (Thanks Brian!):

I've tossed together a Mac application to make it easy for users of Quartus Forth to import library modules. Currently each one has to be "cut and pasted" into the Palm Desktop application one at a time. This program compiles all the files into one for easy import. It's free for personal use and to Quartus Forth users. You can get more info at: www.pobox.com/~bwcsw/ttc/index.html. It should make life easier for Mac users.

- [The Text to Palm™ Desktop conversion utility.](#)

Re: For Mac Users: The Text to Palm™ Desktop conversion utility.

Posted by [Joe Meehan](#) on August 10, 1999 at 00:19:21:

In Reply to: [For Mac Users: The Text to Palm™ Desktop conversion utility.](#) posted by Neal Bridges on August 09, 1999 at 18:45:47:

Thanks, Brian! This is a wonderful idea, and much needed.

> From Brian Beeler (Thanks Brian!):

>

> I've tossed together a Mac application to make it easy for users of
> Quartus Forth to import library modules. Currently each one has to
> been "cut and pasted" into the Palm Desktop application one at a
> time. This program compiles all the files into one for easy import.
> It's free for personal use and to Quartus Forth users. You can get
> more info at: www.pobox.com/~bwcsw/ttc/index.html. It should make
> life easier
> for Mac users.
>

New Palm Clone -- OSPRO Personal Digital Assistant

Posted by [Neal Bridges](#) on August 09, 1999 at 14:32:19:

A new Palm clone has appeared -- link below. It claims Palm compatibility and doubtless is running the Palm OS; if anyone runs across one I'd appreciate feedback on how Quartus Forth (in particular) runs on it.

Neal

- [OSPRO Personal Digital Assistant](#)

Re: New Palm Clone -- OSPRO Personal Digital Assistant

Posted by [sysadmn](#) on August 17, 1999 at 15:00:14:

In Reply to: [New Palm Clone -- OSPRO Personal Digital Assistant](#) posted by Neal Bridges on August 09, 1999 at 14:32:19:

> A new Palm clone has appeared -- link below. It claims Palm compatibility and
> doubtless is running the Palm OS; if anyone runs across one I'd appreciate
> feedback on how Quartus Forth (in particular) runs on it.

> Neal

I very much doubt it's running Palm OS. If it were, it would advertise Graffiti{TM} recognition, not "FineART". I tried to download the user manual, but it's not a valid link. I suspect the Palm compatibility means one of the programs outputs CSV files :-).

Re: New Palm Clone -- OSPRO Personal Digital Assistant

Posted by [Neal Bridges](#) on August 17, 1999 at 15:06:19:

In Reply to: [Re: New Palm Clone -- OSPRO Personal Digital Assistant](#) posted by sysadmn on August 17, 1999 at 15:00:14:

> > A new Palm clone has appeared -- link below. It claims Palm compatibility and
> > doubtless is running the Palm OS; if anyone runs across one I'd appreciate
> > feedback on how Quartus Forth (in particular) runs on it.

> I very much doubt it's running Palm OS. If it were, it would advertise
> Graffiti{TM} recognition, not "FineART". I tried to download the user manual,
> but it's not a valid link. I suspect the Palm compatibility means one of the
> programs outputs CSV files :-).

From what I've learned it is in fact running a licensed version of the Palm OS
-- the Graffiti recognition software is separately licensed, and it appears
they're using FineART instead.

Neal

Re: New Palm Clone -- OSPRO Personal Digital Assistant

Posted by [Dave Bennett](#) on August 17, 1999 at 16:44:31:

In Reply to: [Re: New Palm Clone -- OSPRO Personal Digital Assistant](#) posted by
Neal Bridges on August 17, 1999 at 15:06:19:

> > > A new Palm clone has appeared -- link below. It claims Palm compatibility
> > and
> > > doubtless is running the Palm OS; if anyone runs across one I'd appreciate
> > > feedback on how Quartus Forth (in particular) runs on it.

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> > Graffiti{TM} recognition, not "FineART". I tried to download the user
manual,
> > but it's not a valid link. I suspect the Palm compatibility means one of
the
> > programs outputs CSV files :-).

> From what I've learned it is in fact running a licensed version of the Palm OS
> -- the Graffiti recognition software is separately licensed, and it appears
> they're using FineART instead.

FineART is listed in the Options area of the page...

--

Dave

Re: New Palm Clone -- OSPRO Personal Digital Assistant

Posted by [Erwin Schomburg](#) on August 09, 1999 at 16:44:10:

In Reply to: [New Palm Clone -- OSPRO Personal Digital Assistant](#) posted by Neal Bridges on August 09, 1999 at 14:32:19:

> A new Palm clone has appeared -- link below. It claims Palm compatibility and
> doubtless is running the Palm OS; if anyone runs across one I'd appreciate
> feedback on how Quartus Forth (in particular) runs on it.

> Neal

I wonder how far they get with a lithium cell usually employed as a backupbattery in case the real juice source fails as the main and sole power source. Low power RISK processor? No info on the page so far.

/Erwin

Oh, they don't know themselves, its two AAA at another place of the description. Flakey?

/Erwin

Re: New Palm Clone -- OSPRO Personal Digital Assistant

Posted by [Neal Bridges](#) on August 09, 1999 at 16:50:16:

In Reply to: [Re: New Palm Clone -- OSPRO Personal Digital Assistant](#) posted by Erwin Schomburg on August 09, 1999 at 16:44:10:

> I wonder how far they get with a lithium cell usually employed as a
> backupbattery in case the real juice source fails as the main and sole power
> source. Low power RISK processor? No info on the page so far.

> Oh, they don't know themselves, its two AAA at another place of the
description.
> Flakey?

The site looks like it's been rapidly put together. I assume the have exactly the same processor as does the Palm.

Neal

Re: New Palm Clone -- OSPRO Personal Digital Assistant

Posted by [Erwin Schomburg](#) on August 09, 1999 at 16:40:46:

In Reply to: [New Palm Clone -- OSPRO Personal Digital Assistant](#) posted by Neal Bridges on August 09, 1999 at 14:32:19:

> A new Palm clone has appeared -- link below. It claims Palm compatibility and
> doubtless is running the Palm OS; if anyone runs across one I'd appreciate
> feedback on how Quartus Forth (in particular) runs on it.

> Neal

I wonder how far they get with a lithium cell usually employed as a backupbattery in case the real juice source fails as the main and sole power source. Low power RISK processor? No info on the page so far.

/Erwin

Re: New Palm Clone -- OSPRO Personal Digital Assistant

Posted by [sysadmn](#) on August 17, 1999 at 15:02:19:

In Reply to: [Re: New Palm Clone -- OSPRO Personal Digital Assistant](#) posted by Erwin Schomburg on August 09, 1999 at 16:40:46:

> I wonder how far they get with a lithium cell usually employed as a
> backupbattery in case the real juice source fails as the main and sole power
> source. Low power RISK processor? No info on the page so far.

No, main page claims 2AA batteries. The specs lower down mention the CR2032 only.

turtle confusion

Posted by [Dave Bennett](#) on August 09, 1999 at 11:51:32:

Will someone explain what these two programs produce completely different results? Thanks.

Prog 1

```
include turtle
: t1 30 10 drawto ;
: t2 20 70 drawto ;
: t3 30 10 goto 20 70 drawto ;
1001 showform ( blank form)
turtle t1 key drop
turtle t2 key drop
turtle t3 key drop
```

Prog 2

```
include turtle
1001 showform ( blank form)
turtle
30 10 drawto
20 70 drawto
30 10 goto
20 70 drawto
```

Thanks.

Re: turtle confusion

Posted by [Csabo](#) on August 09, 1999 at 12:32:40:

In Reply to: [turtle confusion](#) posted by Dave Bennett on August 09, 1999 at 11:51:32:

Hi Dave,

When you call 'turtle' it clears the screen and resets the coordinates to 0,0 (or 80,80 = middle of the screen). 'goto x y' goes to 80+x,80+y which is 180 degrees opposite of 'drawto x y'. So you two programs draw the following:

```
[Prog 1]
> include turtle
> : t1 30 10 drawto ;
> : t2 20 70 drawto ;
> : t3 30 10 goto 20 70 drawto ;
> 1001 showform ( blank form)
```

```
> turtle t1 key drop \ clear; 80,80 -> 10,30
> turtle t2 key drop \ clear; 80,80 -> 70,20
> turtle t3 key drop \ clear; 80+30,80+10 -> 70,20 ; only line on screen
```

```
[Prog 2]
> include turtle
> 1001 showform ( blank form)
> turtle \ clear
> 30 10 drawto \ 80,80 -> 10,30
> 20 70 drawto \ 10,30 -> 70,20
> 30 10 goto
> 20 70 drawto \ 80+30,80+10 -> 70,20 ; almost a triangle.
```

Did this help?

Csabo

Re: turtle confusion

Posted by [Dave Bennett](#) on August 09, 1999 at 15:18:27:

In Reply to: [Re: turtle confusion](#) posted by Csabo on August 09, 1999 at 12:32:40:

> Hi Dave,

> When you call 'turtle' it clears the screen and resets the coordinates to 0,0
> (or 80,80 = middle of the screen). 'goto x y' goes to 80+x,80+y which is 180
> degrees opposite of 'drawto x y'. So you two programs draw the following:

```
>
> [Prog 1]
> > include turtle
> > : t1 30 10 drawto ;
> > : t2 20 70 drawto ;
> > : t3 30 10 goto 20 70 drawto ;
> > 1001 showform ( blank form)
> > turtle t1 key drop \ clear; 80,80 -> 10,30
> > turtle t2 key drop \ clear; 80,80 -> 70,20
> > turtle t3 key drop \ clear; 80+30,80+10 -> 70,20 ; only line on screen
```

Actually, there is only ever one line on the screen at a time. It seems that invoking "turtle" causes the screen to be cleared before the subsequent operation is performed. That is probably what was confusing me more than anything else.

```
> [Prog 2]
> > include turtle
> > 1001 showform ( blank form)
> > turtle \ clear
> > 30 10 drawto \ 80,80 -> 10,30
> > 20 70 drawto \ 10,30 -> 70,20
```

```
> > 30 10 goto
> > 20 70 drawto \ 80+30,80+10 -> 70,20 ; almost a triangle.
>
```

This one I pretty much followed.

> Did this help?

Yup. Thanks.

> Csabo

Re: turtle confusion

Posted by [Csabo](#) on August 09, 1999 at 15:52:52:

In Reply to: [Re: turtle confusion](#) posted by Dave Bennett on August 09, 1999 at 15:18:27:

Hi Dave,

```
> Actually, there is only ever one line on the screen at a time. It seems that
> invoking "turtle" causes the screen to be cleared before the subsequent
> operation is performed. That is probably what was confusing me more than
> anything else.
```

You are right. Actually, this was what I wrote in my reply as the first sentence: "When you call 'turtle' it clears the screen and..." If you take a look at the definition of the word, you can see it for yourself:

```
: turtle page 0 angle ! 0 dup goto black ;
```

page takes care of clearing the screen. So if you just want to reset the coordinates without clearing the screen, you can define a word for yourself (same as above, but without the 'page').

Take care,

Csabo

One more question on my simple learning exercise...

Posted by [Matthew Blair](#) on August 09, 1999 at 07:52:48:

Hi all,

As you may remember, I am working on a simple application with one form which accepts an integer and computes its factorial. I keep running into Fatal Exception errors when I try to update the label with the factorial. Please see my code below. I've marked off where I think the problem is.

Any suggestions appreciated!

Thanks,

Matt

```
\ testapp 1999-07-26 mpb
```

```
needs ids
```

```
needs resources
```

```
needs Events
```

```
needs Fields
```

```
needs Forms
```

```
\ Defines u! ( u -- ufact )
```

```
needs factorial
```

```
(ID) hiwa (ID) rsrc use-resources
```

```
1001 constant Testform ( Form ID )
```

```
1201 constant intgr ( integer Field ID )
```

```
1202 constant cmpt ( Compute Button ID )
```

```
1205 constant faclbl ( Factorial Label ID )
```

```
create temp 5 cells allot
```

```
: show-panel ( -- )
```

```
Testform ShowForm ;
```

```
: HideObject ( id -- )
```

```
GetObjectIndex
```

```
FrmGetActiveForm FrmHideObject ;
```

```
: ShowObject ( id -- )
```

```
GetObjectIndex
```

```
FrmGetActiveForm FrmShowObject ;
```

```
: ChangeLabel ( &zstring. id -- )
```

```
dup dup >r HideObject
```

```
FrmGetActiveForm FrmCopyLabel
```

```
r> ShowObject ;
```

```
: do-event ( ekey -- )
  ctlSelectEvent = if
    event >abs itemid
    dup cmpt = if
\ Get the integer and store to temp
  temp intgr Field>string
\ Convert the string to a number
  0 s>d rot temp swap
  >number
\ Drop the len, addr, and higher-order cell
\ and compute the factorial
  2drop drop u!
\ Convert to double-cell then a string
  s>d <# #s #>
\ Zero-terminate the string
  over + 0 swap c!
\ Change the label to the string
  faclbl ChangeLabel
  then
  drop
then ;

\ main entry point
: go
show-panel
begin ekey do-event  again ;
```

Re: One more question on my simple learning exercise...

Posted by [Csabo \(the newbie, attempting to answer a question\)](#) on August 09, 1999 at 10:31:45:

In Reply to: [One more question on my simple learning exercise...](#) posted by Matthew Blair on August 09, 1999 at 07:52:48:

Hi Matthew,

After you convert the string to zstring, the address is on the stack, but the FrmCopyLabel sysstraps needs and absolute (32bit) address. So insert an >abs below:

```
> \ Zero-terminate the string
> over + 0 swap c! ***
> \ Change the label to the string
```

> faclbl ChangeLabel

The rest is fine. :-)

Also (design question) you may want to use an edit field (marked as read-only) instead of a label, so your users can copy the result to the clipboard.

Csabo

Re: One more question on my simple learning exercise...

Posted by [Matthew Blair \(kicking himself\)](#) on August 09, 1999 at 11:30:41:

In Reply to: [Re: One more question on my simple learning exercise...](#) posted by Csabo (the newbie, attempting to answer a question) on August 09, 1999 at 10:31:45:

Hmmm, this sounds suspiciously like the same answer to the a question I asked a few short weeks ago :) Hmm, I know why! I did ask this exact same question a few weeks ago!

Excuse me while I crawl into a corner... :)

Thanks for your help,

Matt

> Hi Matthew,

> After you convert the string to zstring, the address is on the stack, but the
> FrmCopyLabel sysstraps needs and absolute (32bit) address. So insert an >abs
> below:

```
> > \ Zero-terminate the string  
> > over + 0 swap c! ***  
> > \ Change the label to the string  
> > faclbl ChangeLabel
```

> The rest is fine. :-)

> Also (design question) you may want to use an edit field (marked as read-only)
> instead of a label, so your users can copy the result to the clipboard.

> Csabo

Re: One more question on my simple learning exercise...

Posted by [Csabo](#) on August 09, 1999 at 11:48:52:

In Reply to: [Re: One more question on my simple learning exercise...](#) posted by Matthew Blair (kicking himself) on August 09, 1999 at 11:30:41:

> Excuse me while I crawl into a corner... :)

Don't sweat it buddy!

> Thanks for your help,

You are welcome! I'm surprised and proud that I could help. :-)

Csabo

Hip Hip Array!

Posted by [Trevor Steele](#) on August 09, 1999 at 05:29:57:

Hi folks

If the problem below has been encountered before I apologise for repeating, but I'm a relative newcomer to the forum.

I was having some fun using the array word in \ toolkit which works beautifully until you try some large arrays.

I kept getting fatal exceptions on my Palm III when using arrays of 200 elements or more and I believe the problem lies in the fact that the array word trys to 0 fill the array before the array space has been allocated. The following small change seems to cure the problem

```
: array ( cells -- )
create cells here over allot swap
0 fill does> swap cells + ;
```

Also many thanks to Erwin for the advice on getting memos into POSE!

Regards to all

Trevor

Re: Hip Hip Array!

Posted by [Neal Bridges](#) on August 09, 1999 at 06:27:59:

In Reply to: [Hip Hip Array!](#) posted by Trevor Steele on August 09, 1999 at 05:29:57:

> If the problem below has been encountered before I appologise for repeating,
> but I'm a relative newcomer to the forum.

Thanks for the report. In fact I did find that bug a couple of days ago; we discussed it here. I'll be making the change in the library file & distribution, and sending out an e-mail update to registered users.

Neal

Arguing with ALLOCATE

Posted by [Carl Jacobsen](#) on August 08, 1999 at 22:58:57:

I'm writing some code that uses ALLOCATE to build some interesting data structures. My first call to ALLOCATE, requesting 78 bytes, returns 1070, and I can successfully store what I want there. My second call to ALLOCATE, requesting 384 bytes, returns -2844 (a.k.a. 62692), which should still be within range (right?), and the code in memory.txt has done various things to validate that this number is legit (right?). With this -2844 on top of the stack, "go" (which is packed full of testing code) does: 0 SWAP ! and gets the error: go? Invalid memory address

Any ideas? I'd post code, but I'm on the way somewhere, and I'll need to whittle the code done a *lot* to get a reasonable snippet.

I wandered in here last night to ask this, but got so traumatized by the scenery change that had I flee :-)

Thanks,
-- Carl

"And then winter came, and they were forced to eat Robin's minstrels, and there was much rejoicing..."

Re: Arguing with ALLOCATE

Posted by [Neal Bridges](#) on August 09, 1999 at 00:48:48:

In Reply to: [Arguing with ALLOCATE](#) posted by Carl Jacobsen on August 08, 1999 at 22:58:57:

```
> I'm writing some code that uses ALLOCATE to build some interesting
> data structures. My first call to ALLOCATE, requesting 78 bytes,
> returns 1070, and I can successfully store what I want there. My
> second call to ALLOCATE, requesting 384 bytes, returns -2844
> (a.k.a. 62692), which should still be within range (right?), and
> the code in memory.txt has done various things to validate that
> this number is legit (right?). With this -2844 on top of the stack,
> "go" (which is packed full of testing code) does: 0 SWAP !
> and gets the error: go? Invalid memory address
```

Are you running *safe*? Try it without.

```
> Any ideas? I'd post code, but I'm on the way somewhere, and I'll need
> to whittle the code done a lot to get a reasonable snippet.
```

```
> I wandered in here last night to ask this, but got so traumatized by
> the scenery change that had I flee :-)
```

It's friendly and green again now :)

Neal

Re: Arguing with ALLOCATE

Posted by [Carl Jacobsen](#) on August 09, 1999 at 02:31:56:

In Reply to: [Re: Arguing with ALLOCATE](#) posted by Neal Bridges on August 09, 1999 at 00:48:48:

```
> > I'm writing some code that uses ALLOCATE to build some interesting
> > data structures. My first call to ALLOCATE, requesting 78 bytes,
> > returns 1070, and I can successfully store what I want there. My
> > second call to ALLOCATE, requesting 384 bytes, returns -2844
> > (a.k.a. 62692), which should still be within range (right?), and
> > the code in memory.txt has done various things to validate that
> > this number is legit (right?). With this -2844 on top of the stack,
> > "go" (which is packed full of testing code) does: 0 SWAP !
> > and gets the error: go? Invalid memory address
```

```
> Are you running safe? Try it without.
```

Wow, Neal, you da man! Yes, *safe* was on, and taking it out just caused zillions of lines of (my) debugging output to scroll across the screen :-) Success!

Does this classify as a bug in *safe*, or just a necessary shortcoming? (What *is* it, anyway?)

> > I wandered in here last night to ask this, but got so traumatized by
> > the scenery change that had I flee :-)

>
> It's friendly and green again now :)

Thanks, hope I didn't cause too much of a drunken scene in here last night, I have these weird dream memories of getting up on a table and shouting "give me green backgrounds or give me Cobol", or something like that... :-)

-- Carl

Re: Arguing with ALLOCATE

Posted by [Neal Bridges](#) on August 09, 1999 at 06:25:15:

In Reply to: [Re: Arguing with ALLOCATE](#) posted by Carl Jacobsen on August 09, 1999 at 02:31:56:

> > Are you running *safe*? Try it without.

> Wow, Neal, you da man! Yes, *safe* was on, and taking it out
> just caused zillions of lines of (my) debugging output to scroll across
> the screen :-) Success!

> Does this classify as a bug in *safe*, or just a necessary
> shortcoming? (What *is* it, anyway?)

It's not a bug as such -- under normal conditions addresses shouldn't be negative, and *safe* checks for that. If I remove that check, *safe* becomes weaker in the more common circumstance. You can easily modify *safe* to permit negative addresses -- let me know if you need the exact modification.

> > > I wandered in here last night to ask this, but got so traumatized by
> > > the scenery change that had I flee :-)

> >
> > It's friendly and green again now :)

> Thanks, hope I didn't cause too much of a drunken scene in here last night,
> I have these weird dream memories of getting up on a table and shouting
> "give me green backgrounds or give me Cobol", or something like that... :-)

Glad I could save you from COBOL. :)

Neal

THE COLOR CHANGED!

Posted by [Carl Jacobsen](#) on August 08, 1999 at 01:29:11:

It's not that comforting pastel green any more!

You shouldn't go making these drastic changes without giving us lots of advance warning, in a calm soothing voice...

Maybe you could set up a support group for us?

I'm scared :-0

-- Carl

Re: THE COLOR CHANGED!

Posted by [E. Ross Helton](#) on August 09, 1999 at 10:17:59:

In Reply to: [THE COLOR CHANGED!](#) posted by Carl Jacobsen on August 08, 1999 at 01:29:11:

Hi All

Sorry to disagree with you all, but the marbel and light was much better than the green.

Maybe a light blue would be even better.

Make it a good day!

Ross

Re: THE COLOR CHANGED!

Posted by [Neal Bridges](#) on August 09, 1999 at 18:53:57:

In Reply to: [Re: THE COLOR CHANGED!](#) posted by E. Ross Helton on August 09, 1999 at 10:17:59:

> Sorry to disagree with you all, but the marbel and light was much better than
> the green.

> Maybe a light blue would be even better.

Thanks for the feedback. I'm testing a few schemes.

Neal

Re: THE COLOR CHANGED!

Posted by [Neal Bridges](#) on August 08, 1999 at 01:38:10:

In Reply to: [THE COLOR CHANGED!](#) posted by Carl Jacobsen on August 08, 1999 at 01:29:11:

> It's not that comforting pastel green any more!

You found it comforting? I always thought it was an unfortunate sort of green colour. However, I note your reaction. Is it distressing anyone else that the green is gone?

> You shouldn't go making these drastic changes without giving us
> lots of advance warning, in a calm soothing voice...

> Maybe you could set up a support group for us?

> I'm scared :-0

Stay out of the woods.

Neal

Re: THE COLOR CHANGED!

Posted by [Neal Bridges](#) on August 08, 1999 at 01:54:05:

In Reply to: [Re: THE COLOR CHANGED!](#) posted by Neal Bridges on August 08, 1999 at 01:38:10:

> > It's not that comforting pastel green any more!

Ah, multiple appeals have swayed me; the green is back, for now. Stay tuned.

Neal

Re: THE COLOR CHANGED!

Posted by [Al Thomas](#) on August 08, 1999 at 10:16:17:

In Reply to: [Re: THE COLOR CHANGED!](#) posted by Neal Bridges on August 08, 1999 at 01:54:05:

> > > It's not that comforting pastel green any more!

> Ah, multiple appeals have swayed me; the green is back, for now. Stay tuned.

> Neal

Under 'customer support' in the next OED, I'm proposing the entry "See NAB, Quartus Forth".

As I teeter on the brink of my 0x31 birthday, I've got to vote for the green Neal. The proposed change was just not good on these elderly eyes (which are exposed to these pages on a daily basis). The texture, in particular, seems to make it difficult to extract the text.

Thanks for all that you do here. It's consistently first class.

Re: THE COLOR CHANGED!

Posted by [Neal Bridges](#) on August 08, 1999 at 12:00:26:

In Reply to: [Re: THE COLOR CHANGED!](#) posted by Al Thomas on August 08, 1999 at 10:16:17:

> > > > It's not that comforting pastel green any more!

> > Ah, multiple appeals have swayed me; the green is back, for now. Stay tuned.

> > Neal

> Under 'customer support' in the next OED, I'm proposing the entry "See NAB, Quartus Forth".

> As I teeter on the brink of my 0x31 birthday, I've got to vote for the green Neal. The proposed change was just not good on these elderly eyes (which are exposed to these pages on a daily basis). The texture, in particular, seems to make it difficult to extract the text.

> Thanks for all that you do here. It's consistently first class.

Thanks, Al. Very kind words.

My eyes weren't too good at reading long stretches of text against that texture either. I've put the marble under the rest of the site's pages with better results, I think.

Neal

A new look

Posted by [Neal Bridges](#) on August 08, 1999 at 01:19:22:

Hi folks. I've changed the site's look somewhat, as a first step to revamping the entire site.

The current site has grown over time to what it is today; soon all that will be deleted and replaced with better things. :)

Neal

MineSweeper source

Posted by [Csabo](#) on August 07, 1999 at 01:46:51:

Hi everyone,

I have finished(?) my first program in Quartus Forth, as I mentioned before it's the classic MineSweeper game. So if anyone is interested in checking it out, read on...

You can download the 4 text files from www.actepro.com/palm. "graphics-ext" is a couple of general graphics routines. "ms1" is dealing with the board and game logic, and "ms2" contains all the 'drawing' words. At least I intended to separate them this way, but it got a little messy. "ms3" is the main loop and event handling. There is a lot of things to be done still. Any volunteers? ;-)

- Make a couple of forms, so the game is actually in a "loop" and you can restart after a game over (for now, just select Abort from the Quartus menus and then "go" again).
- Let the user choose the board size and number of bombs. With that "block-size" should adjust automatically.
- Add timer, keep and save high scores.
- Fix up graphics (especially the rendering of the 'bomb' image).
- The board (and also one 'block') is always a square (for now). Change it so that it supports any size board and block. Also, in all the graphics routines, screen coordinates are calculated simply by: $y,x \rightarrow y * \text{board-width}, x * \text{board-width}$. It should add another variables to both coordinates, though, something like 'corner-x' and 'corner-y'. Those variables would contain 0 if the board fills the whole screen, but if the board is smaller, they would ensure that the board is centered. (Right? ;-)

In general: Thanks for everyone for their help. This forum and the 'community' is great. Also: all the code is public domain, do whatever you want with it.

Neal: Do you think (if we fix it up) this little game may be worthy to add to the Forth File area? Who knows, someone may actually learn something from it, or even *play* with it!

Any comments are welcome. Thanks,

Csabo

Re: MineSweeper source

Posted by [Csabo](#) on August 07, 1999 at 01:49:03:

In Reply to: [MineSweeper source](#) posted by Csabo on August 07, 1999 at 01:46:51:

Neal,

As Erwin pointed it out, the clickable link didn't show up at the bottom. What did we do wrong? Anyway here it is:

www.actepro.com/palm

Csabo

Re: MineSweeper source

Posted by [Neal Bridges](#) on August 07, 1999 at 01:56:31:

In Reply to: [Re: MineSweeper source](#) posted by Csabo on August 07, 1999 at 01:49:03:

> Neal,

> As Erwin pointed it out, the clickable link didn't show up at the bottom. What

> did we do wrong? Anyway here it is:

> www.actepro.com/palm

You need to also include a Link Title. I've put it in, below. Note -- ms1.txt, ms2.txt and ms3.txt aren't retrievable just yet -- possibly a permissions problem?

Neal

- [Minesweeper Source](#)

Re: MineSweeper source

Posted by [Csabo](#) on August 07, 1999 at 09:25:55:

In Reply to: [Re: MineSweeper source](#) posted by Neal Bridges on August 07, 1999 at 01:56:31:

> You need to also include a Link Title. I've put it in, below. Note --
ms1.txt,
> ms2.txt and ms3.txt aren't retrievable just yet -- possibly a permissions
> problem?

Oh, that's why. The files are there, but with uppercase names... I was too tired last night... I'm fixing it now.

Csabo

Re: MineSweeper source

Posted by [E. Ross Helton](#) on August 07, 1999 at 13:25:27:

In Reply to: [Re: MineSweeper source](#) posted by Csabo on August 07, 1999 at 09:25:55:

Hi Csabo;

Downloaded and put your files on my pilot. Ran the program, a beautiful tile board came up and then was replaced by some scrolling '10s' and an occasional '<110>' and that is all it does on my pilot.

Just thought you would like to know.

Already have a graphics-ext on my Pilot. so rename yours to 'graph-ext' and made the appropriate changes elsewhere.

Thought this might have been it erased the 'graphics-ext' that I had and reloaded your files as you had them -- same results

Make it a good day!

Ross

Re: MineSweeper source

Posted by [Csabo](#) on August 07, 1999 at 19:29:36:

In Reply to: [Re: MineSweeper source](#) posted by E. Ross Helton on August 07, 1999 at 13:25:27:

> Dowloaded and put your files on my pilot. Ran the program, a beautiful tile
> board came up and then was replaces by some scrolling '10s' and an
occassionaly
> '<110>' and that is all it does on my pilot.

You probably have to install the 'WinSetPattern' bug fix. Neal posted it earlier. It leaves a cell on the stack. The main loop displays the contents of the stack if not empty (which it should be!)

Csabo

Re: MineSweeper source

Posted by [Erwin Schomburg](#) on August 07, 1999 at 03:26:05:

In Reply to: [Re: MineSweeper source](#) posted by Neal Bridges on August 07, 1999 at 01:56:31:

> > Neal,

> > As Erwin pointed it out, the clickable link didn't show up at the bottom.

> What

> > did we do wrong? Anyway here it is:

> > www.actepro.com/palm

> You need to also include a Link Title. I've put it in, below. Note --
ms1.txt,

> ms2.txt and ms3.txt aren't retrievable just yet -- possibly a permissions
> problem?

> Neal

It needs a fully qualified link (<http://.....>) *and* a title. I was not awake enough to realize/remember when I posted below.

/Erwin

word, parse, accept and all that

Posted by [Matthew Burke](#) on August 06, 1999 at 20:40:15:

OK, I know I'm missing something here.

I want to use ACCEPT to grab some text from the user and then parse it using WORD or PARSE (or maybe parse-word) but as far as I can tell they automatically look for their text to work on in the input buffer---which I can't find! If I could, I could put it's address on the stack and use ACCEPT.

I thought SOURCE would do the trick, but no joy so far. Anyway, just for examples sake, I'd like to do something like:

```
variable #buffer
here #buffer !
: countwords #buffer 80 accept
bl word count
over 0= if ." You didn't enter anything." cr
else ." the first word you typed was: " type cr then ;
```

Help, please.

Re: word, parse, accept and all that

Posted by [Neal Bridges](#) on August 06, 1999 at 20:47:43:

In Reply to: [word, parse, accept and all that](#) posted by Matthew Burke on August 06, 1999 at 20:40:15:

> OK, I know I'm missing something here.

> I want to use ACCEPT to grab some text from the user and then
> parse it using WORD or PARSE (or maybe parse-word) but as far as
> I can tell they automatically look for their text to work on in
> the input buffer---which I can't find! If I could, I could put it's
> address on the stack and use ACCEPT.

> I thought SOURCE would do the trick, but no joy so far.
> Anyway, just for examples sake, I'd like to do something like:

```
> variable #buffer
> here #buffer !
> : countwords #buffer 80 accept
> bl word count
> over 0= if ." You didn't enter anything." cr
> else ." the first word you typed was: " type cr then ;
```

WORD and PARSE are in fact specific to the input buffer. You'll need to write a PARSE and/or PARSE-WORD that operates on your own string. To do this you'll

need to store the length of your string, and a pointer into it that marks the current parse-position. It's a fairly straightforward exercise; I'm happy to help if you run into snags.

Once it's written it may well be of use to others!

Neal

Re: word, parse, accept and all that

Posted by Bob Cunningham on August 06, 1999 at 23:11:57:

In Reply to: [Re: word, parse, accept and all that](#) posted by Neal Bridges on August 06, 1999 at 20:47:43:

...

> WORD and PARSE are in fact specific to the input buffer. You'll need to write a

> PARSE and/or PARSE-WORD that operates on your own string. To do this you'll need to store the length of your string, and a pointer into it that marks the current parse-position. It's a fairly straightforward exercise; I'm happy to help if you run into snags.

> Once it's written it may well be of use to others!

What about "redirecting" the input buffer to "be" our buffer? Then we could merely switch to our own buffer and use the existing QF words unmodified.

I would also like to be able to use WORD and PARSE with data from the serial port as well.

-BobC

Re: word, parse, accept and all that

Posted by [Neal Bridges](#) on August 06, 1999 at 23:20:10:

In Reply to: [Re: word, parse, accept and all that](#) posted by Bob Cunningham on August 06, 1999 at 23:11:57:

> What about "redirecting" the input buffer to "be" our buffer? Then we could merely switch to our own buffer and use the existing QF words unmodified.

> I would also like to be able to use WORD and PARSE with data from the serial port as well.

This can certainly be done -- the facility isn't present in Quartus Forth right

now, though, so an alternative approach is required. WORD is unnecessary -- it can be built from PARSE, and PARSE is a very simple routine to implement.

While certainly leveraging on internal routines is good, this particular functionality is so trivial to implement there'd be little advantage.

Neal

Re: word, parse, accept and all that

Posted by [Bob Cunningham](#) on August 07, 1999 at 04:11:32:

In Reply to: [Re: word, parse, accept and all that](#) posted by Neal Bridges on August 06, 1999 at 23:20:10:

> > What about "redirecting" the input buffer to "be" our buffer? Then we could
> > merely switch to our own buffer and use the existing QF words unmodified.
> > I would also like to be able to use WORD and PARSE with data from the serial
> > port as well.
> This can certainly be done -- the facility isn't present in Quartus Forth right
> now, though, so an alternative approach is required. WORD is unnecessary -- it
> can be built from PARSE, and PARSE is a very simple routine to implement.
> While certainly leveraging on internal routines is good, this particular
> functionality is so trivial to implement there'd be little advantage.
> Neal

But the general concept should still hold: Any and all buffer-based I/O should be handed the same way with the same words. That includes user-defined buffers, and virtually all forms of I/O.

You know, sort of like a mini version of UNIX stdio...

-BobC

Re: word, parse, accept and all that

Posted by [Neal Bridges](#) on August 07, 1999 at 11:54:15:

In Reply to: [Re: word, parse, accept and all that](#) posted by Bob Cunningham on August 07, 1999 at 04:11:32:

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> You know, sort of like a mini version of UNIX stdio...

I follow your idea, though WORD and PARSE aren't I/O words -- they're string manipulation words akin to strtok() in C, but specific to the console's input line.

The parameters for WORD and PARSE are defined by the Standard; an additional facility would have to be provided to allow you to specify a new input source, which you'd then have to worry about managing.

This wouldn't generalize WORD and PARSE, but rather would add a back-door for changing the input source specification; a non-portable complication. (TIB and #TIB are specified by the Standard, but are obsolescent words about to be removed from the new version of the Standard).

For a simple facility seldom required, it makes greater sense for the developer to employ a 5-line definition than it does to extend the kernel. That definition is then applicable to any Standard system.

Neal

Re: word, parse, accept and all that

Posted by [Bob Cunningham](#) on August 07, 1999 at 13:31:08:

In Reply to: [Re: word, parse, accept and all that](#) posted by Neal Bridges on August 07, 1999 at 11:54:15:

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> removed from the new version of the Standard).

> For a simple facility seldom required, it makes greater sense for the
developer
> to employ a 5-line definition than it does to extend the kernel. That
> definition is then applicable to any Standard system.

My comments aren't intended as literal extensions to the standard. I'm certain
this sort of thing could be implemented as a strict superset of the standard,
and thus maintain strict compatibility with the standard. All that is needed
is to guarantee that the default buffer used by PARSE at system initialization
is the one bound to the standard user input device. If the user elects to use
any of the buffer-swapping features, then it is the responsibility of the user
to get the system back into the default configuration before running any
Standard code.

And the portability argument can't possibly hold water. Using QF to do
anything more sophisticated than "Hello World" is certain to be non-portable.
QF also contains some very cool non-standard words (like (hex)) that would have
to be ported before any application using them could be ported. The main
reason appears to me to be that Palm apps are primarily UI-oriented, where on
other platforms where Forth is used the user interface is assumed to be far
more primitive. For QF apps in particular, and Palm apps in general, porting
is not a design consideration, since the platform is so unique. But providing
common abstractions would allow more of an application to be developed on other
platforms, or make use of some code developed for other platforms.

If an orthogonal system were put in place that provided methods for creating
and attaching buffers to physical and logical I/O devices, and a set of words
to manipulate the contents of said buffers in convenient ways (pattern matching
and substring extraction/composition, for example), it would certainly save
many users having to replicate the same low-level code.

It would also provide a higher level of abstraction for people using the
platform, reducing the need to learn low-level device I/O. How often in UNIX
programming have you had to bypass the "stdio" interface? In 15 years, I've
only had to do it twice (and that was only when I couldn't get access to the
driver source code, and was too lazy to write a new driver).

The Palm platform is small enough that implementing such a system should lead
to a very short learning and debug curve. The system is closed to the point

that new devices can realistically only be added via the serial/IR port(s) (without voiding the warranty).

For example, the existing "problems" with the PalmOS serial interface could be flattened once and for all by embedding any "tweaks" into an abstraction layer. If a particular PalmOS bug were fixed, one change to the abstraction layer and all users would benefit instantly. How many times has the advice for proper handling of the serial port been repeated? Put it in library code one time, and then just tell all users to ensure they are using the current (latest and greatest) release before reporting problems. Abstractions can save both time and effort, and since time is money, they can save money as well.

If the abstraction is simple and intuitive, the user can focus more on the problem domain and less on the language and platform domains. If platform inconsistencies and peculiarities are, to the greatest extent possible, pushed into a thin but effective abstraction layer, then support discussions would center more on application-level or tool problems, and less on managing and disseminating a repetitive "gotcha" list.

The same would apply to the buffer manipulation words. Provide a few standard primitives and only the most common high-level operations (similar to what UNIX does with `stdio` and `strings`), and allow the user to compose any higher level operations as needed. If the starting set is well chosen, there will be little need to extend it.

The only arguments I can think of against this notion have to do only with filling the dictionary and code space in interpretive mode, a problem that does not exist when the code is compiled (right?).

There are no run-time problems I know of, since `stdio` and `strings` are FAST at doing what they do. The code inside those functions has been massaged for decades, and represents the extreme evolution of the algorithms (that would port unchanged) and the implementation code (that would serve as an effective guide).

`Stdio` and `strings` have a very proud and successful history, one I think the Forth community could benefit from. It would certainly encourage more C/C++ programmers to give Forth a try.

I have ported various `stdio` libraries to several bare-metal platforms, and the best general-purpose library was from GNU. It provided many build options that went from "lean & mean" to "swiss army knife". I would generally start with a simple minimal implementation, then expand it only as the needs of the application grew (for example, I never included "readline" or "regex" support). What I would up with was always as small and as fast as possible, given the needs of the project. And it was always a great help to be able to build and test routines on a standard workstation and move them to the target, since the `stdio` interface was the same on both platforms.

Is there a PC Forth that would allow me to develop QF serial port applications? Aren't all serial ports pretty much alike? Wouldn't it be convenient to be able to manually test a QF serial app by "redirecting" I/O from the serial port to the stylus/screen?

Abstraction is good! Done well, abstraction can be both convenient and fast.

One of the things that made C++ nearly an instant success was that the language could be used to create wrappers for all the existing standard C libraries, providing extensive and sophisticated functionality right away. As the needs of C++ became better understood, the libraries evolved in radical ways. If Forth is ever going to obtain the benefits of object orientation, it too will need to bootstrap its acceptance by having a standard body of library code to "wrap". The existing libraries in Standard Forth would be virtually impossible to wrap in any way, since almost no abstractions are expressed in the libraries, mainly primitives. That would mean any OO layer would also have to provide its own system abstractions, and thus increase the learning cost substantially (or, more accurately, minimize the reuse of prior knowledge).

Time for me to get off my soapbox. If my Forth mastery would allow me to code my way out of a paper bag, I'd take a stab at this myself. The issue of cross-platform development has come up before, and I do not recall any satisfactory environment being mentioned. Even with my GoType keyboard, developing on the Palm is a hassle (and a feature!). I would dearly love to have a standard Forth interface that would allow me to talk to the Palm serial port and COM1: on the PC in the same way.

For that matter, a basic windowing abstraction might be a good idea too. Develop the basic app using the portable interface on any platform, then move to the target and use target-specific refinements when and where needed. Maybe tk or d-flat or AWT?

Re: word, parse, accept and all that

Posted by [Neal Bridges](#) on August 07, 1999 at 15:10:29:

In Reply to: [Re: word, parse, accept and all that](#) posted by Bob Cunningham on August 07, 1999 at 13:31:08:

> > > > While certainly leveraging on internal routines is good, this particular
> > > > functionality is so trivial to implement there'd be little advantage.

As it pertains to the simple matter of parsing the next word from a string, certainly it is unnecessary to modify the kernel to allow the use of PARSE when the functionality of PARSE can be re-written in a few moments.

In regards to I/O redirection -- it is again a trivial matter to write a **serial-type** that sends a string to the serial port. For ease of testing, if you wish, you can vector TYPE yourself:

```
: serial-type ... ;
```

```
variable type-vector  
: normal-output ['] type type-vector ! ;  
: serial-output ['] serial-type type-vector ! ;  
: type type-vector @ execute ;
```

```
: go
  normal-output
\ or
  serial-output
  ... type ...
;
```

This gives you the desired functionality -- the ability to use TYPE and to switch back and forth between output sources -- with no complications, no modifications to the kernel, and the technique is fully portable. KEY or EKEY can likewise be extended, even so far as to combining two input sources into one 'stream', with only a couple of lines of code.

This is an area in which Forth surpasses C and other similar languages -- you can entirely override a basic function like TYPE to your own advantage, in this case adding the ability to switch to serial output. Without this strength, you would in fact have to define an API that allowed switching of sources -- a far more complex model.

Neal

Re: word, parse, accept and all that

Posted by [Bob Cunningham](#) on August 08, 1999 at 01:01:11:

In Reply to: [Re: word, parse, accept and all that](#) posted by Neal Bridges on August 07, 1999 at 15:10:29:

> > > > While certainly leveraging on internal routines is good, this
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> As it pertains to the simple matter of parsing the next word from a string,
> certainly it is unnecessary to modify the kernel to allow the use of PARSE
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> the functionality of PARSE can be re-written in a few moments.

I was trying to get away from one specific example, and look at the entire class of similar problems. Single examples are often simple and easy, even trivial. But when 20 or 30 trivial examples become apparent, a general solution strategy is often warranted. That is what I was advocating.

> In regards to I/O redirection -- it is again a trivial matter to write a
> **serial-type** that sends a string to the serial port. For ease of
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> : type type-vector @ execute ;
>
> : go
>   normal-output
> \ or
>   serial-output
>   ... type ...
> ;
>
```

Cool. The paper bag I'm trying to program my way out of just got a little larger.

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> This is an area in which Forth surpasses C and other similar languages -- you
> can entirely override a basic function like TYPE to your own advantage, in
this
> case adding the ability to switch to serial output. Without this strength,
you
> would in fact have to define an API that allowed switching of sources -- a
far
> more complex model.
```

C has function pointers, which are essentially equivalent to tick and xt's. The functionality you've elegantly implemented above is essentially equivalent to a C++ vtable, a tried and true technique.

The more general case is equivalent to C++ inheritance and operator/function overloading. The initial behavior of the function can be extended or replaced, as desired.

As for the switching of sources, it would only need to "appear" to the programmer that the data sources were switched. Whatever implementation mechanism proved to be most effective should be used, so long as it creates the desired effect (even if only as a functional illusion). UNIX itself does this in many of its system calls, especially those related to the file system and networking.

Though I have negligible experience with Forth (period, or) on other platforms, it appears to me there are more differences than commonalities between Forths on different platforms, and it is those very differences that make Forth useful on each platform. That is to say, negligible abstraction, despite the existence of a standard.

There is no cost to adding a layer, especially if the user is completely free to bypass it. If the layer is well designed and implemented, there will be little need for the user to bypass it, meaning the user will do so only at his or her own risk.

For example, the Microsoft Foundation Classes are a convenient wrapper for the cumbersome Windows API. But they are not the only abstraction, not by a long shot, and may not be the best for any given situation (despite what Microsoft may say). But MFC and its peers are all extraordinarily powerful abstractions that make programming on post-Win3.1 systems *possible* for most of us, since

the underlying APIs have evolved into Byzantine monstrosities. Bypassing the class wrapper (whichever one is used) is an activity fraught with peril.

Of course, if it is the intent of a language that claims to be "4th generation" to remain platform-specific and of minimal abstraction, then so be it. It just baffles me that this is the situation today. The world changes, but Forth does not. Not even the ANSI standard changed Forth: It merely unified the more commonly used parts of it.

Of course, most of this comes from my continuing efforts to learn Forth, where I'm forced to keep my nose in the figurative gutter when I want to be soaring among the clouds (as I do in my other languages). Even Lisp and Prolog were easier for me to pick up than Forth has been. But then again, I **was** younger during those efforts.

Is a difficulty learning new programming languages a symptom of Alzheimer's Disease? (The language is fine. Bob, you're losing it.)

Re: word, parse, accept and all that

Posted by [Barry Marks](#) on August 09, 1999 at 14:49:20:

In Reply to: [Re: word, parse, accept and all that](#) posted by Bob Cunningham on August 08, 1999 at 01:01:11:

> C has function pointers, which are essentially equivalent to tick and xt's.
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> overloading. The initial behavior of the function can be extended or
replaced,
> as desired.

A lot of what C++ does is to formalize and encapsulate many of the techniques that C and ASM programmers (probably other languages, too) use to solve problems.

As sophisticated as I think Forth is, I think it's closer to C than to C++ in what it attempts. Forth is a lower level language than C, I think.

Personally, I kind of like that about it.

Barry

Re: word, parse, accept and all that

Posted by [Neal Bridges](#) on August 09, 1999 at 15:18:43:

In Reply to: [Re: word, parse, accept and all that](#) posted by Barry Marks on August 09, 1999 at 14:49:20:

> As sophisticated as I think Forth is, I think it's closer to C than to C++ in
> what it attempts. Forth is a lower level language than C, I think.

It's at once a low-level language, and a high-level language. It's trivial to raise it to as high a level of abstraction as you desire.

> Personally, I kind of like that about it.

Me too :)

Neal

Re: word, parse, accept and all that

Posted by [Neal Bridges](#) on August 08, 1999 at 01:36:54:

In Reply to: [Re: word, parse, accept and all that](#) posted by Bob Cunningham on August 08, 1999 at 01:01:11:

> > > > > While certainly leveraging on internal routines is good, this
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> I was trying to get away from one specific example, and look at the entire
> class of similar problems. Single examples are often simple and easy, even
> trivial. But when 20 or 30 trivial examples become apparent, a general
> solution strategy is often warranted. That is what I was advocating.

[vectoring code snipped]

> Cool. The paper bag I'm trying to program my way out of just got a little
> larger.

My example is an illustration of a general technique; using the facilities already provided in Forth, it's simple and straightforward to add any required levels of abstraction.

> As for the switching of sources, it would only need to "appear" to the

> programmer that the data sources were switched. Whatever implementation
> mechanism proved to be most effective should be used, so long as it creates
the
> desired effect (even if only as a functional illusion). UNIX itself does this
> in many of its system calls, especially those related to the file system and
> networking.

Right; again, this functionality is available directly via the Forth dictionary.

> Though I have negligible experience with Forth (period, or) on other
platforms,
> it appears to me there are more differences than commonalities between Forths
> on different platforms, and it is those very differences that make Forth
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> existence of a standard.

There's a reason for this -- those abstractions best suited to solving a given
problem can be added to the application with suprisingly minimal code. This is
in fact a good way to think of developing Forth applications -- building
specific abstractions to solve problems.

General-purpose high-level abstractions bloat the underlying engine and are not
required; not required in that they would be no more flexible than an ad-hoc
solution, no easier to understand, and no more efficient in operation.

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> to remain platform-specific and of minimal abstraction, then so be it. It
just
> baffles me that this is the situation today. The world changes, but Forth
does
> not. Not even the ANSI standard changed Forth: It merely unified the more
> commonly used parts of it.

Standards are not in fact meant to change a language, but rather to document
standard practice.

Forth is a remarkably powerful tool, more powerful than I suspect you yet
realize. It is not as it is due to calcification, or reticence to change.

> Of course, most of this comes from my continuing efforts to learn Forth, where
> I'm forced to keep my nose in the figurative gutter when I want to be soaring
> among the clouds (as I do in my other languages). Even Lisp and Prolog were
> easier for me to pick up than Forth has been. But then again, I *was* younger
> during those efforts.

> Is a difficulty learning new programming languages a symptom of Alzheimer's
> Disease? (The language is fine. Bob, you're losing it.)

:) That may be a factor. In fact your experience with other languages may be
clouding your vision somewhat... working with Forth will help you see past all
that. Also I recommend Leo Brodie's book, "Thinking Forth".

Neal

Re: word, parse, accept and all that

Posted by [Carl Jacobsen](#) on August 08, 1999 at 11:54:32:

In Reply to: [Re: word, parse, accept and all that](#) posted by Neal Bridges on August 08, 1999 at 01:36:54:

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> not required; not required in that they would be no more flexible than an
> ad-hoc solution, no easier to understand, and no more efficient in operation.

Okay, wandering off-topic here, but...

Anyone ever read "The Mote In God's Eye", by Larry Niven and Jerry Pournelle?
The philosophical differences in language design/use stated above just
happened to strike a chord, reminding me of the differences between human
technology and Motie technology...

-- Carl-who-probably-shouldn't-be-awake-and-typing-yet

Bandwidth Shortages for Quartus Discussions

Posted by [Matthew Burke](#) on August 06, 1999 at 20:26:11:

Well my company just bought me a Palm VII so I can develop some query
apps, etc. Now I finally have an excuse to brush up my (very) rusty
Forth skills!

I've ben browsing through the discussion archives which has been very useful.
In one of the messages, Neal mentioned something about the bandwidth used
by this discussion forum is costing him a bundle. I would recommend moving
the discussion forum to eGroups.com Granted they have some problems and
the way you get a free group is by allowing ads (which I hate but I find the
eGroups ones not too obtrusive). On the whole I think it would be a good move.
Those who wanted could get the forum postings as email and those that didn't
could browse on the web. Setting up an egroup would also give a file repository
(I forget how much space), a group-accessible calendar, and several other

features.

Anyway, food for thought.

Matt

P.S. I posted here rather than sending email to Neal because I saw another archived message where he said he'd like to see as much as possible discussed publically.

P.P.S. Neal, look for my registering Quartus as soon as my next paycheck arrives next week. I think it's one of the best products I've seen and from what I see here on the forum, I declare you to be the best product support person I've ever seen.

Re: Bandwidth Shortages for Quartus Discussions

Posted by [Neal Bridges](#) on August 06, 1999 at 20:36:51:

In Reply to: [Bandwidth Shortages for Quartus Discussions](#) posted by Matthew Burke on August 06, 1999 at 20:26:11:

> Well my company just bought me a Palm VII so I can develop some query
> apps, etc. Now I finally have an excuse to brush up my (very) rusty
> Forth skills!

Be sure and ask any questions that arise as you go.

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> In one of the messages, Neal mentioned something about the bandwidth used
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> (I forget how much space), a group-accessible calendar, and several other
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> Anyway, food for thought.

It's not a bad idea, though I have a few concerns about it; however I was able to acquire additional space (thanks to Kip DeGraaf) which helped quite a bit. The Forum archives, in particular, now reside on another server, and there are a few more items I'll be migrating.

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> arrives next week. I think it's one of the best products I've seen and from
> what I see here on the forum, I declare you to be the best product support
> person I've ever seen.

Thanks, on all counts!

Neal

Take a week's vacation, miss some kudos

Posted by [Kip DeGraaf](#) on August 12, 1999 at 11:52:54:

In Reply to: [Re: Bandwidth Shortages for Quartus Discussions](#) posted by Neal Bridges on August 06, 1999 at 20:36:51:

> > I've ben browsing through the discussion archives which has been very
useful.
> > In one of the messages, Neal mentioned something about the bandwidth used
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> The Forum archives, in particular, now reside on another server, and there
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> few more items I'll be migrating.

I knew I should have dropped into a web cafe or something.

Migrate away Neal. I've had so much fun with Quartus that I always felt my
registration fee wasn't enough of a thank you. This has just my way of giving
a little extra thank you.

Re: Take a week's vacation, miss some kudos

Posted by [Neal Bridges](#) on August 12, 1999 at 16:18:20:

In Reply to: [Take a week's vacation, miss some kudos](#) posted by Kip DeGraaf on August 12, 1999 at 11:52:54:

> > It's not a bad idea, though I have a few concerns about it; however I was
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> Migrate away Neal. I've had so much fun with Quartus that I always felt my
> registration fee wasn't enough of a thank you. This has just my way of giving
> a little extra thank you.

It's greatly appreciated.

Neal

Recursion

Posted by [Csabo](#) on August 06, 1999 at 19:55:43:

Hi everyone,

My minesweeper is basically done, I just need to clean up a couple of things. I'll probably put it up on the net tonight. Actually, this time I don't even have a question, I just wanted to dump this code here. So here's my take on recursion:

```
\ Uncover
variable ucs \ UnCoverStack counter
: uncover ( y x -- )
1 ucs !
BEGIN
2dup check-coords if
2dup covered? if
2dup uncover-block
2dup draw-block
2dup gb 0= if
2dup 1+ 2swap
2dup 1- 2swap
2dup swap 1+ swap 2swap
```

```
swap 1- swap
ucs 4 v+
else 2drop then
else 2drop then
else 2drop then
ucs 1 v- ucs @ 0=
UNTIL ;
```

All those words are declared above. "v+" and "v-" is "variable +" and "variable -", respectively. It keeps going in all four directions while there are uncovered "0"'s to be covered. I guess all I'm trying to say is that if we're responsible, we can have a whole lot of stuff on the stack... Right? ;-) What's the stack size, anyway? Any comments on the above?

Have a good one,

Csabo (who is now a registered Quartus user and finally managed to crash his PalmIIIx :-)

Re: Recursion

Posted by [Neal Bridges](#) on August 06, 1999 at 19:59:40:

In Reply to: [Recursion](#) posted by Csabo on August 06, 1999 at 19:55:43:

```
>
> \ Uncover
> variable ucs \ UnCoverStack counter
> : uncover ( y x -- )
> 1 ucs !
> BEGIN
> 2dup check-coords if
> 2dup covered? if
> 2dup uncover-block
> 2dup draw-block
> 2dup gb 0= if
> 2dup 1+ 2swap
> 2dup 1- 2swap
> 2dup swap 1+ swap 2swap
> swap 1- swap
> ucs 4 v+
> else 2drop then
> else 2drop then
> else 2drop then
> ucs 1 v- ucs @ 0=
> UNTIL ;
>
```

> All those words are declared above. "v+" and "v-" is "variable +" and "variable

> "-", respectively. It keeps going in all four directions while there are
> uncovered "0"'s to be covered. I guess all I'm trying to say is that if we're
> responsible, we can have a whole lot of stuff on the stack... Right? ;-)
What's
> the stack size, anyway? Any comments on the above?

Comments -- there's no recursion in that, just a loop. As to the stack -- it's
1024 cells deep; certainly you can keep as many cells on it as you like, as long
as you keep it balanced.

Neal

Re: Recursion

Posted by [Csabo](#) on August 07, 1999 at 00:00:06:

In Reply to: [Re: Recursion](#) posted by Neal Bridges on August 06, 1999 at
19:59:40:

> Comments -- there's no recursion in that, just a loop.

Yes. This is what I wrote earlier:

"Right now everything is fine, I'm just getting to the "uncovering-all-the-0-
fields-at-once" part. Which is the nice bit. I think there is no "true"
recursion in Forth, if I declare a word which calls itself, it will call the
previous definition of the word. But that's not a problem at all since we have
the mighty stack, which will make it even easier."

In all other languages I wrote minesweeper in so far, I used recursion for this
particular part. Here it was not necessary. Just push the new coordinates down
the stack and keep track of how much coords are left to be processed. Accessing
the stack and dealing with it is so easy in Forth, the whole language seems to
be built around it. Gives you great power if you use it right. Also, the 1024
size is definitely enough. Thanks for letting me know.

Csabo

Re: Recursion

Posted by [Neal Bridges](#) on August 07, 1999 at 00:17:29:

In Reply to: [Re: Recursion](#) posted by Csabo on August 07, 1999 at 00:00:06:

> > Comments -- there's no recursion in that, just a loop.

> Yes. This is what I wrote earlier:

[snip] My error -- I misread your earlier message.

> In all other languages I wrote minesweeper in so far, I used recursion for this particular part. Here it was not necessary. Just push the new coordinates down the stack and keep track of how much coords are left to be processed. Accessing the stack and dealing with it is so easy in Forth, the whole language seems to be built around it. Gives you great power if you use it right. Also, the 1024 size is definitely enough. Thanks for letting me know.

It does. One of the early hurdles for beginners is getting used to the idea that you can leave things on the stack, if your code is structured properly they'll be there when you get back to them.

Neal

Re: Recursion

Posted by [Carl Jacobsen](#) on August 06, 1999 at 21:10:57:

In Reply to: [Re: Recursion](#) posted by Neal Bridges on August 06, 1999 at 19:59:40:

> > All those words are declared above. "v+" and "v-" is "variable +" and "variable -", respectively.

For what it's worth, the lines ucs 4 v+ and ucs 1 v- could be replaced with 4 ucs +! and -1 ucs +!, respectively.

The large collection of swaps and dups in the middle seems to take a y,x pair and produce the coordinates of the adjacent (up, down, left, right) squares -- you could break that whole block out to a word named "add-udlr" or some such, to make the code a little clearer.

Just some ideas,
-- Carl

Re: Recursion

Posted by [Csabo](#) on August 07, 1999 at 00:03:59:

In Reply to: [Re: Recursion](#) posted by Carl Jacobsen on August 06, 1999 at 21:10:57:

> For what it's worth, the lines ucs 4 v+ and ucs 1 v- could be replaced with 4 ucs +! and -1 ucs +!, respectively.

Great! Thanks. I didn't know we had those word. I'll replace them, just gotta

be careful to reverse the order everywhere. :-) I should have coded my version that way too, since ! works like that too (value then address).

```
> The large collection of swaps and dups in the middle seems to take a y,x
> pair and produce the coordinates of the adjacent (up, down, left, right)
> squares -- you could break that whole block out to a word named "add-udlr"
> or some such, to make the code a little clearer.
```

Yes, that's what it does and I think that should help. I'll implement these, and then upload them.

Thanks!

Csabo

Bizarre crashes

Posted by [E.](#) on August 06, 1999 at 19:13:33:

I just had the most interesting experience. I wrote a tiny little "box flees from pen" program, which I never actually got to run. Every time I'd try to run it, it would sit there and do nothing (as it was supposed to) until a pendown.

On pendown, it would trash the graphics display, and need the paperclip treatment. After a few instances of this, it went into a continuously repeating series of resets. The only thing that cured this was a hard reset.

I've doublechecked (or recycled from working programs) all the routines, and the problem seems to be here:

[Partially from memory, partially from an IRC sscrollback...]

```
\ "distance" is a routine that has worked fine in the past in other programs.
\ distance is ( y2 x2 y1 x1 -- n ).
\ I've also included events and graphics.
```

```
: domove
  coords 2@ yp @ xp @ \ xp and yp are the box' coords - I know it's bad form.
  distance
  20 < if \ Hope the less-than comes through.
    0 0 at ." ! " cr \ this was as far as I had gotten; it doesn't flee yet.
  else
    0 0 at ." . " cr
  then
;

: go
  begin
    0. (ekey) \ This was a holdover from something I previously used that
              \ needed higher resolution than just ekey.
    dup pendownevent =
```

```
over penmoveevent =  
or if  
  domove  
then  
  drop  
again  
;
```

It looks straightforward enough to me. The only thing I can think of is that I made an error when entering in distance, but I tested it from the "command line" and it worked fine. xp and yp don't seem to be specially named locations. Etc.

Is there a really obvious error here that I can't see, or did I trigger something unrelated to this program? I didn't have any hacks running at the time, nor DAs.

-E (confused)

Re: Bizarre crashes

Posted by [Neal Bridges](#) on August 06, 1999 at 19:55:18:

In Reply to: [Bizarre crashes](#) posted by E. on August 06, 1999 at 19:13:33:

Hi E. After an initial transcription error (my fault) during which I thought I'd found a problem, I have to say it looks like there's no problem. Show me the 'distance' code, maybe under some conditions it breaks.

Neal

Re: Bizarre crashes

Posted by [E.](#) on August 06, 1999 at 20:16:59:

In Reply to: [Re: Bizarre crashes](#) posted by Neal Bridges on August 06, 1999 at 19:55:18:

> Hi E. After an initial transcription error (my fault) during which I thought
> I'd found a problem, I have to say it looks like there's no problem.

I was afraid you'd say that.

> Show me
> the 'distance' code, maybe under some conditions it breaks.

: sqrt \ Wil Baden

```
0 tuck do 1+ dup 2* 1+ +loop
;

: distance ( y2 x2 y1 x1 -- n )
  rot
  - dup *
  rot rot
  - dup *
  + sqrt
;
```

There shouldn't be an overflow problem, since I'm getting the numbers from coords 2@, and both xp and yp were set to 80. Um, not 80., the double-cell value.

Could it be an installed-but-inactive hack? I had MenuHack and HackDeleteHack installed and off at the time.

Do I have to worry (if I don't use Mem* or Dm* or anything along those lines) about memory management in Quartus-built apps? Because all I've done between my previous reset and this bug was recompile and test the hell out of an app I wrote.

I lost the source to that program with the hard reset, and I'm a bit leery of trying it again, otherwise I'd, um, try it again.

Chalk it up to cosmic rays?

-E

Re: Bizarre crashes

Posted by [Neal Bridges](#) on August 06, 1999 at 20:32:45:

In Reply to: [Re: Bizarre crashes](#) posted by E. on August 06, 1999 at 20:16:59:

> > Show me
> > the 'distance' code, maybe under some conditions it breaks.

```
> : sqrt \ Wil Baden
> 0 tuck do 1+ dup 2* 1+ +loop
> ;

> : distance ( y2 x2 y1 x1 -- n )
> rot
> - dup *
> rot rot
> - dup *
> + sqrt
> ;
```

Looks OK.

> There shouldn't be an overflow problem, since I'm getting the numbers from
> coords 2@, and both xp and yp were set
to
> 80. Um, not 80., the double-cell value.

> Could it be an installed-but-inactive hack? I had MenuHack and HackDeleteHack
> installed and off at the time.

No, inactive hacks don't do anything at all.

> Do I have to worry (if I don't use Mem* or Dm* or
> anything along those lines) about memory management in Quartus-built apps?
> Because all I've done between my previous reset and this bug was recompile and
> test the hell out of an app I wrote.

There's no reason to concern yourself about memory management, no.

> I lost the source to that program with the hard reset, and I'm a bit leery of
> trying it again, otherwise I'd, um, try it again.

> Chalk it up to cosmic rays?

Perhaps. With strange errors I turn to the Palm OS Emulator to test; if I can't
cause the error there I know it's something in the environment, or just a
temporarily unhappy Palm that needs a reset.

It's a good idea to HotSync now and again while developing. :)

Neal

Re: Bizarre crashes

Posted by [E.](#) on August 06, 1999 at 20:47:33:

In Reply to: [Re: Bizarre crashes](#) posted by Neal Bridges on August 06, 1999 at
20:32:45:

> There's no reason to concern yourself about memory management, no.

Very good to know.

> It's a good idea to HotSync now and again while developing. :)

I do. Well, usually. When it's a little 5m throwaway hack (that I don't EXPECT
to turn into a huge mystery), I rarely bother. :/

-E

Adding Memo files into CoPilot

Posted by [Csabo](#) on August 06, 1999 at 14:17:25:

Hi everyone,

What's the easiest way to add a text (memo) file to the CoPilot emulator? I did the following: fired up CoPilot, created a dummy memo with something distinctive at the top (like @12345@, or anything). I wrote a small DOS program that takes 3 params: a .PSF filename, a .TXT filename and that 'search string'. It inserts the text into the emulator file at the position where the 'search string' is found... :-)

For taking them out from the emulator I used "EME" (from the Quartus File Area).

There must be an easier way. How can I convert a .txt or a memo, or a memo archive into a PDB file? Looked around on the net but can't find anything so far. Is anyone else doing this kind of stuff?

Thanks,

Csabo

Re: Adding Memo files into CoPilot

Posted by [Erwin Schomburg](#) on August 06, 1999 at 16:19:43:

In Reply to: [Adding Memo files into CoPilot](#) posted by Csabo on August 06, 1999 at 14:17:25:

> Hi everyone,

> What's the easiest way to add a text (memo) file to the CoPilot emulator? I did

> the following: fired up CoPilot, created a dummy memo with something
> distinctive at the top (like @12345@, or anything). I wrote a small DOS
program

> that takes 3 params: a .PSF filename, a .TXT filename and that 'search
string'.

> It inserts the text into the emulator file at the position where the 'search
> string' is found... :-)

> For taking them out from the emulator I used "EME" (from the Quartus File
Area).

> There must be an easier way. How can I convert a .txt or a memo, or a memo
> archive into a PDB file? Looked around on the net but can't find anything so
> far. Is anyone else doing this kind of stuff?

> Thanks,

> Csabo

BackupBuddy, if you have Windows, lets you back up memos also as .pdb file to drag drop into Emulator. With POSEDBexport you get it out of Emulator again. Tedious.

So I have one .pdb file generated the above way, containing all the Quartus libraries, my way then is to use the DocInOut Suite to convert textfiles into DOC format and vice versa, drag-drop to get the doc files into Emulator, POSEDBexport to get them out again and utilizing the docinc module from the Quartus library to read in source to Quartus in Emulator.

See also my ramblings on a complete Quartus design environment at my homepage, link is below.

May the Forth be with you!

/Erwin

Re: Adding Memo files into CoPilot

Posted by Erwin on August 06, 1999 at 16:25:17:

In Reply to: [Re: Adding Memo files into CoPilot](#) posted by Erwin Schomburg on August 06, 1999 at 16:19:43:

> > Hi everyone,

> > What's the easiest way to add a text (memo) file to the CoPilot emulator? I did

> > the following: fired up CoPilot, created a dummy memo with something distinctive at the top (like @12345@, or anything). I wrote a small DOS program that takes 3 params: a .PSF filename, a .TXT filename and that 'search string'.

> > It inserts the text into the emulator file at the position where the 'search string' is found... :-)

> > For taking them out from the emulator I used "EME" (from the Quartus File Area).

> > There must be an easier way. How can I convert a .txt or a memo, or a memo archive into a PDB file? Looked around on the net but can't find anything so far. Is anyone else doing this kind of stuff?

> > Thanks,

> > Csabo

> BackupBuddy, if you have Windows, lets you back up memos also as .pdb file to drag drop into Emulator. With POSEDBexport you get it out of Emulator again. Tedious.

> So I have one .pdb file generated the above way, containing all the Quartus
> libraries, my way then is to use the DocInOut Suite to convert textfiles into
> DOC format and vice versa, drag-drop to get the doc files into Emulator,
> POSEDBexport to get them out again and utilizing the docinc module from the
> Quartus library to read in source to Quartus in Emulator.

> See also my ramblings on a complete Quartus design environment at my homepage,
> link is below.

> May the Forth be with you!

> /Erwin

For reasons unknown it didn't take the clickable link:

<http://home.t-online.de/home/Erwin.Schomburg>

/Erwin

Inconsequential question, really.

Posted by [E.](#) on August 05, 1999 at 21:42:32:

So I get a shiny new registration code (damn, Neal, but you're fast) and try to compile my first app. Needless to say, it fails. Five times. After trying everything I can think of, I finally look for my particular error message in the archives.

As it turns out, the problem is HackDeleteHack. Turn that off, and it compiles fine. I had a wee bit of a scare when I found out that my resource database was gone, but thankfully I had a backup. No big deal.

My question is, what sort of interaction between HDH and Quartus would cause the "Nill ID" error? I'm not asking for a byte-by-byte explanation, just a general sort of description.

Or, of course, if it's too much hassle, then never mind. I'm having WAY too much fun with my new toy.

-E (happy)

Re: Inconsequential question, really.

Posted by [Neal Bridges](#) on August 05, 1999 at 22:50:27:

In Reply to: [Inconsequential question, really.](#) posted by E. on August 05, 1999 at 21:42:32:

> My question is, what sort of interaction between HDH and Quartus would cause the
> "Nill ID" error? I'm not asking for a byte-by-byte explanation, just a general
> sort of description.

HackDelete Hack corrupts some registers it shouldn't. It could certainly be fixed, but it doesn't do anything particularly useful anyway.

Neal

newbie: first attempt at hexdump

Posted by [Alex Alava](#) on August 05, 1999 at 21:25:06:

Hi Neal,

I was able to use the tiny ascii set (thanks!) and created a simple hexdump. Need input on how to optimize. Tinycr does not perform a proper wordwrap so I kludged tinycr. I also had to use tiny half spaces. Other wise, I seem to get all 16 C@ values across. My next attempt would be to break it up into 8 values and 8 tinyemit values across. I think that the tiny set could be very useful. Is emit, type, cr, space vectorable?

```
\ hexdump 8/5/99 5:57 pm aga
```

```
needs tinynums
```

```
needs tinysymbols
```

```
needs tinylower
```

```
needs tinyupper
```

```
: tinycr ( --) currenty @ 136 >  
\ test if need to scroll  
if cr -5 currenty +! else tinycr then ;  
: tinyspaces ( n-- )  
tinywidth @ * currentx +! ;  
: tinyhspace ( --) \ halfspace  
tinywidth @ 2 / currentx +! ;  
: tinyU.R ( u n --)  
swap 0 <# #s #> rot  
over - dup 0> and tinyspaces tinytype ;  
: thdump ( adr n--)
```

```
cr 16 0 do i 2 hex tinyU.R tinyhspace loop tinycr
0 do dup i + c@ 2 hex tinyU.R tinyhspace i 16 mod 15 =
if tinycr then loop drop
cr decimal ;

\ test w/ t0
' t0 >body 48 thdump
```

Re: newbie: first attempt at hexdump

Posted by [Neal Bridges](#) on August 05, 1999 at 22:52:48:

In Reply to: [newbie: first attempt at hexdump](#) posted by Alex Alava on August 05, 1999 at 21:25:06:

```
> I was able to use the tiny ascii set (thanks!) and created a simple hexdump.
> Need input on how to optimize. Tinycr does not perform a proper wordwrap so I
> kludged tinycr. I also had to use tiny half spaces. Other wise, I seem to get
> all 16 C@ values across. My next attempt would be to break it up into 8 values
> and 8 tinyemit values across. I think that the tiny set could be very useful.
Is
> emit, type, cr, space vectorable?
```

They're not vectorable at present -- you'd need to lay a lot of code under them to support wrapping, scrolling, window-bounds, etc. so it's simpler to leave them be. One solution would be to implement the tiny chars as a real Palm font (outside of my scope at present but certainly possible).

[code snipped] Thanks for the code!

Neal

Re: newbie: first attempt at hexdump

Posted by [Alex Alava](#) on August 06, 1999 at 17:12:54:

In Reply to: [Re: newbie: first attempt at hexdump](#) posted by Neal Bridges on August 05, 1999 at 22:52:48:

```
> > I was able to use the tiny ascii set (thanks!) and created a simple hexdump.
> > Need input on how to optimize. Tinycr does not perform a proper wordwrap so I
> > kludged tinycr. I also had to use tiny half spaces. Other wise, I seem to get
> > all 16 C@ values across. My next attempt would be to break it up into 8
values
```

> > and 8 tinyemit values across. I think that the tiny set could be very useful.
> Is
> > emit, type, cr, space vectorable?
> They're not vectorable at present -- you'd need to lay a lot of code under them
> to support wrapping, scrolling, window-bounds, etc. so it's simpler to leave them be. One solution would be to implement the tiny chars as a real Palm font
> (outside of my scope at present but certainly possible).
> [code snipped] Thanks for the code!
> Neal

I reworked the code a little to accomodate the printing of the values and the emitting of the values. Do you want it? Just in case anybody else might be able to use it.

I know that the dump code only works on the dataspace but can easily be modified to dump the codespace.

Alex
Alex Alava

Re: newbie: first attempt at hexdump

Posted by [Neal Bridges](#) on August 06, 1999 at 17:39:43:

In Reply to: [Re: newbie: first attempt at hexdump](#) posted by Alex Alava on August 06, 1999 at 17:12:54:

> I reworked the code a little to accomodate the printing of the values and the
> emitting of the values. Do you want it? Just in case anybody else might be
able
> to use it.

Sure; happy to put it in the File Area.

Neal

A few more graphics primitives

Posted by [Csabo](#) on August 05, 1999 at 15:55:29:

Hi everyone,

I needed to use a couple more graphics routines, so I wrote the following:

```
\ graphics-ext
create halftone-pattern hex
aa55 , aa55 , aa55 , aa55 , decimal

create temp-rect 4 cells allot

: halftone-rounded-rectangle
( height width y x corner-radius -- )
halftone-pattern >abs
WinSetPattern
>r
temp-rect ! temp-rect cell+ !
temp-rect 2 cells + !
temp-rect 3 cells + !
r> temp-rect >abs
WinFillRectangle ;

: halftone-rectangle
( height width y x -- )
0 halftone-rounded-rectangle ;

: invert-rounded-rectangle
( height width y x corner-radius -- )
>r temp-rect ! temp-rect cell+ !
temp-rect 2 cells + !
temp-rect 3 cells + !
r> temp-rect >abs
WinInvertRectangle ;

: invert-rectangle
( height width y x -- )
0 invert-rounded-rectangle ;
```

Now, the part that packs the four coordinates from the stack under an address already exists in "\ graphics" (how do we say that nicely? "Graphics" library file?)

```
create fb 4 cells allot
: frame
( height width y x frame-type --)
>r fb ! fb cell+ ! fb 2 cells + !
fb 3 cells + ! fb >abs
r> WinDrawRectangleFrame ;
```

So what can we do here? Does it make sense to add the above routines to the graphics file, and 'factor out' that particular part? Which committee decides this kind of stuff? ;-)

(If anyone wants to use them, make sure you include the WinSetPattern fix.)

Sincerely,

Csabo

Re: A few more graphics primitives

Posted by [Neal Bridges](#) on August 05, 1999 at 16:05:11:

In Reply to: [A few more graphics primitives](#) posted by Csabo on August 05, 1999 at 15:55:29:

> Hi everyone,

> I needed to use a couple more graphics routines, so I wrote the following:
[code snipped]

Thanks! Good code, a logical extension of the shaded-rectangle example I posted previously.

> Now, the part that packs the four coordinates from the stack under an address
> already exists in "\ graphics" (how do we say that nicely? "Graphics" library
> file?)

```
> create fb 4 cells allot
> : frame
> ( height width y x frame-type --)
> >r fb ! fb cell+ ! fb 2 cells + !
> fb 3 cells + ! fb >abs
> r> WinDrawRectangleFrame ;
```

> So what can we do here? Does it make sense to add the above routines to the
> graphics file, and 'factor out' that particular part? Which committee decides
> this kind of stuff? ;-)

It does make sense to do this. I've added it to my list. I suggest if you modify your own graphics library file that you give it another name; that way a new version from me won't stomp on your changes.

Neal

Array problem

Posted by [Csabo](#) on August 05, 1999 at 10:02:43:

Hi everyone,

Neal: thanks for the info on the pattern filling. I implemented it and it works fine (the drawing is much faster).

I bumped into another problem though. I'm trying to use a big array as a two dimensional array. I wrote two primitives to retrieve and set elements by coordinates, but I keep getting Fatal Exceptions 'n stuff. I'll keep on trying to figure out what's wrong with it, but if anyone knows by giving it a quick look, please let me know. Here it goes:

```
variable board-width
: bw@ board-width @ ;

\ The playing "board"
create board 400 cells allot

\ GetBoard returns one block
: gb ( y x -- n )
swap bw@ * + board + c@ ;

\ SetBoard sets one block
: sb ( y x n -- )
swap rot bw@ * + board + swap c! ;

\ Erase the whole board
: erase-board
bw@ 0 DO bw@ 0 DO j i 0 sb
LOOP LOOP ;
```

Thanks,

Csabo

Re: Array problem

Posted by [Carl Jacobsen](#) on August 05, 1999 at 12:42:19:

In Reply to: [Array problem](#) posted by Csabo on August 05, 1999 at 10:02:43:

> I bumped into another problem though. I'm trying to use a big array as a two
> dimensional array. I wrote two primitives to retrieve and set elements by
> coordinates, but I keep getting Fatal Exceptions 'n stuff. I'll keep on trying
> to figure out what's wrong with it, but if anyone knows by giving it a quick
> look, please let me know. Here it goes:

Neal nailed it, with the point that sb was trying to store an address at a value, rather than vice versa. To keep with the spirit

of Forth programming, I'd suggest factoring the common position lookup code out of gb and sb, such as shown below.

Also, I'd suggest storing and using board-width and board-height as separate values, even though they're the same now (you're using bw@ for both axes in the erase-board word), on the odd chance that the code is used for something non-square in the future.

-- Carl

```
VARIABLE board-width
: bw@ board-width @ ;

\ The playing "board"
CREATE board 400 CELLS ALLOT

: yx>locn ( y x -- c-addr )
  SWAP bw@ * + board + ;

\ GetBoard returns one block
: gb ( y x -- n )
  yx>locn C@ ;

\ SetBoard sets one block
: sb ( y x n -- )
  ROT ROT yx>locn C! ;

\ Erase the whole board
: erase-board ( -- )
  bw@ 0 DO
    bw@ 0 DO J I 0 sb LOOP
  LOOP ;
```

Re: Array problem

Posted by [Csabo](#) on August 05, 1999 at 15:21:58:

In Reply to: [Re: Array problem](#) posted by Carl Jacobsen on August 05, 1999 at 12:42:19:

> Neal nailed it, with the point that sb was trying to store an
> address at a value, rather than vice versa. To keep with the spirit
> of Forth programming, I'd suggest factoring the common position lookup
> code out of gb and sb, such as shown below.

I can see the benefits of that. But won't it make the program slower? The call itself probably takes some time. The reason I didn't do that because these two primitives are *very* simple and often used inside loops. So should where

should we draw the line here? Performance or purity?

> Also, I'd suggest storing and using board-width and board-height as
> separate values, even though they're the same now (you're using bw@
> for both axes in the erase-board word), on the odd chance that the
> code is used for something non-square in the future.

Thanks for the suggestion, Carl. I might change it once everything is done. By the way I'm working on minesweeper, that's the "Hello World" application for me. ;-) All the versions I wrote over the years in C, asm, Delphi *did* support any size boards (e.g. 10x20, etc.) However (as you can see from my "swap" mistake) I am pretty much a newbie in Forth, so I decided to KISS... For now it will only support square "blocks" (one unit of the board) and square boards.

Right now everything is fine, I'm just getting to the "uncovering-all-the-0-fields-at-once" part. Which is the nice bit. I think there is no "true" recursion in Forth, if I declare a word which calls itself, it will call the previous definition of the word. But that's not a problem at all since we have the mighty stack, which will make it even easier.

Khm, if the above bit sounds a bit defensive, please excuse me... If do appreciate any suggestions. Especially on conventions such as naming things. It's really nice to build my own language, but I'd rather follow any "traditions", since I want others understand what I wrote (faster). :-)

Thanks,

Csabo

Re: Array problem

Posted by [Erwin Schomburg](#) on August 05, 1999 at 15:32:31:

In Reply to: [Re: Array problem](#) posted by Csabo on August 05, 1999 at 15:21:58:

>
> I can see the benefits of that. But won't it make the program slower? The call
> itself probably takes some time.

Getting concerned for a few microseconds? Pew! It its really an issue you can declare the factored out words as `INLINE`, so that is no longer an issue, in fact I suggest you try it both ways and see.

> Right now everything is fine, I'm just getting to the "uncovering-all-the-0-fields-at-once" part. Which is the nice bit. I think there is no "true" recursion in Forth, if I declare a word which calls itself, it will call the previous definition of the word. But that's not a problem at all since we have the mighty stack, which will make it even easier.

But there is even a word for it in the Forth Kernel: `RECURSE`, it starts execution of the word it is used in from the beginning.

> Thanks,

> Csabo

May the Forth be with you!

/Erwin

Re: Array problem

Posted by [Csabo](#) on August 05, 1999 at 15:39:01:

In Reply to: [Re: Array problem](#) posted by Erwin Schomburg on August 05, 1999 at 15:32:31:

> Getting concerned for a few microseconds? Pew! It its really an issue you can
> declare the factored out words as `INLINE`, so that is no longer an issue, in
fact

> I suggest you try it both ways and see.

> But there is even a word for it in the Forth Kernel: `RECURSE`, it starts
> execution of the word it is used in from the beginning.

`INLINE`, eh?... `RECURSE`, eh?... The truth came out again!... :-)

Thanks a lot, I'll look into it.

Csabo

Re: Array problem

Posted by [Neal Bridges](#) on August 05, 1999 at 15:31:48:

In Reply to: [Re: Array problem](#) posted by Csabo on August 05, 1999 at 15:21:58:

> > Neal nailed it, with the point that sb was trying to store an
> > address at a value, rather than vice versa. To keep with the spirit
> > of Forth programming, I'd suggest factoring the common position lookup
> > code out of `gb` and `sb`, such as shown below.

> I can see the benefits of that. But won't it make the program slower? The call
> itself probably takes some time. The reason I didn't do that because these two
> primitives are *very* simple and ofter used inside loops. So should where
> should we draw the line here? Performance or purity?

The call has very little overhead indeed. I recommend you write for
readability and maintainability; optimize last if it's required (which it likely
won't be).

Good factoring works both to improve readability, with consequent improvements
elsewhere, and also to show you where your code can be streamlined.

Should you find a frequently used primitive actually requires speeding-up (through examining profiling logs, for instance), you can mark it `INLINE`; however I've yet to find a circumstance where it's required.

> > Also, I'd suggest storing and using board-width and board-height as
> > separate values, even though they're the same now (you're using `bw@`
> > for both axes in the `erase-board` word), on the odd chance that the
> > code is used for something non-square in the future.

> Thanks for the suggestion, Carl. I might change it once everything is done. By
> the way I'm working on minesweeper, that's the "Hello World" application for
> me. ;-) All the versions I wrote over the years in C, asm, Delphi *did*
support

> any size boards (e.g. 10x20, etc.) However (as you can see from my "swap"
> mistake) I am pretty much a newbie in Forth, so I decided to KISS... For now
it
> will only support square "blocks" (one unit of the board) and square boards.

Part of keeping it simple is good factoring, and moving constants and
calculations into their own words (same thing, really); both serve to make your
code self-commenting.

> Right now everything is fine, I'm just getting to the "uncovering-all-the-0-
> fields-at-once" part. Which is the nice bit. I think there is no "true"
> recursion in Forth, if I declare a word which calls itself, it will call the
> previous definition of the word. But that's not a problem at all since we have
> the mighty stack, which will make it even easier.

There certainly is true recursion -- `RECURSE` is the word you're looking for.

Neal

Re: Array problem

Posted by [Csabo](#) on August 05, 1999 at 16:07:11:

In Reply to: [Re: Array problem](#) posted by Neal Bridges on August 05, 1999 at
15:31:48:

> The call has very little overhead indeed. I recommend you write for
> readability and maintainability; optimize last if it's required (which it
likely
> won't be).
> Part of keeping it simple is good factoring, and moving constants and
> calculations into their own words (same thing, really); both serve to make
your
> code self-commenting.

Yes, over the couple of days that I played around with the language that
conclusion was building in me, but you said it so wisely and distinctively, as
always.

Thanks, Neal.

Csabo

Re: Array problem

Posted by [Neal Bridges](#) on August 05, 1999 at 10:46:50:

In Reply to: [Array problem](#) posted by Csabo on August 05, 1999 at 10:02:43:

> I bumped into another problem though. I'm trying to use a big array as a two
> dimensional array. I wrote two primitives to retrieve and set elements by
> coordinates, but I keep getting Fatal Exceptions 'n stuff. I'll keep on trying
> to figure out what's wrong with it, but if anyone knows by giving it a quick
> look, please let me know. Here it goes:

```
> variable board-width
> : bw@ board-width @ ;

> \ The playing "board"
> create board 400 cells allot

> \ GetBoard returns one block
> : gb ( y x -- n )
> swap bw@ * + board + c@ ;

> \ SetBoard sets one block
> : sb ( y x n -- )
> swap rot bw@ * + board + swap c! ;
```

The problem is here: you shouldn't swap before the c!, as your parameters are already in the right order.

```
> \ Erase the whole board
> : erase-board
> bw@ 0 DO bw@ 0 DO j i 0 sb
> LOOP LOOP ;
```

Otherwise it looks fine; of course you must be sure to initialize your board-width. From a design standpoint, I'd rename bw@ to 'board-width' and store the width in a 'bytes/row' variable.

Neal

Wow.

Posted by [E.](#) on August 05, 1999 at 04:31:40:

I've just finished my first app written entirely with Quartus and RsrcEdit. Actually, I tell a lie; I'm have to wait until the 15th, when I can register the assorted programs. But it works inside Quartus even now.

Anyway, my point is this. Without the huge amounts of help from the forum and sample source code by people here, I don't think it would ever have gotten done. My profuse (and severely lacking) thanks go out to all here, many of whom helped me even without knowing it. I'm glad the forum archives exist, y'see.

And, of course, Neal. Without his dedication to supporting his product and blindingly fast response time, my project would still be floundering around.

Thank you.

-E (who will release his source code as soon as he snips the proprietary bits)

Filling a rectangle with halftone pattern

Posted by [Csabo](#) on August 04, 1999 at 12:26:41:

Hi everyone,

Neal: Thanks for the info, I understood that du. was supposed to be ud. Also, I did download the ANS Forth Standard file as a DOC, it's in my PIIIx, but the file is HUGE and the lame doc-file reader I have is not searchable... So it was easier to ask than to look for it. >:-D

I started to write a little game last night, it's half done and I'll put up the source as soon as it's done (if anyone is interested). In the game I want to fill a rectangle with "halftone pattern", like:

```
.*.*. *
*.*. *
*.*. *
```

where * is a lit pixel and . is a clear pixel on the screen. This is what I came up with:

```
\ Halftone pattern
variable x0
variable w0
: halftone-rectangle ( h w y x -- )
4dup erase-rectangle
x0 ! swap x0 @ + w0 ! tuck + swap
DO w0 @ x0 @
DO j i + 1 and if j i point then
LOOP
```

LOOP ;

(needs graphics, and 4dup is declared as usual.) My first approach was to clear and draw each pixel so the inner loop, it went as:

```
DO j i 2dup + 1 and if point else erase-point then
```

(I declared erase-point just like "point", but calls WinEraseLine). This was a lot slower, so I decided to clear the whole area and only lit the pixels that are needed to be lit. It could be made even faster, if the "Y" (= outer) loop would be increased by 2, and we would put each pixel zigzagged, something like

```
j j i + 1 and i point
```

This way the "if" is eliminated, and the body of the loop only runs as many times as it's actually necessary, but we would have to worry about the last row (maybe a "half" row if the height is odd). Anyway, I didn't develop this any further 'cause I feel that my approach is wrong. Isn't there a way to specify the pattern (055h 0AAh) and let the Palm do the work? (Something about the WinSetPattern) If the "Pattern" thing doesn't work out, maybe we could do it with 45 degree lines? Any ideas?

If I'd say "the less API calls you make the faster your program is", am I wrong or am I saying something everyone already knows?

Thanks,

Csabo

Re: Filling a rectangle with halftone pattern

Posted by [Neal Bridges](#) on August 04, 1999 at 15:59:23:

In Reply to: [Filling a rectangle with halftone pattern](#) posted by Csabo on August 04, 1999 at 12:26:41:

```
> I started to write a little game last night, it's half done and I'll put up
the
> source as soon as it's done (if anyone is interested). In the game I want to
> fill a rectangle with "halftone pattern", like:
```

```
> .*.*.*
> *.*.*.
> .*.*.*
```

```
> where * is a lit pixel and . is a clear pixel on the screen. This is what I
> came up with:
```

Here's a faster way:

```
\ pattern
```

```
\ fix for WinSetPattern:
```

```
\ (should be placed in startup.quartus)
```

```
: WinSetPattern
  WinSetPattern drop ;

(binary) 10101010 constant p1
(binary) 01010101 constant p2

create pattern
p1 c, p2 c, p1 c, p2 c, p1 c, p2 c, p1 c, p2 c,

pattern >abs WinSetPattern

create rectangle 10 , 20 , 30 , 40 ,

0 rectangle >abs WinFillRectangle
```

I discovered while doing this that the Quartus Forth internal definition for WinSetPattern doesn't absorb all its arguments -- the fix shown is temporary, I'll incorporate it in the next update.

> If I'd say "the less API calls you make the faster your program is", am I wrong
> or am I saying something everyone already knows?

Generally, yes -- API calls can be slow, depending on the call, and certainly the line-drawing routine isn't a speed-demon. WinFillRectangle zooms along though, and you have the option of changing the corner-rounding radius.

Neal

Wanted feature

Posted by [Francois Vignon](#) on August 04, 1999 at 09:00:44:

Do you know, if in newer version, we can compile a dictionary for using it later ?

By example, I have many function which are included each time and so compiled each time. It can save many time if I compile it and then use it without recompile. It's ok ? (arrggghhh bad english)

Re: Wanted feature

Posted by [Neal Bridges](#) on August 04, 1999 at 09:46:01:

In Reply to: [Wanted feature](#) posted by Francois Vignon on August 04, 1999 at 09:00:44:

> Do you know, if in newer version, we can compile a dictionary for using it
> later ?
> By example, I have many function which are included each time and so compiled
> each time. It can save many time if I compile it and then use it without
> recompile. It's ok ? (arrggghhh bad english)

This is occasionally discussed. The current architecture doesn't allow for it, but it's something I'm considering.

Neal

Hopefully I can save **SOMEONE** some trouble...

Posted by [E.](#) on August 04, 1999 at 04:00:24:

Don't page after ShowForm unless you want all your controls to vanish.

[Well, okay, I SAY all, but I really mean the handful of buttons I had this problem with. YMMV.]

All the hoops I jumped through, just to trace it down to THAT. Sheesh. Don't leave code remnants hanging around. I was trying some bitmap stuff on MainForm (which needed page first), and then switched to my own form (which didn't), and got caught.

But given that CtlDrawControl and CtlShowControl don't seem to work (are they only for dynamic controls?), is there a way to redisplay static resources without doing another ShowForm? Or perhaps a way to clear everything-except-controls without using a handful of erase-rectangle?

-E (just curious)

Re: Hopefully I can save SOMEONE some trouble...

Posted by [Erwin Schomburg](#) on August 04, 1999 at 05:23:06:

In Reply to: [Hopefully I can save SOMEONE some trouble...](#) posted by E. on August 04, 1999 at 04:00:24:

> Don't page after ShowForm unless you want all your
> controls to vanish.

> [Well, okay, I SAY all, but I really mean the handful of buttons I had this
> problem with. YMMV.]

> All the hoops I jumped through, just to trace it down to THAT. Sheesh. Don't
> leave code remnants hanging around. I was trying some bitmap stuff on
MainForm

> (which needed page first), and then switched to my own form
(which
> didn't), and got caught.

> But given that CtlDrawControl and CtlShowControl
don't

> seem to work (are they only for dynamic controls?), is there a way to
redisplay

> static resources without doing another ShowForm? Or perhaps a
way

> to clear everything-except-controls without using a handful of
> erase-rectangle?

> -E (just curious)

If you need to clear a form that contains controls (say it is form resource 1002, and a definition in your code as "1002 constant myform"), you just do a "myform showform" to clear all and redraw the controls, "page" does exactly this for the default form, that is it pops up the empty default form, switching away from your custom form (and not erasing the controls on your custom form as you believe!).

May the Forth be with you!

/Erwin

Re: Hopefully I can save SOMEONE some trouble...

Posted by [Neal Bridges](#) on August 04, 1999 at 09:43:42:

In Reply to: [Re: Hopefully I can save SOMEONE some trouble...](#) posted by Erwin Schomburg on August 04, 1999 at 05:23:06:

> If you need to clear a form that contains controls (say it is form resource
> 1002, and a definition in your code as "1002 constant myform"), you just do a
> "myform showform" to clear all and redraw the controls, "page" does exactly
> this
> for the default form, that is it pops up the empty default form, switching
> away
> from your custom form (and not erasing the controls on your custom form as you
> believe!).

Actually PAGE does erase the screen. 'MainForm' does what you describe, bringing up the main form.

Neal

Re: Hopefully I can save SOMEONE some trouble...

Posted by Erwin on August 04, 1999 at 09:59:36:

In Reply to: [Re: Hopefully I can save SOMEONE some trouble...](#) posted by Neal Bridges on August 04, 1999 at 09:43:42:

> Actually PAGE does erase the screen. 'MainForm' does what you describe,
> bringing up the main form.

> Neal

I found out myself, see below. But am I right that PAGE did re-call the default form in an earlier version of Quartus, or is it my failing memory?

May the Forth be with you!

/Erwin

Re: Hopefully I can save SOMEONE some trouble...

Posted by [Neal Bridges](#) on August 04, 1999 at 10:00:35:

In Reply to: [Re: Hopefully I can save SOMEONE some trouble...](#) posted by Erwin on August 04, 1999 at 09:59:36:

> > Actually PAGE does erase the screen. 'MainForm' does what you describe,
> > bringing up the main form.

> > Neal

> I found out myself, see below. But am I right that PAGE did re-call the
default
> form in an earlier version of Quartus, or is it my failing memory?

As much as I hate to say it, it never did do that; PAGE has always been built
around WinEraseRectangle.

Neal

Re: Hopefully I can save SOMEONE some trouble...

Posted by Erwin on August 04, 1999 at 10:27:26:

In Reply to: [Re: Hopefully I can save SOMEONE some trouble...](#) posted by Neal
Bridges on August 04, 1999 at 10:00:35:

>
> > > Actually PAGE does erase the screen. 'MainForm' does what you describe,
> > > bringing up the main form.

> > > Neal

> > I found out myself, see below. But am I right that PAGE did re-call the
> default
> > form in an earlier version of Quartus, or is it my failing memory?

> As much as I hate to say it, it never did do that; PAGE has always been built
> around WinEraseRectangle.

> Neal

Now I remember why I started to carry my PIIIx on a Force Bond leashed to a
neckstrap, I think I should configure LogoHack to splash my name at startup,
just in case, Real Soon Now ...

/Erwin

Re: Hopefully I can save SOMEONE some trouble...

Posted by [E.](#) on August 04, 1999 at 06:31:28:

In Reply to: [Re: Hopefully I can save SOMEONE some trouble...](#) posted by Erwin Schomburg on August 04, 1999 at 05:23:06:

> "page" does exactly this
> for the default form, that is it pops up the empty default form, switching
> away from your custom form (and not erasing the controls on your custom form
> as you believe!).

Oh. Okay. My form has a frame around it, and after the page the frame was still there, so I was unaware that I was no longer on that form. The missing pixel in the corner of the frame (where the button used to be) should have alerted me to something odd going on, but I know too little of how the OS works. I figured it was a huge WinEraseRectangle or something.

Thanks.

-E

Re: Hopefully I can save SOMEONE some trouble...

Posted by Erwin on August 04, 1999 at 07:23:05:

In Reply to: [Re: Hopefully I can save SOMEONE some trouble...](#) posted by E. on August 04, 1999 at 06:31:28:

> > "page" does exactly this
> > for the default form, that is it pops up the empty default form, switching
> > away from your custom form (and not erasing the controls on your custom form
> > as you believe!).

> Oh. Okay. My form has a frame around it, and after the page the frame was still there, so I was unaware that I was no longer on that form.
The

> missing pixel in the corner of the frame (where the button used to be) should
> have alerted me to something odd going on, but I know too little of how the OS
> works. I figured it was a huge WinEraseRectangle or something.

> Thanks.

> -E

You were leaving me in doubt, so I checked, in the current version it now *is* programmed to do something like a big wipe and not a forms-switch, but this notwithstanding, the way to retain/redraw your controls is a "nnnn showform".

/Erwin

Re: Hopefully I can save SOMEONE some trouble...

Posted by [E.](#) on August 04, 1999 at 07:47:24:

In Reply to: [Re: Hopefully I can save SOMEONE some trouble...](#) posted by Erwin on August 04, 1999 at 07:23:05:

> > the frame was still there

> You were leaving me in doubt, so I checked, in the current version it now *is* programmed to do something like a big wipe and not a forms-switch,

I thought so, because when >I< went back and checked (hey, spread the confusion, eh?) I got an "Object not in Form" fatal error unless I went into a makebusy loop after displaying the new form. I assumed that the Palm thought I was on a different form and was choking on, I dunno, the graffiti state indicator, or some such.

> but this

> notwithstanding, the way to retain/redraw your controls is a "nnnn showform".

Duly noted. Many thanks. :)

-E

String Manipulations Questions

Posted by [Barry Ekstrand](#) on August 03, 1999 at 23:19:28:

I've been trying to figure out how to manipulate string variables such that new strings are created, but I'm not having any luck bridging the gap with the reference material I have.

For example, if I have a variable named String1 that contains the value "First", I'd like to manipulate String1 to create another variable String2 that has the

individual characters of "First" rearranged to "tsriF", or perhaps to remove a particular individual character place to give "Fist", etc.

I assumed that Forth had words created to analyze and manipulate string variables, but unless I'm just missing the obvious, it looks like they need to be created. I don't see an obvious path using the few string manipulating words that I can find (cmove, c@) to create the words that I want. As always, any and all help is appreciated.

Barry Ekstrand

Re: String Manipulations Questions

Posted by [Neal Bridges](#) on August 03, 1999 at 23:39:12:

In Reply to: [String Manipulations Questions](#) posted by Barry Ekstrand on August 03, 1999 at 23:19:28:

> I've been trying to figure out how to manipulate string variables such that new strings are created, but I'm not having any luck bridging the gap with the reference material I have.

> For example, if I have a variable named String1 that contains the value "First", I'd like to manipulate String1 to create another variable String2 that has the individual characters of "First" rearranged to "tsriF", or perhaps to remove a particular individual character place to give "Fist", etc.

> I assumed that Forth had words created to analyze and manipulate string variables, but unless I'm just missing the obvious, it looks like they need to be created. I don't see an obvious path using the few string manipulating words that I can find (cmove, c@) to create the words that I want. As always, any and all help is appreciated.

Forth doesn't have in-built string manipulators, any more than does C. It's pretty straightforward to add those you might need -- for instance:

needs toolkit
needs core-ext

```
: reverse-move ( c-addr1 c-addr2 u -- )  
  rot swap bounds swap 1- ?do  
    i c@ over c! char+  
  -1 +loop  
  drop ;
```

Neal

More String Manipulations Questions

Posted by [Barry Ekstrand](#) on August 05, 1999 at 21:22:33:

In Reply to: [Re: String Manipulations Questions](#) posted by Neal Bridges on August 03, 1999 at 23:39:12:

Neal,

I've been digesting the feedback you've given, and I have made headway (really!) but still need a bit of help. First of all, for the code snippet you gave below, I think I've got the general idea of the logic, but want to double check. Please look at my analysis of the stack below the snippet and let me know if I'm seeing it right:

```
> needs toolkit
> needs core-ext
>
> : reverse-move ( c-addr1 c-addr2 u -- )
> rot swap bounds swap 1- ?do
> i c@ over c! char+
> -1 +loop
> drop ;
```

Analysis:

Word Stack

```
-----
- BEGIN - c-addr1 c-addr2 u
rot c-addr2 u c-addr1
swap c-addr2 c-addr1 u
bounds c-addr2 c-addr1+u c-addr1
1- c-addr2 c-addr1+u c-addr1-1
?do c-addr2
i c-addr2 c-addr1-1
c@ c-addr2 b
over c-addr2 b c-addr2
c! c-addr2
char+ c-addr2+b
-1 c-addr2+b -1
+loop c-addr2+b
```

I'm not sure I've got bounds right. If I understand the logic, bounds should act as a pointer of sorts, starting at c-addr1 and moving up u bytes (the size of the value at c-addr1). The loop uses -1 to decrement and read the character bytes from c-addr1+u on down to c-addr1. Once the loop gets to c-addr1-1 it stops. In the loop c@ gets the byte in each pass and appends it to c-addr2 (?) - I don't really see this as obvious, but it seems that it must be what is going on. The c! confuses, me, as I thought that would re-set c-addr2 each pass to the current value of b. Please let me know where I'm confused!

I do see that your example use of reverse-move works correctly. I have tried to use it along with the help you gave me earlier in reading the HotSync name, as below:

```
\ stringtest
needs toolkit
needs core-ext

create string1buf 25 chars allot
create string2buf 25 chars allot

: username ( -- c-addr u )
0. 0. string1buf >abs 0. 0. 0.
DlkGetSyncInfo drop
string1buf dup >abs StrLen ;

: reverse-move ( c-addr1 c-addr2 u -- )
rot swap bounds swap 1- ?do
i c@ over c! char+
-1 +loop
drop ;

: user
cr ." Username is:"
username
cr type cr ;

: reverse
cr ." Reverse is:" cr
string1buf dup >abs StrLen
string2buf swap
reverse-move
string2buf dup >abs StrLen
type cr ;

user
reverse
```

The code above partially works: I do get the HotSync name, and I do get it reversed. However, after running the program more than once, following the reversed HotSync name is a string of garbage characters. When I've inserted .s in the code, I find that the length of string2buf is 257 bytes rather than 17 as it should be for my HotSync name. Is this a problem coming from my initial allot of 25 somehow? Any and all help is, as always, appreciated.

Apologies for the length of this posting!

Regards,

Barry Ekstrand

Re: More String Manipulations Questions

Posted by [Carl Jacobsen](#) on August 06, 1999 at 13:41:30:

In Reply to: [More String Manipulations Questions](#) posted by Barry Ekstrand on August 05, 1999 at 21:22:33:

> I'm not sure I've got bounds right. If I understand the logic, bounds
> should act as a pointer of sorts, starting at c-addr1 and moving up u
> bytes (the size of the value at c-addr1). The loop uses -1 to decrement
> and read the character bytes from c-addr1+u on down to c-addr1.

bounds will translate the top two cells on the stack (which should be an address and a count) into starting and ending addresses, so yes, where you might have used u and 0 as array indexes, now you have starting and ending pointers -- iterate from one to the other and you've pointed to all the bytes of interest.

And keep in mind that there's nothing magic that scales the numbers added to pointers. In C, if you say p++ and p is a character pointer, you're incrementing it by one, whereas if it's an int pointer, you might actually be incrementing it by 2 or 4 or even 8. In Forth, if you want to point to the "next" item that's 4 bytes "wide", you'd need to add 4 to the pointer.

Thus, when iterating through an array of cells, you'd commonly see the loop ending with: 1 CELLS +loop.

So, I suppose if one were being really compulsive, the -1 in the code we're examining here could more precisely be written as -1 CHARS.

> Once the loop gets to c-addr1-1 it stops.

Actually, your analysis missed the SWAP between bounds and 1- ?do:

```
        bounds          ( c-addr2 c-addr1+u c-addr1 )
1-      ( c-addr2 c-addr1+u c-addr1-1 )
?do    ( c-addr2 )
```

With the SWAP added back in, that section looks like this:

```
        bounds          ( c-addr2 c-addr1+u c-addr1 )
SWAP    ( c-addr2 c-addr1 c-addr1+u )
1-      ( c-addr2 c-addr1 c-addr1+u-1 )
?do    ( c-addr2 )
```

So, the loop counts from c-addr1+u-1 to c-addr1.

> In the loop c@ gets the byte in each pass and appends it to c-addr2 (?) - I
> don't really see this as obvious, but it seems that it must be what is going
> on. The c! confuses, me, as I thought that would re-set c-addr2 each pass to
> the current value of b.

The C! will store b at the address currently pointed to by (the copy just made of) c-addr2, but the immediately following CHAR+ will then increment c-addr2 to point to the next character position.

Think of OVER C! CHAR+ as *c_addr2++ = tos; in C.

> Please let me know where I'm confused!

See above :-)

Just for fun, here's a (really rough) C translation of the loop in question:

```
void reverse_move(char *c_addr1, char *c_addr2, int u)
{
    char *i, tos;

    for (i = c_addr1 + u - 1; i >= c_addr1; i--) {
        tos = *i;
        *c_addr2 = tos;
        c_addr2++;
    }
}
```

without bounds, the loop index would effectively be an array index, rather than a pointer. In C, the above loop would change to something like this:

```
void reverse_move(char *c_addr1, char *c_addr2, int u)
{
    int i;
    char tos;

    for (i = u - 1; i >= 0; i--) {
        tos = c_addr1[i];
        *c_addr2 = tos;
        c_addr2++;
    }
}
```

In Forth, this gets somewhat more difficult to write, because you end up with three cells of interest on the stack (the destination address, the source address, and the character grabbed), and you need a copy of the third cell down (the destination address), for which there is no simple stack operator (you could use PICK, but PICK and its partner in crime ROLL seem to have the same status in Forth as goto in C -- it's there, but using it is usually seen as evidence that you've painted yourself into a corner).

Hope this helps, or at least wasn't too boring :-)

-- Carl

Re: More String Manipulations Questions

Posted by [Barry Ekstrand](#) on August 07, 1999 at 00:31:31:

In Reply to: [Re: More String Manipulations Questions](#) posted by Carl Jacobsen on August 06, 1999 at 13:41:30:

Carl,

Thanks for the detailed explanations. They are most helpful to a novice like me!

> Actually, your analysis missed the SWAP between

> bounds and 1- ?do:

[code snipped]

> So, the loop counts from c-addr1+u-1 to c-addr1.

This makes much better sense - dumb mistake to miss the SWAP when analyzing the code.

> Just for fun, here's a (really rough) C translation of the loop in question:

[code snipped]

The only problem with a C translation is that I'm even less of a C programmer than an Forth programmer! My programming experience dates 20 years ago to FORTRAN back in college (punching cards, no less) and BASIC occasionally over the ensuing years for specialized engineering calculations on various handhelds (HP-75C was a favorite back in the mid-80s). Thus, I'm not just learning Forth and the Palm Systraps, but also trying to learn how to think more like a 'real' programmer. I'm a true novice in every sense of the word.

> Hope this helps, or at least wasn't too boring :-)

> -- Carl

Nope, it is much appreciated!

Barry

Re: More String Manipulations Questions

Posted by [Neal Bridges](#) on August 05, 1999 at 22:49:10:

In Reply to: [More String Manipulations Questions](#) posted by Barry Ekstrand on August 05, 1999 at 21:22:33:

> I've been digesting the feedback you've given, and I have made headway
>(really!) but still need a bit of help. First of all, for the code snippet you
>gave below, I think I've got the general idea of the logic, but want to double
>check. Please look at my analysis of the stack below the snippet and let me
>know if I'm seeing it right:

needs toolkit

needs core-ext

```
: reverse-move ( c-addr1 c-addr2 u -- )
  rot swap bounds swap 1- ?do
    i c@ over c! char+
  -1 +loop
  drop ;
```

Let me break it down. I find these things always look complicated when littered with stack diagrams, but hopefully it sheds some light:

```
: reverse-move ( c-addr1 c-addr2 u -- )
  rot swap ( c-addr2 c-addr1 u )
  \ Loop backwards over the c-addr1 u string:
  bounds swap 1- ( c-addr2 c-addr1-first-address c-addr1-last-address )
  ?do ( c-addr2 )
    \ Fetch character at position i:
    i c@ ( c-addr2 char )
    \ Store at c-addr2:
    over ( c-addr2 char c-addr2 )
    c! ( caddr2 )
    \ Increment c-addr2:
    char+
  \ Loop backwards until the beginning of the first string:
  -1 +loop
  drop \ drop the now-unneeded c-addr2 address
;
```

> I'm not sure I've got bounds right. If I understand the logic, bounds should >act as a pointer of sorts, starting at c-addr1 and moving up u bytes (the size >of the value at c-addr1). The loop uses -1 to decrement and read the character >bytes from c-addr1+u on down to c-addr1. Once the loop gets to c-addr1-1 it >stops. In the loop c@ gets the byte in each pass and appends it to c-addr2 (?) >- I don't really see this as obvious, but it seems that it must be what is going >on. The c! confuses, me, as I thought that would re-set c-addr2 each pass to >the current value of b. Please let me know where I'm confused!

'bounds' calculates the start and end address of the first string; the ?do loop then loops backwards over the string, storing each character at the second address, and incrementing that address. Simple.

> I do see that your example use of reverse-move works correctly. I have tried >to use it along with the help you gave me earlier in reading the HotSync name, >as below:

[code snipped]

> The code above partially works: I do get the HotSync name, and I do get it >reversed. However, after running the program more than once, following the >reversed HotSync name is a string of garbage characters. When I've inserted .s >in the code, I find that the length of string2buf is 257 bytes rather than 17 >as >it should be for my HotSync name. Is this a problem coming from my initial >allot of 25 somehow? Any and all help is, as always, appreciated.

You're using StrLen to determine the length of the string -- this works when the string is zero-byte delimited, but there's no reason the HotSync name will be, hence your changing results. If you keep the length around on the stack, you don't need to recalculate it:

```
username
tuck string1buf swap reverse-move
string1buf swap 2dup type -> segdirB laeN
tuck string2buf swap reverse-move
string2buf swap type -> Neal Bridges
```

> Apologies for the length of this posting!

No problem!

Neal

String Things again - StrLen and other questions

Posted by [Barry Ekstrand](#) on August 07, 1999 at 01:03:09:

In Reply to: [Re: More String Manipulations Questions](#) posted by Neal Bridges on August 05, 1999 at 22:49:10:

> Let me break it down. I find these things always look complicated when littered
> with stack diagrams, but hopefully it sheds some light:
[code snipped]

The breakdown was most helpful. It may be obvious to everyone else, but it took a while for me to realize the stack is more than just a place to put numbers for calculations ala an HP calculator - it is the heart of Forth itself.

> You're using StrLen to determine the length of the string -- this works when the
> string is zero-byte delimited, but there's no reason the HotSync name will be,
> hence your changing results. If you keep the length around on the stack, you
> don't need to recalculate it:

I definitely need a better understanding of what goes on with StrLen. I guess my first question is: what does zero-byte delimited mean? I believe I understand what a delimiter is, and its use in defining the block of memory the string is taking up, but does zero-byte delimited simply mean there is a single byte with a value of zero following the string to delimit it?

In previous code you showed:

```
: username ( -- c-addr u )
0. 0. string1buf >abs 0. 0. 0.
```

```
DlkGetSyncInfo drop  
stringlbuf dup >abs StrLen ;
```

I believe the first 2 lines of code after the username word declaration gets the HotSync username and clears the stack, leaving the last line to deal with getting the length of the string. >abs should be converting the address of stringlbuf from a 16-bit address to a 32-bit address, which apparently is what StrLen needs. (side note: to make this conversion, there isn't additional value of zero required on the stack in addition to the 16-bit address?) When I have tried similar coding for strings that are input from the console, however, I get lengths that again are not correct for the string being analyzed. I assume it is the zero-byte delimiter thing again?

All this has also got me thinking about the issue of string length. If any string manipulation is to be done, the length is a definite requirement, and StrLen would seem to be the easiest way to get it, if it can be used in every case. Is there another, pure Forth way to know the length of the string? Are strings not all delimited in a standard way in Forth?

Any further thoughts on the best approach to facilitate string analysis and manipulation is encouraged and appreciated!!

Barry

Re: String Things again - StrLen and other questions

Posted by [Neal Bridges](#) on August 07, 1999 at 01:53:36:

In Reply to: [String Things again - StrLen and other questions](#) posted by Barry Ekstrand on August 07, 1999 at 01:03:09:

```
> The breakdown was most helpful. It may be obvious to everyone else, but it  
>took a while for me to realize the stack is more than just a place to put  
>numbers for calculations ala an HP calculator - it is the heart of Forth  
>itself.
```

Quite true.

```
> I definitely need a better understanding of what goes on with StrLen. I guess  
>my first question is: what does zero-byte delimited mean? I believe I  
>understand what a delimiter is, and its use in defining the block of memory the  
>string is taking up, but does zero-byte delimited simply mean there is a single  
>byte with a value of zero following the string to delimit it?
```

Yes.

```
> In previous code you showed:  
>
```

```
> : username ( -- c-addr u )
```

```
> 0. 0. stringlbuf >abs 0. 0. 0.  
> DlkGetSyncInfo drop  
> stringlbuf dup >abs StrLen ;  
>
```

```
> I believe the first 2 lines of code after the username word declaration gets  
>the HotSync username and clears the stack, leaving the last line to deal with  
>getting the length of the string. >abs should be converting the address of  
>stringlbuf from a 16-bit address to a 32-bit address, which apparently is what  
>StrLen needs. (side note: to make this conversion, there isn't additional  
>value  
>of zero required on the stack in addition to the 16-bit address?)
```

No -- a 16-bit dataspace-relative address on the stack is converted to a 32-bit double-cell absolute address. One cell does become two, but there's no zero required. >abs is a bit like S>D, but it adds the base-address of dataspace as well.

```
> When I have  
>tried similar coding for strings that are input from the console, however, I  
>get  
>lengths that again are not correct for the string being analyzed. I assume it  
>is the zero-byte delimiter thing again?
```

Yes.

```
> All this has also got me thinking about the issue of string length. If any  
>string manipulation is to be done, the length is a definite requirement, and  
>StrLen would seem to be the easiest way to get it, if it can be used in every  
>case. Is there another, pure Forth way to know the length of the string? Are  
>strings not all delimited in a standard way in Forth?
```

Strings in the programming world are stored three ways:

1) Zero-byte delimited, common to C and C++.

This involves a search to calculate the length, and is thus slower than any alternative method. It requires space for a trailing zero-byte immediately at the end of each string. The Palm OS, being written in C, generally (but not always) expects zero-delimited strings.

2) Length stored in the first byte of the string, common to Pascal and older Forths.

This limits strings to 255 characters; obviously a larger integer could be stored, but then the method begins to lose some of its charm. This method, too, requires additional space immediately adjacent to the string.

Notably WORD and FIND work with counted strings; they are old Forth words. Quartus Forth provides PARSE-WORD and (find) as modern equivalents that work with two-cell strings (method 3, below).

It's often handy to use this length-first method for storing short strings, as with **place** or equivalent.

3) Length stored elsewhere, as with (c-addr u) on the stack; c-addr is the address, u is the length.

This is generally preferred, and is the direction toward which the Standard leans: it allows data to be referenced from anywhere, with no requirement for a leading or trailing byte, and string length limited only by the size of one Forth cell. With this method, you can refer to data within a larger memory region without modifying or copying the section you're interested in. This is therefore fastest and most flexible method of handling strings. It requires that you keep tracks of lengths yourself, usually on the stack, but storing them in variables as required.

Neal

Re: More String Manipulations Questions

Posted by [Barry Ekstrand](#) on August 05, 1999 at 21:25:49:

In Reply to: [More String Manipulations Questions](#) posted by Barry Ekstrand on August 05, 1999 at 21:22:33:

I see my formatting in my analysis got lost in the translation. I hope you can make out what I was trying to show - for each word, how I think the stack is affected.

Regards,

Barry

> Neal,

> I've been digesting the feedback you've given, and I have made headway (really!) but still need a bit of help. First of all, for the code snippet you gave below, I think I've got the general idea of the logic, but want to double check. Please look at my analysis of the stack below the snippet and let me know if I'm seeing it right:

```
> > needs toolkit
> > needs core-ext
> >
> > : reverse-move ( c-addr1 c-addr2 u -- )
> > rot swap bounds swap 1- ?do
> > i c@ over c! char+
> > -1 +loop
> > drop ;
```

```
> Analysis:
> Word Stack
> -----
> - BEGIN - c-addr1 c-addr2 u
> rot c-addr2 u c-addr1
> swap c-addr2 c-addr1 u
> bounds c-addr2 c-addr1+u c-addr1
```

```
> 1- c-addr2 c-addr1+u c-addr1-1
> ?do c-addr2
> i c-addr2 c-addr1-1
> c@ c-addr2 b
> over c-addr2 b c-addr2
> c! c-addr2
> char+ c-addr2+b
> -1 c-addr2+b -1
> +loop c-addr2+b
```

> I'm not sure I've got bounds right. If I understand the logic, bounds should act as a pointer of sorts, starting at c-addr1 and moving up u bytes (the size of the value at c-addr1). The loop uses -1 to decrement and read the character bytes from c-addr1+u on down to c-addr1. Once the loop gets to c-addr1-1 it stops. In the loop c@ gets the byte in each pass and appends it to c-addr2 (?) - I don't really see this as obvious, but it seems that it must be what is going on. The c! confuses, me, as I thought that would re-set c-addr2 each pass to the current value of b. Please let me know where I'm confused!

> I do see that your example use of reverse-move works correctly. I have tried to use it along with the help you gave me earlier in reading the HotSync name, as below:

```
> \ stringtest
> needs toolkit
> needs core-ext

> create string1buf 25 chars allot
> create string2buf 25 chars allot

> : username ( -- c-addr u )
> 0. 0. string1buf >abs 0. 0. 0.
> DlkGetSyncInfo drop
> string1buf dup >abs StrLen ;

> : reverse-move ( c-addr1 c-addr2 u -- )
> rot swap bounds swap 1- ?do
> i c@ over c! char+
> -1 +loop
> drop ;

> : user
> cr ." Username is:"
> username
> cr type cr ;

> : reverse
> cr ." Reverse is:" cr
> string1buf dup >abs StrLen
> string2buf swap
> reverse-move
> string2buf dup >abs StrLen
> type cr ;
```

```
> user  
> reverse
```

```
> The code above partially works: I do get the HotSync name, and I do get it  
reversed. However, after running the program more than once, following the  
reversed HotSync name is a string of garbage characters. When I've inserted .s  
in the code, I find that the length of string2buf is 257 bytes rather than 17 as  
it should be for my HotSync name. Is this a problem coming from my initial allot  
of 25 somehow? Any and all help is, as always, appreciated.
```

```
> Apologies for the length of this posting!
```

```
> Regards,
```

```
> Barry Ekstrand
```

Re: More String Manipulations Questions

Posted by [Neal Bridges](#) on August 05, 1999 at 22:55:11:

In Reply to: [Re: More String Manipulations Questions](#) posted by Barry Ekstrand on August 05, 1999 at 21:25:49:

```
> I see my formatting in my analysis got lost in the translation. I hope you  
can make out what I was trying to show - for each word, how I think the stack is  
affected.
```

```
No problem -- next time for posting code, if you put pre and /pre tags around  
your code (in angle brackets of course, as with any self-respecting HTML tag)  
and make sure each blank line begins with a space, it'll format nicely.
```

Neal

Re: String Manipulations Questions

Posted by [Neal Bridges](#) on August 03, 1999 at 23:54:43:

In Reply to: [Re: String Manipulations Questions](#) posted by Neal Bridges on August 03, 1999 at 23:39:12:

Some example code for **reverse-move** from the preceeding message:

```
: string1 s" This is my string!" ;  
create string2 18 chars allot
```

```
string1 string2 swap reverse-move
```

```
string2 18 type -> !gnirts ym si sihT
```

Neal

SDK 3.0 Pdf files on the Palm

Posted by [Yeshiah Mikol](#) on August 03, 1999 at 23:10:47:

Anyone interested in the SDK 3.0 Pdf files converted to iSilo format so they can be read on the Palm rather than printing out 1000 pages or sitting at your desktop for weeks. I have converted the 4 SDK ref.pdf files into isilo which is a palm offline browser for html. I will make them available at my site for download. I simply preferred reading them on the palm at the park rather than the desk...\

download them at
<http://www.torahscroll.com/pilot>

move down to the isilo section.
download is 522kb. First download the isilo demo then the SDK_pdb.zip

Yeshiah

Re: SDK 3.0 Pdf files on the Palm

Posted by [Erwin Schomburg](#) on August 04, 1999 at 04:21:08:

In Reply to: [SDK 3.0 Pdf files on the Palm](#) posted by Yeshiah Mikol on August 03, 1999 at 23:10:47:

> Anyone interested in the SDK 3.0 Pdf files converted to iSilo format so they
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> Yeshiah

Thanks a lot for the effort. Now I know what I bought the xtra xtra card for...
8-)

May the Forth be with you!

/Erwin

Re: SDK 3.0 Pdf files on the Palm

Posted by Erwin on August 04, 1999 at 05:42:01:

In Reply to: [Re: SDK 3.0 Pdf files on the Palm](#) posted by Erwin Schomburg on August 04, 1999 at 04:21:08:

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When you go this way, be sure to grab the iSilo html converter from their
webpage, it walks through links, so the entire Quartus manual for OnPalm
reading is just a one step operation if you start conversion from manual.htm....

/Erwin

Re: SDK 3.0 Pdf files on the Palm

Posted by [Yeshiah Mikhol](#) on August 09, 1999 at 09:37:12:

In Reply to: [Re: SDK 3.0 Pdf files on the Palm](#) posted by Erwin on August 04, 1999 at 05:42:01:

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> /Erwin

I did that too. should I upload that as well?

probably as often as it is updated I shouldnt.

I also downloaded all 6 archived Forum htm files and converted them as well. I
am slowly working through #1. Yess I too have the XXtra card on my IIIx and it
is a good thing...

Re: SDK 3.0 Pdf files on the Palm

Posted by Erwin on August 09, 1999 at 16:28:19:

In Reply to: [Re: SDK 3.0 Pdf files on the Palm](#) posted by Yeshiah Mikhol on August 09, 1999 at 09:37:12:

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> I also downloaded all 6 archived Forum htm files and converted them as well. I
> am slowly working through #1. Yess I too have the XXtra card on my IIIx and it
> is a good thing...

Don't think so, everybody interested and having grabbed iSilo can do it from the unzipped Quartus distribution in 10 seconds flat. The hard part when not having shelled out for Acrobat full version is the PDF to HTML conversion, thanks again for that.

/Erwin

Re: SDK 3.0 Pdf files on the Palm

Posted by [Yeshiah Mikhol](#) on August 10, 1999 at 09:56:24:

In Reply to: [Re: SDK 3.0 Pdf files on the Palm](#) posted by Erwin on August 09, 1999 at 16:28:19:

> having shelled out for Acrobat full version is the PDF to HTML conversion,

People need to trim their threads occasionally. I couldnt afford acrobat either but I found this instead.... Requires a little cleaning up of the html when you get it back. But heh!

PDF --> TXT or HTML

Convert local PDFs to text or html with new email service

Adobe and the TRACE Research Center of Madison, Wisconsin recently extended a service designed to enhance accessibility for the visually impaired, allowing pdfs on local hard drives or CD-ROMs to be easily converted. Users can now send a pdf as an email attachment to one of two new auto-reply addresses, depending on the desired results:

- pdf2txt@sun.trace.wisc.edu (for plain text)
- pdf2html@sun.trace.wisc.edu (for html)

Re: SDK 3.0 Pdf files on the Palm

Posted by Erwin on August 09, 1999 at 16:35:45:

In Reply to: [Re: SDK 3.0 Pdf files on the Palm](#) posted by Erwin on August 09, 1999 at 16:28:19:

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the
> unzipped Quartus distribution in 10 seconds flat. The hard part when not
> having shelled out for Acrobat full version is the PDF to HTML conversion,
> thanks again for that.
> /Erwin

BTW: With the new companion for BackupBuddy, InstallBuddy for Windows, you just
drag-drop manual.htm to it and the iSilo version of the complete manual gets
installed next hotsync, thats how I did it while betaing the stuff that was
released today.

/Erwin

A few questions

Posted by [Csabo](#) on August 03, 1999 at 15:04:02:

Hi everyone,

My name is Csabo and I'm a "newbie" at both Forth and programming the Pilot. I
came across three words that I don't understand and can't find anywhere. It's
s>d , <# and #> . If anyone has the time, can you please tell me what do they
do, or where are they defined?

Thanks,

Csabo

Re: A few questions

Posted by [Neal Bridges](#) on August 03, 1999 at 15:17:24:

In Reply to: [A few questions](#) posted by Csabo on August 03, 1999 at 15:04:02:

> My name is Csabo and I'm a "newbie" at both Forth and programming the Pilot. I
> came across three words that I don't understand and can't find anywhere. It's
> s>d , <# and #> . If anyone has the time, can you please tell me what do they
> do, or where are they defined?

They're defined in the CORE section of the ANS Forth Standard (available for download from the Online Resources section of the Quartus Forth manual). Here's a brief overview:

S>D converts a single-cell value on the stack (16-bits) to a double-cell value (32-bits).

<# and #> begin and end 'pictured numeric output'. Here's an example:

```
: ud. ( ud -- ) <# #s #> type space ;
```

du. will display the double-cell (32-bit) value on the stack as an unsigned number.

Neal

Re: A few questions

Posted by [Neal Bridges](#) on August 03, 1999 at 17:05:35:

In Reply to: [Re: A few questions](#) posted by Neal Bridges on August 03, 1999 at 15:17:24:

>
> : ud. (ud --) <# #s #> type space ;
>

> **du.** will display the double-cell (32-bit) value on the stack as an
> unsigned number.

Excuse my typography -- of course I mean "ud." rather than "du."

Neal

Overstepping my bounds...

Posted by [E.](#) on August 03, 1999 at 05:59:53:

[I apologize in advance for the, um, overly verbose nature of this post. "May cause drowsiness", my ass.]

Short background: Trying to lower a 32x32 bitmap onto a form. Easy. Loop y coord from -32 to 5, and draw bitmap each iteration. The top line of the bitmap is blank, so this works. I thought I'd have a problem with the fact that the form I'm testing it on is simpler than the form it will eventually end up on, in that the final form has a border. I figured the border would get erased. Okay, so it doesn't. Yay. However, in trying to "fix" this, I played with WinSetWindowBounds. Thus I learned the importance of >abs and s>d. I learned that dbScan is a very useful tool (147 duplicate shortcuts? Hey, you BET!). I also learned that FrmGetWindowHandle doesn't seem to do anything, at least not that I could notice. I am not, however, upset over this, because presumably it means that either my resources or the OS itself is simple enough that it can return its arguments. Cool.

Now the questions: WinSetWindowBounds seems to apply only to text. I can't draw a bitmap on the screen but outside the bounds and have it not show up (which would be useful for, e.g., "windowshading" a bitmap). No problem, but I am now deciding that this effect is far more trouble than it's worth. Oh well, no great loss. But on a purely theoretical note, would the equivalent method for graphics be to define a very small form in the appropriate area, ShowForm it, scroll the bitmap onto it, then ShowForm the main form again and draw the bitmap in its desired location? Or would that also fail? I.E., if I have a window whose "top" is 5, and I draw a 10x10 bitmap at y_0, will I see only the bottom half of the bitmap?

(Did that question make any sense?)

If this is the case, then in theory I could do it with dynamically defined forms, if they weren't such a PITA, yes?

-E

- [dbScan at PalmGear \(because Pimlico's site doesn't seem to mention it anymore\)](#)

Re: Overstepping my bounds...

Posted by [Neal Bridges](#) on August 03, 1999 at 10:56:44:

In Reply to: [Overstepping my bounds...](#) posted by E. on August 03, 1999 at 05:59:53:

> Now the questions: WinSetWindowBounds seems to apply only to
> text.

You're looking to set clipping bounds, which is done using WinSetClip.

Neal

Stopping an executing program

Posted by [Menno Smits](#) on August 03, 1999 at 03:21:05:

Is there any way to stop a long running program in Quartus Forth?

For example, if I run the following:

```
0 0 do i . loop
```

I can't stop the program running.

All event's (hardware button presses etc) are queued however, they all get processed once the program is finished. The only way to stop everything if the program is running is to reset the Palm with the stylus (even the off button doesn't work, it is software driven).

I'm using Quartus 1.2.1U with a Palm IIIx.

Re: Stopping an executing program

Posted by [Menno Smits](#) on August 04, 1999 at 22:35:11:

In Reply to: [Stopping an executing program](#) posted by Menno Smits on August 03, 1999 at 03:21:05:

Thanks for your help Neal, Erwin and Phil.

I was kinda hoping that there was a solution akin to CTRL-C in dos/linux to stop ANY program, but inserting some event handling code is I guess an acceptable solution.

Any chance this may be a feature sometime in the future? Surely some sort of interrupt could be triggered by a hardware keypress something. I'm not too familiar with the Palm architecture but something like this doesn't seem too

unreasonable.

Menno

Re: Stopping an executing program

Posted by [Neal Bridges](#) on August 04, 1999 at 22:40:11:

In Reply to: [Re: Stopping an executing program](#) posted by Menno Smits on August 04, 1999 at 22:35:11:

> Thanks for your help Neal, Erwin and Phil.

> I was kinda hoping that there was a solution akin to CTRL-C in dos/linux to stop

> ANY program, but inserting some event handling code is I guess an acceptable
> solution.

> Any chance this may be a feature sometime in the future? Surely some sort of
> interrupt could be triggered by a hardware keypress something. I'm not too
> familiar with the Palm architecture but something like this doesn't seem too
> unreasonable.

Such a thing would be most difficult -- you'd have to semaphore a fairly large number of processes to ensure that they remained atomic, lest you disrupt the various states of the system. I'll think on it, though. For the moment, a bit of extra event handling provides all the benefits with few hassles.

Neal

Re: Stopping an executing program

Posted by [Neal Bridges](#) on August 03, 1999 at 09:48:48:

In Reply to: [Stopping an executing program](#) posted by Menno Smits on August 03, 1999 at 03:21:05:

> Is there any way to stop a long running program in Quartus Forth?

> For example, if I run the following:

> 0 0 do i . loop

> I can't stop the program running.

> All event's (hardware button presses etc) are queued however, they all get
> processed once the program is finished. The only way to stop everything if the

> program is running is to reset the Palm with the stylus (even the off button
> doesn't work, it is software driven).

> I'm using Quartus 1.2.1U with a Palm IIIx.

: exit? 0. (ekey) drop ;

If you now place **exit?** in any suspect loop, you'll be able to abort or
exit.

Neal

Re: Stopping an executing program

Posted by [Erwin Schomburg](#) on August 03, 1999 at 11:04:21:

In Reply to: [Re: Stopping an executing program](#) posted by Neal Bridges on August
03, 1999 at 09:48:48:

> > Is there any way to stop a long running program in Quartus Forth?

> > For example, if I run the following:

> > 0 0 do i . loop

> > I can't stop the program running.

> > All event's (hardware button presses etc) are queued however, they all get
> > processed once the program is finished. The only way to stop everything if
the

> > program is running is to reset the Palm with the stylus (even the off button
> > doesn't work, it is software driven).

> > I'm using Quartus 1.2.1U with a Palm IIIx.

>

: exit? 0. (ekey) drop ;

>

> If you now place **exit?** in any suspect loop, you'll be able to abort or
> exit.

> Neal

You need to tell that you have to tap the silkscreen menu button to get to these
options in the Quartus menu bar. And this only works while you have not replaced
the Quartus standard forms with custom form resources.

May the Forth be with you!

/Erwin

Re: Stopping an executing program

Posted by [Phil Howlett](#) on August 03, 1999 at 03:44:28:

In Reply to: [Stopping an executing program](#) posted by Menno Smits on August 03, 1999 at 03:21:05:

Hey Menno,

I'm no expert (far from it!) but if you want to have control while a program is running, then try this:

```
0 0 do i . ekey drop loop
```

the ekey word gets an event (such as a key press, etc) and the drop simply drops the event off the stack.

While it may not stop the running program, it does allow you to do other things (like select another application or re-run Quartus Forth)

Cheers,
Phil.

> Is there any way to stop a long running program in Quartus Forth?

> For example, if I run the following:

```
> 0 0 do i . loop
```

> I can't stop the program running.

> All event's (hardware button presses etc) are queued however, they all get processed once the program is finished. The only way to stop everything if the program is running is to reset the Palm with the stylus (even the off button doesn't work, it is software driven).

> I'm using Quartus 1.2.1U with a Palm IIIx.

penDownEvent

Posted by [Phil Howlett](#) on August 03, 1999 at 00:43:14:

Hey there again,

I'm trying to code an event handler when when a pen goes down onto the digitizer.

This is what my event-handler code looks like:

```
.. snip code above ..
```

```
\ My event-handler
: do-event ( ekey -- )
  menuEvent = if
    event >abs itemid
      mnuOptionsAbout = if
        altAbout FrmAlert
          drop
      then
    then
  penDownEvent = if
    drop drop
    beep
  then
  ;
```

.. snip code below ..

My code loads up, no probs. However since I have put in the penDown I get fatal exception errors.

I can still choose the menu silk screen with no problems (I display a Help|About alert box) at all except again, I get a fatal exception after the third 'pendown' (selecting the menu silk button 3 times)

If I tap the screen 3 times, I get a fatal exception Error as well.

I included these lines to do some testing:

```
penDownEvent = if
  drop drop
  beep
then
```

since the penDownEvent returns 3 values (1 gets consumed by the 'if' word) I drop 2 from the stack and then 'beep'. (I will need these values later on).

What I am trying to do is display some bitmaps on the form (done with help from previous messages) and now I want to be able to tap them with the pen. I am trying to get the x,y coordinates (does the word coords@ in events.txt have something to do with this?)

Am I doing this correctly or am I going about this all wrong.

Cheers,
Phil.



Re: penDownEvent

Posted by [Erwin Schomburg](#) on August 03, 1999 at 08:46:12:

In Reply to: [penDownEvent](#) posted by Phil Howlett on August 03, 1999 at 00:43:14:

> Hey there again,

> I'm trying to code an event handler when when a pen goes down onto the
> digitizer.

> This is what my event-handler code looks like:

>

> .. snip code above ..

```
> \ My event-handler
> : do-event ( ekey -- )
>   menuEvent = if
( [stack_empty] \ value from ekey consumed by = if )
>     event >abs itemid
( itemid )
>     mnuOptionsAbout = if
( [stack_empty] \ value from itemid consumed by = if )
>       altAbout FrmAlert
>       drop
( [stack_empty] \ return value from FrmAlert dropped )
>       then
>   then
>   penDownEvent = if
( [stack_underflow-1] \ no value to perform the = if on )
>     drop drop
( [stack_underflow-3] \ )
>     beep
>   then
>   ;
```

> .. snip code below ..

>

> My code loads up, no probs. However since I have put in the penDown I get
fatal
> exception errors.

> I can still choose the menu silk screen with no problems (I display a
Help|About
> alert box) at all except again, I get a fatal exception after the third
> 'pendown' (selecting the menu silk button 3 times)

> If I tap the screen 3 times, I get a fatal exception Error as well.

> I included these lines to do some testing:

>

```

>         penDownEvent = if
>             drop drop
>             beep
>     then
>
> since the penDownEvent returns 3 values (1 gets consumed by the 'if' word) I
> drop 2 from the stack and then 'beep'. (I will need these values later on).
> What I am trying to do is display some bitmaps on the form (done with help
> from
> previous messages) and now I want to be able to tap them with the pen. I am
> trying to get the x,y coordinates (does the word coords@ in events.txt have
> something to do with this?)
> Am I doing this correctly or am I going about this all wrong.
> Cheers,
> Phil.

```

See stack comments inserted above! Your crashes come from underflowing the stack. When you are going to test for kind of events in your handler you need to take extreme care of your stack balance, see below.

To get the coordinates of a PenDown event you use coords@ when you have established that you have in fact a PenDown event.

```

: e_handler ( ekey --- )
dup \ !!!!
( ekey ekey_duplicate )
menuEvent = if
( ekey )
event >abs itemid
( ekey itemid )
mnuOptionsAbout =
( ekey conditional_flag )
if
( ekey )
altAbout FrmAlert
( ekey return_from_FrmAlert )
drop
( ekey )
drop
( [stack_empty] \ for if branch )
then
else \ !!!
( ekey )
penDownEvent =
( conditional_flag )
if
( [stack_empty] \ as it should be )
coords@
( yp xp \ coordinates of PenDown event )
do_pendown ( yp xp --- )

```

```
( [stack_empty] \ do_pendown needs to "eat", i.e. use up, coordinate values )
beep
then
( [stack_empty] \ for else branch )
then
( [stack_empty] \ either branch )
;
```

Got the point?
May the Forth be with you!
/Erwin

Re: penDownEvent

Posted by [Phil Howlett](#) on August 03, 1999 at 09:27:40:

In Reply to: [Re: penDownEvent](#) posted by Erwin Schomburg on August 03, 1999 at 08:46:12:

Hi Erwin,

```
> Got the point?
> May the Forth be with you!
> /Erwin
```

I most certainly have. Your code works like a charm. Silly me forgetting to dup the ekey.

I really should write stack comments a little more often when I get stuck.

Many thanks.

Cheers,
Phil.

learning Forth

Posted by [Dave Bennett](#) on August 02, 1999 at 11:38:21:

New at Forth. Know basic, C, C++, java, scheme, and too many others over the years. Love the Palm and love the idea of developing directly on it. In fact, my Palm V is my main computer. But where do I go to learn Forth? Any suggestions as to books and examples that can be used with Quartus Forth on the Palm would be greatly appreciated.

Dave

Re: learning Forth

Posted by [Neal Bridges](#) on August 02, 1999 at 12:01:50:

In Reply to: [learning Forth](#) posted by Dave Bennett on August 02, 1999 at 11:38:21:

> New at Forth. Know basic, C, C++, java, scheme, and too many others over the
> years. Love the Palm and love the idea of developing directly on it. In fact,
my
> Palm V is my main computer. But where do I go to learn Forth? Any suggestions
as
> to books and examples that can be used with Quartus Forth on the Palm would be
> greatly appreciated.

The Online Resources section of the manual has a number of links. You might also download the free 30-day evaluation of SwiftForth from www.forth.com -- there's a book included in PDF format: "The Forth Programmer's Handbook".

The Usenet group [comp.lang.forth](#) is an excellent resource, as is this discussion forum -- in fact that's why it's here.

Be sure also to download a copy of the ANSI Forth Standard -- the Rationale in particular is useful for anyone just starting out.

At first learning Forth may seem a larger chore than it really is. In fact it's a simpler language than most; once you're in the right mindset it'll click into place, and you'll be rolling. Be sure and ask any questions as you go!

Neal

Re: learning Forth

Posted by [Scott F. Barnes](#) on August 18, 1999 at 21:47:57:

In Reply to: [Re: learning Forth](#) posted by Neal Bridges on August 02, 1999 at 12:01:50:

Just decided it was time to start developing on the Palm. I experimented with Forth in College on my Acorn Atom. Had the Atom Forth book - which I haven't found, but I know it's in the basement somewhere.

I did find a book called "The Complete Forth" by Alan Winfield. Now I just have to find the time...

Can't wait.

Scott

Re: learning Forth

Posted by [Neal Bridges](#) on August 02, 1999 at 16:10:55:

In Reply to: [Re: learning Forth](#) posted by Neal Bridges on August 02, 1999 at 12:01:50:

> Any suggestions
> as
> > to books and examples that can be used with Quartus Forth on the Palm would be
> > greatly appreciated.

An addendum -- be sure to download the SDK docs from 3Com (PDF format). There's a wealth of necessary material in there about the internal operation of the Palm OS.

Neal

Re: learning Forth

Posted by [Dave Bennett](#) on August 03, 1999 at 18:19:15:

In Reply to: [Re: learning Forth](#) posted by Neal Bridges on August 02, 1999 at 16:10:55:

> > Any suggestions
> > as
> > > to books and examples that can be used with Quartus Forth on the Palm would
> > > be
> > > greatly appreciated.

> An addendum -- be sure to download the SDK docs from 3Com (PDF format). There's
> a wealth of necessary material in there about the internal operation of the Palm
> OS.

> Neal

Thanks. SwiftForth was a dead end. No Windows, No Where at work or at home. Can't do the Windows required installer thing. :(

Am onto the other things though. Thanks.

NEWBIE: How do I use a Bitmap in a resource?

Posted by [Phil Howlett](#) on August 02, 1999 at 02:58:11:

Hi,
I have created a bitmap in a resource file.
How do I use it (like display it on a form using an x,y co-ordinate)
Cheers,
Phil.

Re: NEWBIE: How do I use a Bitmap in a resource?

Posted by [Neal Bridges](#) on August 02, 1999 at 09:40:11:

In Reply to: [NEWBIE: How do I use a Bitmap in a resource?](#) posted by Phil Howlett on August 02, 1999 at 02:58:11:

> I have created a bitmap in a resource file.
> How do I use it (like display it on a form using an x,y co-ordinate)

As Erwin mentions, you can hard-code a bitmap into a form, and let the Palm OS display the bitmap for you at the coordinates you specify.

You can also use bitmaps as independent resources, placing them on the screen wherever you choose. This examples shows the display of a bitmap with id 3000 displayed at (30,20):

```
\ example  
  
needs resources  
\ an appropriate use-resources line here  
  
needs ids  
  
id Tbmp  
  
: DrawBitmapResource
```

```
( y x id type. --)
DmGetResource 2dup >r >r
  MemHandleLock
  WinDrawBitmap
  r> r> 2dup MemHandleUnlock throw
DmReleaseResource throw ;
```

```
20 30 3000 Tbmp DrawBitmapResource
```

Neal

Re: NEWBIE: How do I use a Bitmap in a resource?

Posted by [E. Ross Helton](#) on August 03, 1999 at 18:31:16:

In Reply to: [Re: NEWBIE: How do I use a Bitmap in a resource?](#) posted by Neal Bridges on August 02, 1999 at 09:40:11:

Hi Neal;

made the changes seen below to your example bitmap program. It crashes my pilot when I try to run it by itself and it crashed the program I try to run it in. Do you have any ideas? Where did I goof up?

```
\ example
needs resources
\ an appropriate use-resources line here
(ID) Rtrl (ID) rsrc use-resources
needs ids
id rtrl
```

```
: DrawBitmapResource
  ( y x id type. --)
  DmGetResource 2dup >r >r
  MemHandleLock
  WinDrawBitmap
  r> r> 2dup MemHandleUnlock throw
DmReleaseResource throw ;
```

```
20 30 1000 Rtrl DrawBitmapResource
```

Make it a good day!

Ross

Re: NEWBIE: How do I use a Bitmap in a resource?

Posted by [Neal Bridges](#) on August 03, 1999 at 20:52:31:

In Reply to: [Re: NEWBIE: How do I use a Bitmap in a resource?](#) posted by E. Ross Helton on August 03, 1999 at 18:31:16:

```
> made the changes seen below to your example bitmap program. It crashes my
pilot
> when I try to run it by itself and it crashed the program I try to run it in.
> Do you have any ideas? Where did I goof up?

> (ID) Rtrl (ID) rsrc use-resources
> needs ids
> id rtrl
```

First, if rtrl is in fact the resource type of your bitmap, check that it isn't spelled wrong -- I see you have Rtrl in the use-resources line.

Second:

```
20 30 1000 Rtrl DrawBitmapResource
```

Normally I'd expect to see Tbmp as the resource type, not Rtrl.

Neal

Re: NEWBIE: How do I use a Bitmap in a resource?

Posted by [Phil Howlett](#) on August 02, 1999 at 19:54:28:

In Reply to: [Re: NEWBIE: How do I use a Bitmap in a resource?](#) posted by Neal Bridges on August 02, 1999 at 09:40:11:

Neal,

Many thanks. This is exactly what I was after. :)

Is there some kind of documentation that I can look up so that I don't have to ask all these questions all the time? (I've got a few more I'd like to ask).

Cheers,
Phil.

```
> > I have created a bitmap in a resource file.
```

```
> > How do I use it (like display it on a form using an x,y co-ordinate)
> As Erwin mentions, you can hard-code a bitmap into a form, and let the Palm OS
> display the bitmap for you at the coordinates you specify.
> You can also use bitmaps as independent resources, placing them on the screen
> wherever you choose. This examples shows the display of a bitmap with id 3000
> displayed at (30,20):
>
> \ example
>
> needs resources
> \ an appropriate use-resources line here
>
> needs ids
>
> id Tbmp
>
> : DrawBitmapResource
>   ( y x id type. --)
>   DmGetResource 2dup >r >r
>     MemHandleLock
>       WinDrawBitmap
>     r> r> 2dup MemHandleUnlock throw
>   DmReleaseResource throw ;
>
> 20 30 3000 Tbmp DrawBitmapResource
>
> Neal
```

Re: NEWBIE: How do I use a Bitmap in a resource?

Posted by [Neal Bridges](#) on August 02, 1999 at 20:36:48:

In Reply to: [Re: NEWBIE: How do I use a Bitmap in a resource?](#) posted by Phil Howlett on August 02, 1999 at 19:54:28:

```
> Many thanks. This is exactly what I was after. :)
```

```
> Is there some kind of documentation that I can look up so that I don't have to
> ask all these questions all the time? (I've got a few more I'd like to ask).
```

The SDK documentation from 3Com covers what can and can't be done with resources; after that it's a straightforward matter of using the same techniques

in Quartus Forth. Be sure and download that documentation, and of course continue to ask questions -- that's the reason this forum exists!

Neal

Re: NEWBIE: 3Com Documentation

Posted by [Phil Howlett](#) on August 02, 1999 at 21:58:56:

In Reply to: [Re: NEWBIE: How do I use a Bitmap in a resource?](#) posted by Neal Bridges on August 02, 1999 at 20:36:48:

Hey Neal,

Thanks Again :) I've just downloaded and skimmed through the API functions.. very nice :)

I assume that the function definitions in forth are reversed.

For example, the DmGetResource function that you quoted earlier requires the parameters (according to the docs)

```
DmGetResource (Ulong type, Int ID);
```

Where the use of it in Forth is

```
ID type DmGetResource ;
```

It is in reverse order. Does this apply to ALL functions??

So for example, if there is a function defined as:

```
SomeAPIFunction (int a, int b, int c);
```

In forth the parameters are reversed? as in:

```
c b a SomeAPIFunction
```

Sorry for being so nieve, but I'm still getting use to the wonders of this great language.

Cheers,
Phil.

> > Many thanks. This is exactly what I was after. :)

> > Is there some kind of documentation that I can look up so that I don't have to

> > ask all these questions all the time? (I've got a few more I'd like to ask).

> The SDK documentation from 3Com covers what can and can't be done with
> resources; after that it's a straightforward matter of using the same
techniques

> in Quartus Forth. Be sure and download that documentation, and of course
> continue to ask questions -- that's the reason this forum exists!

> Neal

Re: NEWBIE: 3Com Documentation

Posted by [Neal Bridges](#) on August 02, 1999 at 22:15:22:

In Reply to: [Re: NEWBIE: 3Com Documentation](#) posted by Phil Howlett on August 02, 1999 at 21:58:56:

> Thanks Again :) I've just downloaded and skimmed through the API functions..
> very nice :)

> I assume that the function definitions in forth are reversed.

> For example, the DmGetResource function that you quoted earlier requires the
> parameters (according to the docs)

> DmGetResource (Ulong type, Int ID);

> Where the use of it in Forth is

> ID type DmGetResource ;

> It is in reverse order. Does this apply to ALL functions??

It does. The argument order is documented in the Quartus Forth manual.

> So for example, if there is a function defined as:

> SomeAPIFunction (int a, int b, int c);

> In forth the parameters are reversed? as in:

> c b a SomeAPIFunction

They are indeed.

> Sorry for being so nieve, but I'm still getting use to the wonders of this
> great
> language.

No problem! Ask any questions at all.

Neal

Re: NEWBIE: How do I use a Bitmap in a resource?

Posted by [Erwin Schomburg](#) on August 02, 1999 at 04:10:42:

In Reply to: [NEWBIE: How do I use a Bitmap in a resource?](#) posted by Phil Howlett on August 02, 1999 at 02:58:11:

> Hi,
> I have created a bitmap in a resource file.
> How do I use it (like display it on a form using an x,y co-ordinate)
> Cheers,
> Phil.

You can have your bitmap as an element inside a form resource, but then it would display at the static position you defined when creating/editing the resource. If that is not what you want, use the bitmap wordset from the library to create the bitmaps inside your program, then you can place them into the active form at coordinates you decide from your program.

/Erwin

Resource listing from RsrcEdit

Posted by [Roger Lawrence](#) on August 01, 1999 at 13:44:26:

Hi everybody.

I'm working on a new feature, first requested by Carl Jacobsen, and then by several others from this group and OnBoardC users. The plan is to have RsrcEdit produce a MemoPad record or DOC db with the contents of a resource db enumerated in preparation for use in code. Carl suggested a format like :

```
1000 CONSTANT 1000FormID
1001 CONSTANT 1001LabelID
1005 CONSTANT 1005FieldID
1006 CONSTANT 1006PushButtonID
etc...
```

[I'm not sure what to do about duplicates here - many forms may have Label #1001 etc.]

another user (Phillip, thanks) suggested :

```
rsrc-LostFound 07/25/99 10:45 AM
```

```
rsrc ### Title if any
tFRM 1001 LostFound
```

```
tSTR 2000
tALT 3000 Help
MBAR 5000 File
```

[I'm not sure if the Form components would be optionally generated as well. Also I can't be sure that the Title is available - I could only use the first 'well-formed' word in the form title, or replace spaces with '_' etc]

For C, the format would be :

```
#define Form1000 1000 // "Main Form"
#define Form1000_Field1001 1001
#define Form1000_Button1002 1002 // "Rhubarb"
#define String1000 1000 // "Leverstock Green"
#define Alert1001 1001 // "Error in options..."
```

My question for this group is obvious - what's the 'best' format for Forth? Is there a comment style i can use to add info. as in the C case above? Any comments about behaviours of this new feature?

Thanks in advance,
-roger

Re: Resource listing from RsrcEdit

Posted by [Neal Bridges](#) on August 05, 1999 at 16:39:41:

In Reply to: [Resource listing from RsrcEdit](#) posted by Roger Lawrence on August 01, 1999 at 13:44:26:

Hope my input isn't too late -- I went away thinking over which format I'd prefer, and eventually my mind drifted off topic.

I suggest something simple, along the lines of what Carl suggested:

```
1000 constant Form001
1001 constant Form001Label001
```

etc. This makes it simple to search/replace with meaningful names.

Neal

Re: Resource listing from RsrcEdit

Posted by [Carl Jacobsen](#) on August 01, 1999 at 16:47:10:

In Reply to: [Resource listing from RsrcEdit](#) posted by Roger Lawrence on August 01, 1999 at 13:44:26:

```
> I'm working on a new feature, first requested by Carl Jacobsen, and then
> by several others from this group and OnBoardC users. The plan is to have
> RsrcEdit produce a MemoPad record or DOC db with the contents of a resource
> db enumerated in preparation for use in code. Carl suggested a format like:
>
> 1000 CONSTANT 1000FormID
> 1001 CONSTANT 1001LabelID
> 1005 CONSTANT 1005FieldID
> 1006 CONSTANT 1006PushButtonID
> etc...
```

Wow, first off, it's great to hear that you're looking at adding this feature :-)

My original thought was that, once RsrcEdit had produced a list like the one above, the user would then likely edit 1001LabelID into TaxesLabelID, or ResultLabelID, or whatever was appropriate. Indeed, in some cases, like labels never referenced in the code, the user might simply delete the line. But the list would: 1) give one a starting place for building symbolic names for the items on the screen, 2) make it harder to "forget" elements in the resource database (i.e. the rarely used bitmap that somehow gets left out when the standalone executable is built), and 3) help ensure that one gets the correct ID numbers into the program (I've occasionally renumbered things in a form and then not gotten exactly the same changes into the corresponding constants -- with this I'd have to re-customize the output, but I'd be assured that the numbers were correct).

Of course, it'd be really cool to enter the symbolic names directly into RsrcEdit and have it generate the customized "include file" directly, but I suspect that would get much too complicated to be worth doing -- both in terms of screen space for all the extra names, and because the the names would have to be stored somewhere external from the resources, since you're operating directly on actual PalmOS resources (i.e. the data layout is fixed by Palm, and you can't just haul off and add fieldnames to it).

```
> [I'm not sure what to do about duplicates here - many forms may have
> Label #1001 etc.]
```

On one hand, the redefined constants shouldn't be a problem for Forth, on the other hand, if one goes through and renames things by hand, as discussed above, then there wouldn't be any duplication, and on the third hand, I generally try to make all my resource/field/etc ID numbers unique within a project, so that I can be relatively certain when I see 2003 in a variable, or on the stack, that it definitely is referencing a particular field in a particular form (this is just personal preference; I tend to number my forms as 1100, 1200, 1300, etc., and then all the ID

numbers in the form are 11XX, 12XX, etc.).

> another user (Phillip, thanks) suggested :

>

> rsrc-LostFound 07/25/99 10:45 AM

I'm guessing you'd want a "\ " (backslash, space) at the start of the line to make this a Forth comment.

> rsrc ### Title if any

> tFRM 1001 LostFound

> tSTR 2000

> tALT 3000 Help

> MBAR 5000 File

>

> [I'm not sure if the Form components would be optionally generated as well.

> Also I can't be sure that the Title is available - I could only use the

> first 'well-formed' word in the form title, or replace spaces with '_' etc]

Interesting, I hadn't thought of the idea of stealing names from the various titles...

> For C, the format would be :

>

> #define Form1000 1000 // "Main Form"

> #define Form1000_Field1001 1001

> #define Form1000_Button1002 1002 // "Rhubarb"

> #define String1000 1000 // "Leverstock Green"

> #define Alert1001 1001 // "Error in options..."

>

> My question for this group is obvious - what's the 'best' format for Forth?

> Is there a comment style i can use to add info. as in the C case above? Any

> comments about behaviours of this new feature?

Can't add further to the first question beyond what you've shown here; I'm interested to hear what other Forum members think of all this. As far as comments go, in Forth, parentheses (...) are equivalent to C's /* ... */ for inline comments, and backslash \ ... is equivalent to C's // ... for comment-to-end-of-line.

The thing to remember with Forth is that there isn't any magic punctuation, everything is just "words" separated by whitespace. So (hello) is *not* a comment, it's a word whose name is paren-h-e-l-l-o-paren. So, the single parens and backslashes for comments *must* be separated from other text by whitespace.

And once again, thanks for all the terrific work on RsrcEdit! It has made it possible for all us Quartus users to build standalone apps completely on the Pilot :-)

-- Carl

Newbie: "Resource db not found"

Posted by [Tom Clarke](#) on July 31, 1999 at 17:39:49:

I've read through and did the examples of most of Brodie's book... realized I really needed to just start coding (I was getting VERY intimidated by how much to learn!!!...) if I was to learn...

I used Carl Jacobsen's post of June 8 as a sample to 'copy'...

Following is the code....

```
\ PowerTest 7-31-99 TLC
```

```
NEEDS safe
```

```
NEEDS ids
```

```
NEEDS Events
```

```
NEEDS Fields
```

```
NEEDS resources
```

```
(ID) q__4 2CONSTANT crid
```

```
(ID) TLCTest crid use-resources
```

```
1000 CONSTANT MyFormID
```

```
1011 CONSTANT InputFieldID
```

```
1021 CONSTANT PowerFieldID
```

```
1031 CONSTANT ResultFieldID
```

```
1040 CONSTANT ButtonID
```

```
2VARIABLE Input
```

```
2VARIABLE Power
```

```
2VARIABLE Result
```

```
CREATE fd-buf 20 CHARS ALLOT
```

```
: field>d ( fieldID -- d. )
```

```
>R fd-buf DUP R>Field>string
```

```
0. 2SWAP >NUMBER 2DROP ;
```

```
: d>field ( d. fieldID -- )
```

```
>R <# #S #> R> string>Field ;
```

```
: d* ( d1. d2. -- d1*d2. )
```

```
>R >R 2DUP
```

```
R> 1 M*/ 2SWAP
```

```
R> 1 M*/ DROP 0 SWAP D+ ;
```

```
: grab-inputs ( -- )
```

```
InputFieldID field>d Input 2!
```

```
PowerFieldID field>d Power 2! ;
```

```
: calc-results ( -- )
```

```
Input 2@ Power 2@ d*
```

```
Result 2! ;
```

```
: show-results ( -- )
```

```
Result 2@ ResultFieldID d>field ;
```

```
: go ( -- )
MyFormID ShowForm
InputFieldID FieldFocus
BEGIN
ekey ctlSelectEvent = IF
event >abs itemid
ButtonID = IF
grab-inputs
calc-results
show-results
InputFieldID FieldFocus
THEN
THEN
AGAIN ;
```

Using RsrcEdit, I created a new file called TLCTest which has 1 record, size 450, Creator is TLC, Type is appl. Only "ResourceDB" is checked.

tFRM 1000 (it is the only resource inside of TLCTest) has only Modal and Usable checked... it has a Title, 3 Labels, 3 Fields (Field1011, Field1021, Field1031, and Button1040)

When I attempted to run it, I got the error: "Exception in file: PowerTest Resource db not found"

Any suggestions would be appreciated... Tom

Re: Newbie: "Resource db not found"

Posted by [Neal Bridges](#) on July 31, 1999 at 18:04:17:

In Reply to: [Newbie: "Resource db not found"](#) posted by Tom Clarke on July 31, 1999 at 17:39:49:

```
> (ID) q__4 2CONSTANT crid
> (ID) TLCTest crid use-resources
```

...

```
> Using RsrcEdit, I created a new file called TLCTest which has 1 record, size
> 450, Creator is TLC, Type is appl. Only "ResourceDB" is checked.
```

First, make your creator ID four characters long -- say, TLC! instead of TLC. Second, change your use-resources lines to use the creator ID and type:

```
(ID) TLC! 2CONSTANT crid
crid (ID) appl use-resources
```

Third, I recommend you use 'rsrc' as the type, so your resource database doesn't

appear in the Application launcher.

Neal

Bitmap question.

Posted by [E.](#) on July 31, 1999 at 02:53:17:

Making a self-displaying bitmap (as in the "telephone" example) only works up to 16x16, as far as I can tell. At least, 16x16 works and 17x17 (and 32x32) fails.

Is this a design decision, a side effect, or a bug? Given that I have a handful of 32x32 bitmaps, and it's a lot simpler both to create and to use them (for my newbie self, anyway) if I do it inside Quartus, rather than in RsrcEdit.

Is there a (nigh-unto) trivial workaround, or do I have to quadruple my number of bitmaps, by splitting them into 16x16 regions? Hm. Just now, I tried looking at "bitmap", and it looks like there's only room for one cell, which is 16 bits, yes? I suspect I'm screwed.

-E

Re: Bitmap question.

Posted by [Neal Bridges](#) on July 31, 1999 at 07:46:55:

In Reply to: [Bitmap question.](#) posted by E. on July 31, 1999 at 02:53:17:

> Making a self-displaying bitmap (as in the "telephone" example) only works up to
> 16x16, as far as I can tell. At least, 16x16 works and 17x17 (and 32x32)
fails.

Fails how? To do a 32-wide bitmap, you need to write two 16-bit binary numbers for each line:

```
32 32 bitmap mybitmap
2 base !
1010101010101010 , 1010101010101010 ,
...
```

> Is there a (nigh-unto) trivial workaround, or do I have to quadruple my number
> of bitmaps, by splitting them into 16x16 regions? Hm. Just now, I tried
> looking at "bitmap", and it looks like there's only room for one cell, which
is
> 16 bits, yes? I suspect I'm screwed.

I don't quite follow what you mean about 'only room for one cell' -- give the

above a try, let me know how it goes.

Neal

Re: Bitmap question.

Posted by [E.](#) on July 31, 1999 at 11:13:20:

In Reply to: [Re: Bitmap question.](#) posted by Neal Bridges on July 31, 1999 at 07:46:55:

> > 32x32 [bitmap] fails.

> Fails how?

Instead of a bitmap that looks like

AB

CD

(those being the 4 imaginary quarters of the individual bitmap), I'd get one that was more like

DD

XX

(where X is either garbage, or the A of another bitmap).

Did that make any sense?

> To do a 32-wide bitmap, you need to write two 16-bit binary numbers
> for each line:

Ah. Yes, indeed I do. That works very well.

> > Hm. Just now, I tried looking at "bitmap", and it looks like there's only
> > room for one cell, which is 16 bits, yes?

> I don't quite follow what you mean about 'only room for one cell' --

I meant that I was placing the blame in the wrong place. I was blaming bitmap, instead of blaming , (or even myself) for only taking the last 16 bits.

> give the above a try, let me know how it goes.

Was there doubt? :)

Thanks yet again.

-E

Another Quartus Forth sighting!

Posted by [Neal Bridges](#) on July 31, 1999 at 00:09:21:

Quartus Forth is on the companion CD that accompanies Glenn Bachmann's book, "Palm Programming", published by Sams. There's no actual text discussing it (or any other 3rd party solution), but nevertheless it's nice to see it there.

Neal

How to read Palm Hotsync name?

Posted by [Barry Ekstrand](#) on July 30, 1999 at 17:28:15:

I'm trying to figure out how to have QF read the Hotsync name of a Palm Device. I *assume* there is a system word to handle this, but being the novice I am, I can't figure out which one it is. What I'd like to do is read the name and store it as a string for manipulation. Any direction would be most appreciated!

Regards,

Barry Ekstrand

Re: How to read Palm Hotsync name?

Posted by [Neal Bridges](#) on July 30, 1999 at 20:23:01:

In Reply to: [How to read Palm Hotsync name?](#) posted by Barry Ekstrand on July 30, 1999 at 17:28:15:

> I'm trying to figure out how to have QF read the Hotsync name of a Palm
> Device. I *assume* there is a system word to handle this, but being the
novice
> I am, I can't figure out which one it is. What I'd like to do is read the
name
> and store it as a string for manipulation. Any direction would be most
> appreciated!

Straight from the file vinyards of Ernest and Julio Gallo:

```
\ syncname 98.6.8 5:14 pm NAB
```

```
create NameBuf 41 chars allot
```

```
: UserName ( -- c-addr u )  
  0.  0.  NameBuf >abs  0.  0.  0.
```

```
DlkGetSyncInfo drop
NameBuf dup >abs StrLen ;
```

Neal

Re: How to read Palm Hotsync name?

Posted by [Dave Bennett](#) on July 31, 1999 at 14:07:09:

In Reply to: [Re: How to read Palm Hotsync name?](#) posted by Neal Bridges on July 30, 1999 at 20:23:01:

```
>
> \ syncname 98.6.8 5:14 pm NAB
>
> create NameBuf 41 chars allot
>
> : UserName ( -- c-addr u )
>   0. 0. NameBuf >abs 0. 0. 0.
>   DlkGetSyncInfo drop
>   NameBuf dup >abs StrLen ;
>
```

> Neal

I'm on day 1 of q4th and I've added the above. needs syncname generates an error on StrLen. Thanks.

Dave

Re: How to read Palm Hotsync name?

Posted by [Neal Bridges](#) on July 31, 1999 at 14:11:35:

In Reply to: [Re: How to read Palm Hotsync name?](#) posted by Dave Bennett on July 31, 1999 at 14:07:09:

```
> >
> \ syncname 98.6.8 5:14 pm NAB
> >
> > create NameBuf 41 chars allot
> >
> > : UserName ( -- c-addr u )
> >   0. 0. NameBuf >abs 0. 0. 0.
> >   DlkGetSyncInfo drop
```

```
> > NameBuf dup >abs StrLen ;
```

```
> >
```

```
> > Neal
```

```
> I'm on day 1 of q4th and I've added the above. needs syncname generates an error
```

```
> on StrLen. Thenks.
```

```
Hi Dave. What version of Quartus Forth are you running?
```

```
Neal
```

Re: How to read Palm Hotsync name?

Posted by [Dave Bennett](#) on August 02, 1999 at 11:36:18:

In Reply to: [Re: How to read Palm Hotsync name?](#) posted by Neal Bridges on July 31, 1999 at 14:11:35:

```
> > >
```

```
\ syncname 98.6.8 5:14 pm NAB
```

```
> > >
```

```
> > > create NameBuf 41 chars allot
```

```
> > >
```

```
> > > : UserName ( -- c-addr u )
```

```
> > > 0. 0. NameBuf >abs 0. 0. 0.
```

```
> > > DlkGetSyncInfo drop
```

```
> > > NameBuf dup >abs StrLen ;
```

```
> > >
```

```
> > > Neal
```

```
> > I'm on day 1 of q4th and I've added the above. needs syncname generates an error
```

```
> > on StrLen. Thenks.
```

```
> Hi Dave. What version of Quartus Forth are you running?
```

```
> Neal
```

```
1.2.1U
```

```
Dave
```

Re: How to read Palm Hotsync name?

Posted by [Neal Bridges](#) on August 02, 1999 at 11:55:40:

In Reply to: [Re: How to read Palm Hotsync name?](#) posted by Dave Bennett on August 02, 1999 at 11:36:18:

> > > I'm on day 1 of q4th and I've added the above. needs syncname generates an
> > error
> > > on StrLen. Thanks.

> > Hi Dave. What version of Quartus Forth are you running?

> 1.2.1U

And what error are you getting?

Neal

Re: How to read Palm Hotsync name?

Posted by [Barry Ekstrand](#) on July 30, 1999 at 21:49:06:

In Reply to: [Re: How to read Palm Hotsync name?](#) posted by Neal Bridges on July 30, 1999 at 20:23:01:

> Straight from the file vinyards of Ernest and Julio Gallo:

Thanks, Neal. Talk about service! Although I do prefer Sutter Home or Mondavi, if you're taking notes.....

As always, the help is much appreciated!

Barry

Two rehashed questions.

Posted by [E.](#) on July 30, 1999 at 17:05:45:

I can find a few mentions of this in the forum archives, but nothing that really answers my questions.

I'm trying to create a table whose elements are (fixed-length) text. Right now, instead of using what my first thought was, which is

```
create texttable
s" one" drop ,
s" two" drop ,
s" thr" drop ,
s" fou" drop ,
```

I find that I have to create words called (e.g.) "one", "two", etc., which are of the form

```
: one s" one" drop ;
```

and say

```
create texttable
one , two , three , four ,
```

Using the "file" library file doesn't help.

For the table I have in mind, this would mean creating very many (over 100) words just to populate the table. This is clearly suboptimal. *snort*

I figure there's got to be a way to do it that doesn't involve such wheel-spinning. I toyed with using POSTPONE and IMMEDIATE, but I clearly don't understand when and how to use them appropriately.

Did I just overlook something amazingly obvious?

Second, I recall reading long ago (in the archives) that there is no barrier to using Quartus to produce hacks (other than "using assembler is a better plan"), and that there's a sample hack on your (Neal's) list of things to do. I see after that that you said (in response to someone saying "how about a sample of hack code for us?") that you said "Can do". I cannot, however, find it. I assume it's still pending, and hopefully not lying forgotten somewhere. :)

Obviously, it's not of anything approaching immediate importance.

-E

Re: Two rehashed questions.

Posted by [Neal Bridges](#) on July 30, 1999 at 20:11:01:

In Reply to: [Two rehashed questions.](#) posted by E. on July 30, 1999 at 17:05:45:

> I can find a few mentions of this in the forum archives, but nothing that really

> answers my questions.

> I'm trying to create a table whose elements are (fixed-length) text.

Consider using **place**, from *toolkit.txt*, or a similar technique.

> Second, I recall reading long ago (in the archives) that there is no barrier to
> using Quartus to produce hacks (other than "using assembler is a better plan"),
> and that there's a sample hack on your (Neal's) list of things to do. I see
> after that that you said (in response to someone saying "how about a sample
> of hack code for us?") that you said "Can do". I cannot, however, find it. I
> assume it's still pending, and hopefully not lying forgotten somewhere. :)

It's still pending; I have many things which have come nearly to fruition and will appear with the fullness of time. Waiting is.

Neal

Re: Two rehashed questions.

Posted by [E.](#) on August 04, 1999 at 06:24:51:

In Reply to: [Re: Two rehashed questions.](#) posted by Neal Bridges on July 30, 1999 at 20:11:01:

> > I'm trying to create a table whose elements are (fixed-length) text.
> Consider using **place**, from *toolkit.txt*, or a similar
> technique.

I'm considering the hell out of it. I can't seem to get the data in easily, or back out again reliably. I've been fighting with this thing for over an hour now, and while my code looks straightforward enough to ME, Quartus doesn't seem to like it.

This is my best attempt thus far:

```
\ grrr
needs string
needs toolkit
needs file

variable tblindex
here tblindex !

s" Element One           " drop 20 place,
( Yup, that's remnants of code. Didn't used to fill the string myself, )
( so I had to drop the "u" and replace it with 20. More on this below. )
( Will I never learn? )
s" Element Two           " drop 20 place,
s" Element Three         " drop 20 place,
```

...which is, as you can see, pretty nasty. I tried inserting, after here

tblindex !, the phrase tblindex @ 4400 blank, but that gave me a fatal exception. My efforts to fix this led into the absurd(create maintable 4400 allot maintable here !, which I didn't even bother to try), so I gave up and stuck with the spaces.

When I go into Quartus, and load that file, and do

```
tblindex @ 20 type
```

I get some garbage, and then my string. The garbage is character 0x14 in the "Standard" font (decimal 20). If I change the code above to drop 19 place, then the garbage at the front is decimal 4933(?). Even if I do tblindex plus a multiple of 20, I get the same thing. 0x14 or 4933. I tried doing 4933 20 type, just in case I was missing something. No luck there.

Now, this is easy enough to work around (tblindex 1 +!), but I think it points to either a flaw in place, or a flaw in my understanding thereof. I'm no fool, so I'm betting it's the latter.

Besides "how strings work in Forth", what SPECIFICALLY am I missing?

-E

Re: Two rehashed questions.

Posted by [Neal Bridges](#) on August 04, 1999 at 09:59:16:

In Reply to: [Re: Two rehashed questions.](#) posted by E. on August 04, 1999 at 06:24:51:

> > > I'm trying to create a table whose elements are (fixed-length) text.

> > Consider using **place**, from *toolkit.txt*, or a similar
> > technique.

> Besides "how strings work in Forth", what SPECIFICALLY am I missing?

Strings are just data in memory. What you're missing, I think, is that 'place,' puts a counted string in memory at HERE -- a string with its length stored as its first byte. Try this:

```
needs toolkit
needs file
```

```
10 array string
```

```
here 0 string !
s" First string" place,
here 1 string !
s" Second string" place,
```

```
here 2 string !  
s" Third string" place,  
1 string @ count type cr  
Neal
```

Re: Two rehashed questions.

Posted by [E.](#) on August 04, 1999 at 10:50:43:

In Reply to: [Re: Two rehashed questions.](#) posted by Neal Bridges on August 04, 1999 at 09:59:16:

```
> What you're missing, I think, is that  
> 'place,' puts a counted string in memory at HERE
```

No, I had that. That's why I bothered with tblindex in the first place. I THOUGHT it was a good idea.

I think the problem is in my understanding (and partial lack thereof) of here.

```
> -- a string with its length  
> stored as its first byte.
```

That would explain the 0x14s I was getting, yes.

```
> Try this:
```

It works, of course, but I must give it more study to figure out why. I don't like venturing into the cut-and-paste school of programming.

As always, many thanks.

-E

Re: Two rehashed questions.

Posted by [Neal Bridges](#) on August 04, 1999 at 17:46:29:

In Reply to: [Re: Two rehashed questions.](#) posted by E. on August 04, 1999 at 10:50:43:

```
> I think the problem is in my understanding (and partial lack thereof) of  
> here.
```

HERE always returns the next dataspace address. ALLOT adjusts HERE, as do , and friends. **place**, also uses ALLOT to adjust HERE.

```
needs toolkit
needs file
here . -> 620
s" Hello" place,
here . -> 626
```

Note that HERE moves up by 6 bytes as a result of the **place**, -- one byte for the length, 5 bytes for 'Hello'.

Neal

Re: Two rehashed questions.

Posted by [E.](#) on August 04, 1999 at 21:50:20:

In Reply to: [Re: Two rehashed questions.](#) posted by Neal Bridges on August 04, 1999 at 17:46:29:

> > I think the problem is in my understanding (and partial lack thereof) of
> > here.

> HERE always returns the next dataspace address. ALLOT adjusts HERE, as do
> , and friends. **place**, also uses ALLOT to adjust HERE.

It is like :NONAME, in that I see how it would be useful, if only I could understand how and when to use it. I lack the time to learn, at the moment. Optimizing comes later, I fear.

As it turns out, this whole discussion is academic. 220 strings, all of which are under 20 characters, gives me an Out of Dynamic Memory error. Even if I include just that memo, with nothing else loaded, it happens.

And Quartus goes BERSERK when that happens.

Lines between characters, PrefsDBOpen fatal error when you try to quit, etc. :)

I guess I need an external database. Hrm, where's my ORA book?

-E (not entirely pleased at this development)

Re: Two rehashed questions.

Posted by [Neal Bridges](#) on August 04, 1999 at 21:55:13:

In Reply to: [Re: Two rehashed questions.](#) posted by E. on August 04, 1999 at 21:50:20:

> As it turns out, this whole discussion is academic. 220 strings, all of which
> are under 20 characters, gives me an Out of Dynamic Memory error. Even if I

> include just that memo, with nothing else loaded, it happens.
> And Quartus goes BERSERK when that happens.
> Lines between characters, PrefsdBOpen fatal error when you try to quit, etc.
> :)
> I guess I need an external database. Hrm, where's my ORA book?
> -E (not entirely pleased at this development)

That shouldn't happen -- that much data is only 4.5 K or so. What model of Palm do you have? What's the value of HERE at the start and at the end of your string allocation? Are you using the method I outlined earlier?

Neal

Re: Two rehashed questions.

Posted by [Neal Bridges](#) on August 04, 1999 at 21:58:15:

In Reply to: [Re: Two rehashed questions.](#) posted by Neal Bridges on August 04, 1999 at 21:55:13:

I just found a potential problem in *toolkit.txt*:

```
: array ( cells -- )
  create cells here over 0 fill allot
does> swap cells + ;
```

Change this to

```
: array ( cells -- )
  create cells allot
does> swap cells + ;
```

And let me know if your situation improves. It should.

Neal

Re: Two rehashed questions.

Posted by [E.](#) on August 04, 1999 at 22:27:07:

In Reply to: [Re: Two rehashed questions.](#) posted by Neal Bridges on August 04, 1999 at 21:58:15:

[Combined posts, although it seems irrelevant now.]

> That shouldn't happen -- that much data is only 4.5 K or so. What model of
> Palm do you have? What's the value of HERE at the start and at the end of your
> string allocation? Are you using the method I outlined earlier?

I was indeed surprised. It's well under 4K, considering that some of them are 1 or 2 characters long.

3x, standard 4M. Um, I did a here after the error, and it was around 614, IIRC. Very low.

And yes, I was using your method.

Amazingly trivial note:

```
> : array ( cells -- )
```

isn't doing what you want. Browser is interpreting as a tag, and ignoring it. But hey, that's meaningless.

```
> And let me know if your situation improves. It should.
```

As usual, Neal, you work wonders. It loads just fine and I can extract data from it at will.

This is getting formulaic, but again, many thanks.

-E (stunned)

Re: Two rehashed questions.

Posted by [Neal Bridges](#) on August 04, 1999 at 22:42:14:

In Reply to: [Re: Two rehashed questions.](#) posted by E. on August 04, 1999 at 22:27:07:

```
> As usual, Neal, you work wonders. It loads just fine and I can extract data  
> from it at will.
```

```
> This is getting formulaic, but again, many thanks.
```

Glad it worked! That bit of evil code in 'array' went unnoticed until now; I daresay nobody had used it. Thanks for bringing it into the light.

Neal

Re: Two rehashed questions.

Posted by [E.](#) on August 04, 1999 at 22:29:12:

In Reply to: [Re: Two rehashed questions.](#) posted by E. on August 04, 1999 at 22:27:07:

```
> > : array ( cells -- )
> isn't doing what you want. Browser is interpreting as a tag, and
> ignoring it. But hey, that's meaningless.
```

And when I explicitly type it out, with the gt and lt tags, it ignores it as well. Neat.

Maybe `<name>` will work?

-E (babbling)

string> and >string

Posted by [Matthew Blair](#) on July 30, 1999 at 08:46:51:

Hi,

I wrote a `string>` (`c-addr u -- n`) and a `>string` (`n -- c-addr u`) word last night, but I seem to remember that these functions were already in Quartus, or at least somebody had posted them. I'm hoping to compare my function to the others... Any pointers?

Thanks,

Matthew Blair

Re: string> and >string

Posted by [Neal Bridges](#) on July 30, 1999 at 11:16:48:

In Reply to: [string> and >string](#) posted by Matthew Blair on July 30, 1999 at 08:46:51:

```
> I wrote a string> ( c-addr u -- n ) and a >string ( n -- c-addr u ) word
> last night, but I seem to remember that these functions were already in
> Quartus, or at least somebody had posted them. I'm hoping to compare my
> function to the others... Any pointers?
```

Hi Matthew. Are those words intended to put an integer in a field, or a string in a field, or a number in a string?

Neal

Re: string> and >string

Posted by [Matthew Blair](#) on July 30, 1999 at 11:52:35:

In Reply to: [Re: string> and >string](#) posted by Neal Bridges on July 30, 1999 at 11:16:48:

> > I wrote a string> (c-addr u -- n) and a >string (n -- c-addr u) word
> > last night, but I seem to remember that these functions were already in
> > Quartus, or at least somebody had posted them. I'm hoping to compare my
> > function to the others... Any pointers?

> Hi Matthew. Are those words intended to put an integer in a field, or a
string
> in a field, or a number in a string?

> Neal

Neal,

string> is intended to put string into a base10 integer, and >string
is the opposite. I did these as a learning exercise, but also because
(if you remember) the ultra-simple app I am writing takes an integer from
a field and computes its factorial.

I can see how these words could be extended to floating points, but I
wondered if somebody else had extended it to different bases. Also, since
I am still a Forth NEWBIE, I wanted to see how others had attacked the
problem.

Thanks,

Matt

Re: string> and >string

Posted by [Carl Jacobsen](#) on July 30, 1999 at 15:19:37:

In Reply to: [Re: string> and >string](#) posted by Matthew Blair on July 30, 1999 at 11:52:35:

> string> is intended to put string into a base10 integer, and >string
> is the opposite. I did these as a learning exercise, but also because
> (if you remember) the ultra-simple app I am writing takes an integer from
> a field and computes its factorial.

Hmm, this sounded really familiar, so I did a bit of poking around in the Forum archives, and found I wrote something just like this early in June; you can find it too, by searching the archives for "MultiplyExample", but that's a bit of a pain, so I extracted it and made it available at the URL below, if it's of any interest to you.

-- Carl

- [MultiplyExample_posting.txt](#)

Re: string> and >string

Posted by [Neal Bridges](#) on July 30, 1999 at 13:58:01:

In Reply to: [Re: string> and >string](#) posted by Matthew Blair on July 30, 1999 at 11:52:35:

> string> is intended to put string into a base10 integer, and >string
> is the opposite. I did these as a learning exercise, but also because
> (if you remember) the ultra-simple app I am writing takes an integer from
> a field and computes its factorial.

> I can see how these words could be extended to floating points, but I
> wondered if somebody else had extended it to different bases. Also, since
> I am still a Forth NEWBIE, I wanted to see how others had attacked the
> problem.

Here's >string, more generally called (.):

```
: (d.) ( d. -- c-addr u )  
  tuck dabs <# #s rot sign #> ;
```

```
: (.) ( n -- c-addr u )  
  s>d (d.) ;
```

The foundation of string> would be the Standard word >NUMBER, though you'd have to special-case negative numbers.

Neal

Re: string> and >string

Posted by [Matthew Blair](#) on August 04, 1999 at 15:42:47:

In Reply to: [Re: string> and >string](#) posted by Neal Bridges on July 30, 1999 at 13:58:01:

> Here's >string, more generally called (.):

>

```
> : (d.) ( d. -- c-addr u )
>   tuck dabs <# #s rot sign #> ;
```

>

```
> : (.) ( n -- c-addr u )
>   s>d (d.) ;
```

>

> The foundation of string> would be the Standard word >NUMBER, though you'd have
> to special-case negative numbers.

> Neal

Sorry to have taken so long to acknowledge this. After reading this post, I realized that I needed to get ahold of a good Forth tutorial (I had already perused the online tutorials listed in your links). I found a copy of "Starting Forth" at my library, and that has filled in the gaps. I did not realize when I wrote my string -> number and vice-versa that Forth had its own words for doing the same thing!

At any rate, thanks for your help (and Carl too!)

Thanks, again,

Matthew

Re: string> and >string

Posted by [Neal Bridges](#) on August 04, 1999 at 18:45:10:

In Reply to: [Re: string> and >string](#) posted by Matthew Blair on August 04, 1999 at 15:42:47:

> I found a copy of
> "Starting Forth" at my library, and that has filled in the
> gaps. I did not realize when I wrote my string -> number
> and vice-versa that Forth had its own words for doing the

> same thing!

For anyone using Starting Forth, here's a handy link.

Neal

- [Leo Brodie's Starting Forth examples, converted to ANS Forth by Benjamin Hoyt](#)

Problems with events.

Posted by [E.](#) on July 29, 1999 at 23:04:46:

So I get a key (using ekey) and pass it to mainhandler.

```
: mainhandler
  dup
  menuevent = if
    checkmenus \ this handles "event >abs itemid", etc.
  else dup penuevent = if
    checkpen
  then then
  drop
;
```

The problem is that when I use a menu to come to a form that cares where penup happens, I get a penup event where the menu item was. I can solve this with

```
ekey drop
```

when I get into that form, but it shouldn't HAPPEN, should it? The check for penups is inside the ELSE, so if the menu gets hit, it shouldn't check for the penup, right?

Now, as I said, I can work around that. However, I can not work around the fact that I get a penup event after dismissing an alert. "ekey drop" doesn't work.

```
AlertFooID frmalert
ekey drop
```

still gives me the penup.

I am, to say the least, puzzled.

What's the REAL way to prevent spurious penuevents?

-E

Re: Problems with events.

Posted by [Neal Bridges](#) on July 29, 1999 at 23:13:11:

In Reply to: [Problems with events.](#) posted by E. on July 29, 1999 at 23:04:46:

> So I get a key (using ekey) and pass it to mainhandler.

>

```
> : mainhandler
>   dup
>   menuevent = if
>     checkmenus \ this handles "event >abs itemid", etc.
>   else dup penupevent = if
>     checkpen
>   then then
>   drop
> ;
>
```

> The problem is that when I use a menu to come to a form that cares where penup happens, I get a penup event where the menu item was. I can solve this with

```
> ekey drop
>
```

> when I get into that form, but it shouldn't HAPPEN, should it? The check for penups is inside the ELSE, so if the menu gets hit, it shouldn't check for the penup, right?

And it isn't, not on that pass; but the penup event is in the queue, so the next time 'round the loop... there it is.

```
> Now, as I said, I can work around that. However, I can not work around the fact
> that I get a penup event after dismissing an alert. "ekey drop" doesn't work.
>
```

```
> AlertFooID frmalert
> ekey drop
>
```

> still gives me the penup.

> I am, to say the least, puzzled.

Odds on there are other events (window enter/exit, or the like) ahead of the penup. In your particular circumstance you may wish to flush the event queue after your alert, or what-have-you. This code will flush the event queue:

begin 0. (ekey) 0= until

Neal

Re: Problems with events.

Posted by [E.](#) on July 29, 1999 at 23:49:06:

In Reply to: [Re: Problems with events.](#) posted by Neal Bridges on July 29, 1999 at 23:13:11:

> begin 0. (ekey) 0= until

Brilliant. Thanks.

-E

M+ redefined?

Posted by [Bob Cunningham](#) on July 28, 1999 at 22:05:20:

I'm using the following support code during development (and during my learning curve):

```
NEEDS safe
NEEDS show-stack
NEEDS tester
NEEDS announce
NEEDS redefine
```

When "double" is read in under the above environment, I get the message "M+ is redefined".

Is there an instance of M+ hard-wired into Quartus Forth?

Is the redefinition of M+ within "double" redundant, or does it correct problems with the internal definition?

When I comment out this M+ definition, all *appears* to be OK, but I haven't done any thorough testing to make sure.

-BobC

Re: M+ redefined?

Posted by [Neal Bridges](#) on July 29, 1999 at 01:16:54:

In Reply to: [M+ redefined?](#) posted by Bob Cunningham on July 28, 1999 at 22:05:20:

> When "double" is read in under the above environment, I get the message "M+ is redefined".

> Is there an instance of M+ hard-wired into Quartus Forth?

> Is the redefinition of M+ within "double" redundant, or does it correct problems with the internal definition?

> When I comment out this M+ definition, all *appears* to be OK, but I haven't done any thorough testing to make sure.

Your assumption is correct; M+ is in the kernel and doesn't need to be in *double.txt*. It's a harmless leftover from the days of yore before M+ was internallized. It can be safely removed if you so choose.

Neal

Newbie question again...

Posted by [Matthew Blair](#) on July 28, 1999 at 14:30:54:

Hi all,

I'm trying to write a really simple application which ties in some basic Forth and basic Palm OS API calls. Essentially, the application consists of a form with 2 labels, a field, and a button. The top label text is "Integer: ", the field is next to the top label, the bottom label text is "Factorial: ", and the button is supposed to prompt the program to compute the factorial of whatever integer (within limits!) is entered on the field (whew!)

OK -- hope I haven't lost you yet!

The source code for this application is below. Currently, when the button is pushed, I just want to change the bottom label text. If I can do that, then the program is conceptually done. However, the code I've written to change the label text (using the Forms library file) does not seem to have any effect. I am not sure if that is because I have coded it wrong, or because I'm not even capturing the correct event.

Any help is appreciated (as always), and thanks to those who have given me assistance in the past.

Matthew

```
--- begin testapp ---  
  
\ testapp 2000-07-26 mpb  
  
needs ids  
needs resources  
needs Events  
needs Forms  
  
(ID) hiwa (ID) rsrc use-resources  
  
1001 constant Testform  
1202 constant cmpt  
1205 constant faclbl  
  
: show-panel ( -- )  
Testform ShowForm ;  
  
: do-event ( ekey -- )  
ctlSelectEvent = if  
event >abs itemid  
dup cmpt = if  
s" hi there" faclbl SetLabel  
then  
  drop  
then ;  
  
\ main entry point  
: go  
show-panel  
begin ekey do-event again ;  
  
--- end testapp ---
```

Re: Newbie question again...

Posted by [Carl Jacobsen](#) on July 28, 1999 at 17:28:40:

In Reply to: [Newbie question again...](#) posted by Matthew Blair on July 28, 1999 at 14:30:54:

```
> \ testapp 2000-07-26 mpb
```

First off, uh, I've heard of being on the other side of the international date line, but isn't this carrying things a bit far? :-)

Second, I guess I'll play "Neal-cache" this time, as he found and fixed this same problem for me a couple months ago: SetLabel doesn't do what you're thinking it does, it's for changing the label associated with a control (like a pushbutton). What you want is the systrap FrmCopyLabel,

and here's code that will handle it all for you (quoting code Neal wrote, several hundred Forum messages back):

needs Forms

```
: HideObject ( id -- )
  GetObjectIndex
  FrmGetActiveForm FrmHideObject ;

: ShowObject ( id -- )
  GetObjectIndex
  FrmGetActiveForm FrmShowObject ;

: ChangeLabel ( &zstring. id -- )
  DUP DUP >R HideObject
  FrmGetActiveForm FrmCopyLabel
  R> ShowObject ;
```

FrmCopyLabel, and hence ChangeLabel, expect the string to be zero-terminated. For the purposes of your testing code, you can take care of this by adding needs zstrings at the top of your code and using z" instead of S".
Replace this line:

```
s" hi there" faclbl SetLabel
```

with this:

```
z" hi there" faclbl ChangeLabel
```

The other thing to watch is, make sure the label in your resource contains at least as many characters as the string that you're going to scribble over the top of it, as FrmCopyLabel does not allocate any memory.

And, for a different approach to doing screen output, you might want to take a look at string>anyField in *PhoneDecode*.

Hope this helps,
-- Carl

Re: Newbie question again...

Posted by [Matthew Blair](#) on July 29, 1999 at 09:44:56:

In Reply to: [Re: Newbie question again...](#) posted by Carl Jacobsen on July 28, 1999 at 17:28:40:

>

```
> > \ testapp 2000-07-26 mpb
```

```
>
```

```
> First off, uh, I've heard of being on the other side of the international  
> date line, but isn't this carrying things a bit far? :-)
```

Whoops!

```
> Second, I guess I'll play "Neal-cache" this time, as he found and fixed  
> this same problem for me a couple months ago: SetLabel doesn't do what  
> you're thinking it does, it's for changing the label associated with a  
> control (like a pushbutton). What you want is the systrap FrmCopyLabel,  
> and here's code that will handle it all for you (quoting code Neal wrote,  
> several hundred Forum messages back):
```

(snipped)

I put your code in there, and now I seem to be getting a Fatal Exception Alert. The original label had the text "Factorial:", so I don't think the string length is the problem. My current code is at the end of this message.

I assume that what I needed to do instead of

```
z" hi" faclbl ChangeLabel
```

is

```
z" hi" drop faclbl ChangeLabel
```

to drop the string length off the TOS. Is that right?

Thanks for your help...

Matthew

needs ids

needs resources

needs Events

needs Forms

needs zstrings

```
(ID) hiwa (ID) rsrc use-resources
```

```
1001 constant Testform
```

```
1202 constant cmpt
```

```
1205 constant faclbl
```

```
: show-panel ( -- )
```

```
Testform ShowForm ;
```

```
: HideObject ( id -- )
```

```
GetObjectIndex
```

```
FrmGetActiveForm FrmHideObject ;
```

```
: ShowObject ( id -- )
```

```
GetObjectIndex
```

```
FrmGetActiveForm FrmShowObject ;
```

```
: ChangeLabel ( &zstring. id -- )
  dup dup >r HideObject
  FrmGetActiveForm FrmCopyLabel
  r> ShowObject ;

: do-event ( ekey -- )
  ctlSelectEvent = if
  event >abs itemid
  dup cmpt = if
  z" hi" drop faclbl ChangeLabel
  then
  drop
  then ;

\ main entry point
: go
show-panel
begin ekey do-event again ;
```

Re: Newbie question again...

Posted by [Neal Bridges](#) on July 29, 1999 at 09:52:20:

In Reply to: [Re: Newbie question again...](#) posted by Matthew Blair on July 29, 1999 at 09:44:56:

```
> I put your code in there, and now I seem to be getting a Fatal Exception
Alert.
> The original label had the text "Factorial:", so I don't think the string
> length is the problem. My current code is at the end of this message.

> I assume that what I needed to do instead of

>
z" hi" faclbl ChangeLabel

> is

>
z" hi" drop faclbl ChangeLabel

> to drop the string length off the TOS. Is that right?
```

Here's ChangeLabel from the previous message:

```
: ChangeLabel ( &zstring. id -- )
  DUP DUP >R HideObject
  FrmGetActiveForm FrmCopyLabel
  R> ShowObject ;
```

From the stack diagram, you can see it takes &zstring. as the string paramter. This is a 32-bit address. So what you need to do is:

```
z" hi" drop >abs faclbl ChangeLabel
```

Neal

Re: Newbie question again...

Posted by [Carl Jacobsen](#) on July 29, 1999 at 11:43:33:

In Reply to: [Re: Newbie question again...](#) posted by Neal Bridges on July 29, 1999 at 09:52:20:

```
> I assume that what I needed to do instead of  
> >
```

```
z" hi" faclbl ChangeLabel
```

```
> > is  
> >
```

```
z" hi" drop faclbl ChangeLabel
```

```
> > to drop the string length off the TOS. Is that right?  
>
```

```
> From the stack diagram, you can see it takes &zstring. as the string paramter.  
> This is a 32-bit address. So what you need to do is:
```

```
>  
>
```

```
z" hi" drop >abs faclbl ChangeLabel
```

Gack, yes, my apologies. Well, I did a good job of pasting in Neal's code :-), but I did a bad job of hooking it up with yours :-)

Sorry,
-- Carl

Re: Newbie question again...

Posted by [Matthew Blair](#) on July 29, 1999 at 10:10:04:

In Reply to: [Re: Newbie question again...](#) posted by Neal Bridges on July 29, 1999 at 09:52:20:

```
> Here's ChangeLabel from the previous message:
```

```
>
```

```
: ChangeLabel ( &zstring. id -- )  
>   DUP DUP >R HideObject  
>   FrmGetActiveForm FrmCopyLabel  
>   R> ShowObject ;  
>
```

> From the stack diagram, you can see it takes &zstring. as the string
paramter.

> This is a 32-bit address. So what you need to do is:

```
>  
z" hi" drop >abs fac1bl ChangeLabel  
> Neal
```

Yep. That worked like a charm! BTW (to see if I understand correctly),
the reason that you put a

>abs

in is because

we were passing this to a PalmOS systrap which requires 32-bit absolute
addresses, correct? And the c-address returned by zstring is a relative
address, right?

Another question: What is a relative address relative to? The beginning
of the code segment for Quartus? The beginning of the Quartus dataspace?

Thanks Neal and Carl,

Matt

Re: Newbie question again...

Posted by [Neal Bridges](#) on July 29, 1999 at 16:30:15:

In Reply to: [Re: Newbie question again...](#) posted by Matthew Blair on July 29,
1999 at 10:10:04:

> That worked like a charm!

Great!

> BTW (to see if I understand correctly),

> the reason that you put a

>abs

in is because

> we were passing this to a PalmOS systrap which requires 32-bit absolute
> addresses, correct? And the c-address returned by zstring is a relative
> address, right?

Correct on both counts.

> Another question: What is a relative address relative to? The beginning

> of the code segment for Quartus? The beginning of the Quartus dataspace?

Addresses are relative to the beginning of dataspace, so that stand-alone applications will be portable to any Palm device, regardless of where dynamic memory happens to start.

Neal

Re: Newbie question again...

Posted by [Neal Bridges](#) on July 28, 1999 at 16:20:32:

In Reply to: [Newbie question again...](#) posted by Matthew Blair on July 28, 1999 at 14:30:54:

> The source code for this application is below. Currently, when the button is
> pushed, I just want to change the bottom label text. If I can do that, then
> the program is conceptually done. However, the code I've written to change
the
> label text (using the Forms library file) does not seem to have any effect. I
> am not sure if that is because I have coded it wrong, or because I'm not even
> capturing the correct event.

I suggest using BEEP at appropriate points to see if your code is being executed when you expect it to. It's a handy technique.

Neal

Re: Newbie question again...

Posted by [Matthew Blair](#) on July 28, 1999 at 16:31:16:

In Reply to: [Re: Newbie question again...](#) posted by Neal Bridges on July 28, 1999 at 16:20:32:

> > The source code for this application is below. Currently, when the button
is
> > pushed, I just want to change the bottom label text. If I can do that,
then
> > the program is conceptually done. However, the code I've written to change
> the
> > label text (using the Forms library file) does not seem to have any
effect. I
> > am not sure if that is because I have coded it wrong, or because I'm not
even
> > capturing the correct event.

> I suggest using BEEP at appropriate points to see if your code is being

executed

> when you expect it to. It's a handy technique.

> Neal

It probably would be a handy technique for those of us who have full hearing :^) I am, however, hearing impaired; as such, I don't rely on the beeping of the Palm for anything!

I guess I could try to do a

MainForm Showform .s abort

inside of the

if...then structure in question. Would that work?

Thanks,

Matt

Re: Newbie question again...

Posted by [E.](#) on July 31, 1999 at 13:31:43:

In Reply to: [Re: Newbie question again...](#) posted by Matthew Blair on July 28, 1999 at 16:31:16:

> > I suggest using BEEP at appropriate points to see if your code is being
> > executed when you expect it to. It's a handy technique.

> It probably would be a handy technique for those of us who have full
> hearing :^) I am, however, hearing impaired; as such, I don't rely on the
> beeping of the Palm for anything!

This might be of some use.

needs backlight

: vbeep

backlight? 1- backlight

50. SysTaskDelay drop \ adjust to taste

backlight? 1- backlight

beep

;

-E

Re: Newbie question again...

Posted by [Neal Bridges](#) on July 31, 1999 at 13:38:52:

In Reply to: [Re: Newbie question again...](#) posted by E. on July 31, 1999 at 13:31:43:

> > > I suggest using BEEP at appropriate points to see if your code is being
> > > executed when you expect it to. It's a handy technique.

> > It probably would be a handy technique for those of us who have full
> > hearing :) I am, however, hearing impaired; as such, I don't rely on the
> > beeping of the Palm for anything!

```
> This might be of some use.  
> needs backlight  
> : vbeep  
> backlight? 1- backlight  
> 50. SysTaskDelay drop \ adjust to taste  
> backlight? 1- backlight  
> beep  
> ;  
> -E
```

I recommend you use

```
backlight? 0= backlight
```

to invert the backlight setting.

Neal

Re: Newbie question again...

Posted by [E.](#) on July 31, 1999 at 13:54:42:

In Reply to: [Re: Newbie question again...](#) posted by Neal Bridges on July 31, 1999 at 13:38:52:

```
> > backlight? 1- backlight
```

> I recommend you use

```
> backlight? 0= backlight
```

> to invert the backlight setting.

Grrr. Yeah. What I have now sort of evolved. I kept getting confused by the fact that SysTaskDelay was retuning a 0. I got code to work with that, traced it down, DROPPed it, and didn't bother completely fixing the rest of the code.

Too late at night to be trying this, I guess.

Although, (not to pick nits, merely because I'm confused) shouldn't
backlight? return TRUE or FALSE instead of 1 or 0? What am I not
understanding about this?

-E

Re: Newbie question again...

Posted by [Neal Bridges](#) on July 31, 1999 at 14:10:09:

In Reply to: [Re: Newbie question again...](#) posted by E. on July 31, 1999 at
13:54:42:

> Although, (not to pick nits, merely because I'm confused) shouldn't
> backlight? return TRUE or FALSE instead of 1 or 0? What am I not
> understanding about this?

The OS routine happens to return 1 and 0. To turn that into a Forth flag (0 or
all bits set), use 0= 0=, but generally it's unimportant to do so.

Neal

Re: Newbie question again...

Posted by [E.](#) on July 31, 1999 at 14:15:16:

In Reply to: [Re: Newbie question again...](#) posted by Neal Bridges on July 31,
1999 at 14:10:09:

> The OS routine happens to return 1 and 0. To turn that into a Forth flag (0
> or all bits set), use 0= 0=, but generally it's unimportant to do so.

Ah. PalmOS' fault. That's all I wanted to know, thanks. :)

-E

Re: Newbie question again...

Posted by [Neal Bridges](#) on July 28, 1999 at 17:59:50:

In Reply to: [Re: Newbie question again...](#) posted by Matthew Blair on July 28, 1999 at 16:31:16:

```
> > I suggest using BEEP at appropriate points to see if your code is being
> executed
> > when you expect it to. It's a handy technique.
```

```
> It probably would be a handy technique for those of us who have full
> hearing :^) I am, however, hearing impaired; as such, I don't rely on the
> beeping of the Palm for anything!
```

Point taken! Another technique I use is
needs facility

```
: myword
...
0 0 at-xy ." Something just happened"
... ;
```

Neal

Dictionary overflow?

Posted by [E.](#) on July 28, 1999 at 09:18:19:

I assume that means (at least sometimes) "You can't surround an 'OF..ENDOF' with an 'IF..THEN', genius!", yes?

I wasn't sure it would work, and hey, I was right. I managed to work around it by putting the IF..THEN inside the OF..ENDOF, but it leads to a whole lot more IF..THENS than I wanted.

I have 5 almost-identical forms, except that one of them needs to detect penup events in certain areas, whereas the others can worry only about menu events. I had hoped for something (really ugly) like

```
ekey
case MenuEvent of
  \ handle itemid and various menu functions here
endof
thisform @ uniqueform = if
  penup of
  case coords 2@ xy>area 1 of
    \ stuff
  endof
2 of
```

```
        \ otherstuff
    endof
endcase
then
endcase
```

...if that makes any sense. I don't really want to post my actual code here because it's huge, and I made up that example on the fly. If the syntax is off in this post, assume it works in my program, because (mod the dictionary overflow) it does.

As it stands, I have to put

```
thisform @ uniqueform = if
    \ stuff
then
```

inside every OF..ENDOF that applies only to that form, right?

I'm sure I could just write two event handlers and switch between them, but since the forms are SO similar, it would still be a lot of duplicated code.

I looked at case.txt, to see if I could find a workaround or patch. Ha. Yeah. Right.

Is there a workaround, or am I going to be using lots of IF..THENS?

-E (slowly understanding how this all fits together)

Re: Dictionary overflow?

Posted by [Neal Bridges](#) on July 28, 1999 at 09:24:20:

In Reply to: [Dictionary overflow?](#) posted by E. on July 28, 1999 at 09:18:19:

> I assume that means (at least sometimes) "You can't surround an 'OF..ENDOF' with
> an 'IF..THEN', genius!", yes?

Right -- that'll give you trouble.

> I wasn't sure it would work, and hey, I was right. I managed to work around it
> by putting the IF..THEN inside the OF..ENDOF, but it leads to a whole lot more
> IF..THENS than I wanted.

> I have 5 almost-identical forms, except that one of them needs to detect penup
> events in certain areas, whereas the others can worry only about menu events.

I'd do this: factor the common event-handling clauses into their own word, and

then write one definition per form that calls the common clauses, and adds any special cases. Test for the form once after receiving an event, and call the appropriate word.

Neal

Re: Dictionary overflow?

Posted by [E.](#) on July 28, 1999 at 09:55:02:

In Reply to: [Re: Dictionary overflow?](#) posted by Neal Bridges on July 28, 1999 at 09:24:20:

> I'd do this: factor the common event-handling clauses into their own word, and
> then write one definition per form that calls the common clauses, and adds any
> special cases.

Because 4 of them are identical, I can get away with writing just 2 (the unique one and then all the others). I do some neat trickery (well, *I* think it's neat, anyway, probably because I thought it up at 4 am) to check for Form X' events only while on Form X.

I thought of that approach earlier, in fact, and was just trying to squeeze the two handlers into one, because I'm not sure if/when I need to worry about callbacks and such. This is the most in-depth GUI programming I've ever done (a week of PerlTK last year didn't really prepare me for this), and the only even-approaching-real-time programming I've done. I've seen how you use callback in Duco and Year, but you use it in simple-handler, which you have said is no longer needed, yes? Does this also mean we don't need to worry about callbacks anymore?

> Test for the form once after receiving an event, and call the
> appropriate word.

Because you brought it up, I'm going to post what I composed but didn't post yesterday. If I'm switching between forms a lot, with a (totally imaginary) bit of code like this:

```
headed-to-form-1 if form1 showform form1handler
else headed-to-form-2 if form2 showform form2handler
else headed-to-form-3 if form3 showform form3handler
then then then
```

Do I need to worry about what will happen after the user changes forms several tens of thousands of times? If I change the handler with

```
['] form1handler eventhandler !
```

do I need to worry about events coming in before I leave the outer IF..THEN?

And what about HandleEvent? If I'm not doing anything but menus and PenUps, do I need it? MUST I have it? It doesn't look like it, because I can invoke all sorts of non-related events (Graffiti Help, etc.) in my current app. Of course, it's running inside of Quartus. Does that make a difference?

The problem is basically that I see lots of ways to do this, and lack the experience to choose which is the "best"/"right" way.

I think I will stick with the 2-handler model, though.

Thanks.

-E

Re: Dictionary overflow?

Posted by [Neal Bridges](#) on July 28, 1999 at 10:30:15:

In Reply to: [Re: Dictionary overflow?](#) posted by E. on July 28, 1999 at 09:55:02:

> I've seen how you use
> callback in Duco and Year, but you use it in simple-handler, which you have
said
> is no longer needed, yes? Does this also mean we don't need to worry about
> callbacks anymore?

Yes -- there's virtually never a need for a callback. Grab an event with EKEY,
and process it directly.

> Because you brought it up, I'm going to post what I composed but didn't post
> yesterday. If I'm switching between forms a lot, with a (totally imaginary)
bit
> of code like this:
>

```
> headed-to-form-1 if form1 showform form1handler  
> else headed-to-form-2 if form2 showform form2handler  
> else headed-to-form-3 if form3 showform form3handler  
> then then then  
>
```

> Do I need to worry about what will happen after the user changes forms several
> tens of thousands of times? If I change the handler with
>

```
> ['] form1handler eventhandler !  
>
```

> do I need to worry about events coming in before I leave the outer IF..THEN?

Don't use eventhandler -- it's only for special circumstances that are highly unlikely to arise with the more recent versions of Quartus Forth. Handle events normally with EKEY and you needn't worry about how often forms are switched, etc.

> And what about HandleEvent? If I'm not doing anything but menus and PenUps, do
> I need it? MUST I have it? It doesn't look like it,...

Don't worry about HandleEvent either. Stick with EKEY, it'll do what you need.

> The problem is basically that I see lots of ways to do this, and lack the
> experience to choose which is the "best"/"right" way.

EKEY is the way to go.

> I think I will stick with the 2-handler model, though.

From a factoring standpoint, it makes sense to move your handling into two words, I agree.

Neal

Re: Dictionary overflow?

Posted by [E.](#) on July 28, 1999 at 21:52:27:

In Reply to: [Re: Dictionary overflow?](#) posted by Neal Bridges on July 28, 1999 at 10:30:15:

> [T]here's virtually never a need for a callback. Grab an event with EKEY,
> and process it directly.

I am very relieved.

> >

> > headed-to-form-1 if form1 showform form1handler
> > else headed-to-form-2 if form2 showform form2handler
> > else headed-to-form-3 if form3 showform form3handler
> > then then then
> >

> > Do I need to worry about what will happen after the user changes forms
> > several tens of thousands of times?

> Handle events normally with EKEY and you needn't worry about how often forms
> are switched, etc.

Creative snipping so I can get to the point I didn't explicitly state, sorry.

(And bear with me, I don't know the technical terms.)

Will the IF..THEN code get resolved before I jump to the appropriate formhandler? I'm worried about leaving a bunch of no-longer-relevant code laying around. Should I be?

> EKEY is the way to go.

Great. :)

> > I think I will stick with the 2-handler model, though.

> From a factoring standpoint, it makes sense to move your handling into two > words, I agree.

Well, once I figured out how to go from 5 handlers to 2 (thanks to RsrcEdit's flexibility, FormID + AlertOneID == FormAlertOneID), I got a bit cocky, I guess. I'll have to remember that I'm not that good yet. *snicker*

-E

Re: Dictionary overflow?

Posted by [Neal Bridges](#) on July 29, 1999 at 01:15:06:

In Reply to: [Re: Dictionary overflow?](#) posted by E. on July 28, 1999 at 21:52:27:

> (And bear with me, I don't know the technical terms.)
> Will the IF..THEN code get resolved before I jump to the appropriate
> formhandler? I'm worried about leaving a bunch of no-longer-relevant code
> laying around. Should I be?

If I understand you, you're wondering if you need to 'clean up' the IF..THEN. You don't. Perhaps I see what you're getting at -- if you call one event-handling routine, and from within that start another routine that handles events for another form, which in turn may call the first word again, and so on -- that would eventually overflow the return stack, though it'd take a while.

If you find yourself in that spot, there's a way to use CATCH and THROW to circumvent the whole problem. Here's a sketch of one way to handle going back and forth between two (or more) forms:

```
1 constant firstform \ for example
2 constant secondform

: do-event
  ... ( a certain button/menuitem causes firstform THROW )
  ... ( a certain button/menuitem causes secondform THROW )
;

: handle-events
  begin ekey do-event again ;

: go
```

```
begin
  ['] handle-events catch
  dup firstform = if
    display-form1
  else
    dup secondform = if
      display-form2
    then
  then
  drop
again ;
```

What's happening here is that the main event handling loop is called via CATCH. When a form-change is requested by the user, via a button press or menu option or whatever other method you make available, a value is THROWN back that indicates which form to switch to, and processing continues while maintaining the depths of the respective stacks. This avoids the complication of potentially nesting deeper and deeper as you pass control from one handler to another.

Neal

Re: Dictionary overflow?

Posted by [E.](#) on July 29, 1999 at 03:31:13:

In Reply to: [Re: Dictionary overflow?](#) posted by Neal Bridges on July 29, 1999 at 01:15:06:

```
> Perhaps I see what you're getting at -- if you call one
> event-handling routine, and from within that start another routine that
> handles events for another form, which in turn may call the first word again,
> and so on -- that would eventually overflow the return stack, though it'd take
> a while.
```

That's exactly what I wanted to know, thanks.

```
> If you find yourself in that spot, there's a way to use CATCH and THROW to
> circumvent the whole problem. Here's a sketch of one way to handle going back
> and forth between two (or more) forms:
```

[snip]

```
> When a form-change is requested by the user, via a button press or menu option
> or whatever other method you make available, a value is THROWN back that
> indicates which form to switch to, and processing continues while maintaining
> the depths of the respective stacks.
```

Ah. This seems a bit better than my method. I was storing the xt of the handler for the appropriate form in a variable and EXECUTEing it after I got out of the loop. Not good Forth style, I fear.

> This avoids the complication of
> potentially nesting deeper and deeper as you pass control from one handler to
> another.

Excellent. Thanks so much.

-E

Re: Dictionary overflow?

Posted by [E.](#) on July 29, 1999 at 08:07:31:

In Reply to: [Re: Dictionary overflow?](#) posted by E. on July 29, 1999 at 03:31:13:

> > When a form-change is requested by the user, via a button press or menu
> > option or whatever other method you make available, a value is THROWN back
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> Ah. This seems a bit better than my method. I was storing the xt of the
> handler for the appropriate form in a variable and EXECUTEing it after I got
> out of the loop. Not good Forth style, I fear.

Wow. Not only not good Forth style, but just plain bad overall. Been working
on this practice app for two days (off and on). Now, after learning about CATCH
and THROW, it's done (completely rewritten, in fact) in about half an hour.

Again, thanks.

-E

Re: Dictionary overflow?

Posted by [Neal Bridges](#) on July 29, 1999 at 09:42:58:

In Reply to: [Re: Dictionary overflow?](#) posted by E. on July 29, 1999 at 08:07:31:

> Wow. Not only not good Forth style, but just plain bad overall. Been working
> on this practice app for two days (off and on). Now, after learning about
CATCH
> and THROW, it's done (completely rewritten, in fact) in about half an hour.

> Again, thanks.

No problem -- glad my explanation was sufficiently clear :) CATCH and THROW are
extrememly handy on occasion.

Neal

Re: Dictionary overflow?

Posted by [E.](#) on July 29, 1999 at 10:04:13:

In Reply to: [Re: Dictionary overflow?](#) posted by Neal Bridges on July 29, 1999 at 09:42:58:

> [G]lad my explanation was sufficiently clear :)

Very much so. Sample code usually carries more information than English. :)

> CATCH and THROW are
> extrememly handy on occasion.

Indeed.

Am I correct in assuming that they are, um... How best to phrase this? A software version of interrupts? I know that's not TECHNICALLY correct, but that's what they remind me of.

-E

Re: Dictionary overflow?

Posted by [Neal Bridges](#) on July 29, 1999 at 10:57:54:

In Reply to: [Re: Dictionary overflow?](#) posted by E. on July 29, 1999 at 10:04:13:

> > [G]lad my explanation was sufficiently clear :)

> Very much so. Sample code usually carries more information than English. :)

> > CATCH and THROW are
> > extrememly handy on occasion.

> Indeed.

> Am I correct in assuming that they are, um... How best to phrase this? A
> software version of interrupts? I know that's not TECHNICALLY correct, but
> that's what they remind me of.

"Exceptions" is the term. Distributed exception handling -- a vast improvement over simple 'error code' processing. It's used internally by Quartus Forth as well -- for instance, if you CATCH a word during which the user exits the application, you'll receive a -257 throw code that lets you do appropriate cleanup before exit.

Neal

Direct access to Palm UART (Arrgh!)

Posted by [Bob Cunningham](#) on July 27, 1999 at 21:58:14:

Follow the URL below and it should get you a copy of my current effort to directly manipulate the Palm UART to wiggle RTS and GPIO pins so that I may control the X-10 Firecracker RF interface.

With this code and a DMM, I have not seen either the RTS or GPIO pins change states. I have checked the code endless times. Have I missed something really stupid?

Please, would somebody try to reduce my stupidity here? I mean, this was supposed to be the EASY part of the project! I still have to finish the Firecracker protocol (written but not tested) and wrap everything in a GUI (resources done, code not started), but neither makes much sense if I can't talk to the UART.

One Golden Kudo to the first person who proves my ignorance beyond a reasonable doubt!

- [My code for UART.TXT](#)

Re: Direct access to Palm UART (Arrgh!)

Posted by [Neal Bridges](#) on July 27, 1999 at 22:30:06:

In Reply to: [Direct access to Palm UART \(Arrgh!\)](#) posted by Bob Cunningham on July 27, 1999 at 21:58:14:

> Follow the URL below and it should get you a copy of my current effort to
> directly manipulate the Palm UART to wiggle RTS and GPIO pins so that I may
> control the X-10 Firecracker RF interface.

> With this code and a DMM, I have not seen either the RTS or GPIO pins change
> states. I have checked the code endless times. Have I missed something
really
> stupid?

One of the handy features of Forth is that you can interactively test.

When you toggle the required bit yourself (using !a), does the specified pin change state? If not, the problem is likely in your method, not in your code; it's been awhile since I mucked about with the UART directly, but perhaps you haven't set the direction bit properly for the pin you're toggling, or perhaps there's another problem.

It's hard to know just glancing at the code, and I'd need to set up a multimeter and a Palm device to work out the method myself.

Work out the method first, then embody the method in the code.

Neal

(Oops, file was too close to 4K!)

Posted by [Bob Cunningham](#) on July 27, 1999 at 22:09:35:

In Reply to: [Direct access to Palm UART \(Arrgh!\)](#) posted by Bob Cunningham on July 27, 1999 at 21:58:14:

For convenience, I split the one large file into two smaller ones, uart_def.txt and uart.txt. Uart.txt is still the top file.

- [Here is the directory with the two files.](#)

Using Here and PrefGetAppPreferencesV10

Posted by [Philippe de Rochambeau](#) on July 27, 1999 at 17:28:34:

The PhoneDecode source uses Here to compute the size of preferences :

```
here constant prefstart
variable keypad
here prefstart - constant prefsiz
```

In general, what is here useful for?

What is the difference between PrefGetAppPreferences and PrefGetAppPreferencesV10?

Many thanks.

Philippe de Rochambeau

Re: Using Here and PrefGetAppPreferencesV10

Posted by [Carl Jacobsen](#) on July 27, 1999 at 18:17:49:

In Reply to: [Using Here and PrefGetAppPreferencesV10](#) posted by Philippe de Rochambeau on July 27, 1999 at 17:28:34:

```
> The PhoneDecode source uses Here to compute the size of preferences :  
>  
> here constant prefstart  
> variable keypad  
> here prefstart - constant prefsize  
>  
> In general, what is here useful for?
```

The code above is based upon an example Neal put up here on the Forum some time back. It's actually generating two useful side effects, 1) prefstart gives the starting address for the block of variables that will be stuffed into the saved preferences, while 2) prefsize gives the length of said block of variables.

In this case, obviously, with just one variable in the block, one could as easily use keypad as the address, and a length of 1 CELLS. The advantage to this more verbose method comes when you decide to add a few more variables to those saved in the preferences: just toss the additional variables in between the two lines starting with "here", and they'll automatically get saved and restored along with "keypad" (and it's always better to make the compiler do the math, anyways).

BTW, the PhoneDecode program was really just intended to be sort of a template program, so that I could jump through all the right hoops of Pilot/Forth program construction, without having too much actual content to worry about. As such, it has a number of things like the code above that looks more complicated than necessary at first glance. But the techniques start paying off once the program gets more involved.

(One of these days I'm gonna have to finish off one or the other of the next two programs I've written, so's I can toss something more out for public review.)

```
> What is the difference between PrefGetAppPreferences and  
> PrefGetAppPreferencesV10?
```

Hmm, you can compare the PalmOS SDK documentation for the two at the URL below, but I think the practical point here is that for simple cases either will work on newer Palms where the V10 version will also work on older Pilots. If the rest of your code has no problem working on older hardware, there's no reason to require the latest OS by using the newer version of a system call that offers additional capability you don't need.

Hope this helps,
-- Carl

- [PrefGetAppPreferences and PrefGetAppPreferencesV10 man pages](#)

Re: Using Here and PrefGetAppPreferencesV10

Posted by [Erwin Schomburg](#) on July 28, 1999 at 00:39:35:

In Reply to: [Re: Using Here and PrefGetAppPreferencesV10](#) posted by Carl Jacobsen on July 27, 1999 at 18:17:49:

> > The PhoneDecode source uses Here to compute the size of preferences :
> >
> > here constant prefstart
> > variable keypad
> > here prefstart - constant prefsiz
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> older Pilots. If the rest of your code has no problem working on older
> hardware, there's no reason to require the latest OS by using the newer
> version of a system call that offers additional capability you don't need.

> Hope this helps,
> -- Carl

And finally, HERE is a standard Forth word that gives you the current address to first free storage in dataspace. So if the question is "Where am I" in regards of data use, the answer is given by HERE. To e.g. calculate the size of a chunk of assorted data, you subtract HERE as it was (and stored into prefstart) from HERE as it is now and get prefsiz.

May the Forth be with you!
/Erwin

More on Tables

Posted by [Trevor Steele](#) on July 26, 1999 at 11:08:20:

Hi Neal

I have just returned from vacation (lucky me) and I was wondering if you had got a chance to look at the code which I posted on 6/30/99 giving the details on my problem with tables. Please let me know if you have any suggestions.

I even managed to get some more of my app written whilst I was away!

Regards

Trevor

Re: More on Tables

Posted by [Neal Bridges](#) on July 26, 1999 at 11:19:21:

In Reply to: [More on Tables](#) posted by Trevor Steele on July 26, 1999 at 11:08:20:

> I have just returned from vacation (lucky me) and I was wondering if you had
> got a chance to look at the code which I posted on 6/30/99 giving the details
> on my problem with tables. Please let me know if you have any suggestions.

I was seething with rage that you got to take a vacation while I had to work, so I cast your code into a dark corner. :)

Kidding. Actually I looked at it briefly; let me do so again and I'll get back to you.

> I even managed to get some more of my app written whilst I was away!

Hey, that's great!

Neal

Re: More on Tables

Posted by [Trevor Steele](#) on July 30, 1999 at 10:27:10:

In Reply to: [Re: More on Tables](#) posted by Neal Bridges on July 26, 1999 at 11:19:21:

> > I have just returned from vacation (lucky me) and I was wondering if you had
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> to you.
> > I even managed to get some more of my app written whilst I was away!
> Hey, that's great!
> Neal

Hi

Having got a bit fed up with my Palm III being reset on a rather frequent basis with my current table problem I decided to try and run the problem code on POSE in an effort to get some more details. The code again seems to go bananas when the FrmDrawForm API is called and POSE gives the following message:

Quartus 1.2.1 R has just performed an illegal operation. It just performed a "illegal instruction". Of course it is my code rather than Quartus which has made the error! Has anyone encountered this message before?

Best regards

Trevor

Re: More on Tables

Posted by [Neal Bridges](#) on July 30, 1999 at 11:13:58:

In Reply to: [Re: More on Tables](#) posted by Trevor Steele on July 30, 1999 at 10:27:10:

> Having got a bit fed up with my Palm III being reset on a rather frequent basis
> with my current table problem I decided to try and run the problem code on POSE
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> Quartus 1.2.1 R has just performed an illegal operation. It just performed a
> "illegal instruction". Of course it is my code rather than Quartus which has
> made the error! Has anyone encountered this message before?

That may well be caused by a return-stack imbalance in your callback -- that would result in a return to a place in memory that isn't valid code, hence the error. Guesses, mind you-- I'll take a closer look.

Neal

Re: More on Tables

Posted by [Trevor Steele](#) on July 30, 1999 at 16:00:19:

In Reply to: [Re: More on Tables](#) posted by Neal Bridges on July 30, 1999 at 11:13:58:

> > Having got a bit fed up with my Palm III being reset on a rather frequent
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> would result in a return to a place in memory that isn't valid code, hence
the
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> Neal

Hi again

I wonder if the code is getting to the point of even finding the callback as any attempt put ".s key drop" in the callback has no effect and the crash still occurs. However as I am very much a beginner at this and have never used a callback before I'm not sure if the above would halt the program anyway!

This is both very interesting and frustrating!! I must admit that I haven't been as hooked on programming since doing some basic assembly programs at college ;-)

Anyway if anyone has any further suggestions I'll be a willing listener.

Thanks

Trevor

Re: More on Tables

Posted by [Trevor Steele](#) on July 31, 1999 at 06:20:13:

In Reply to: [Re: More on Tables](#) posted by Trevor Steele on July 30, 1999 at 16:00:19:

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> This is both very interesting and frustrating!! I must admit that I haven't been
> as hooked on programming since doing some basic assembly programs at college
> i-)
> Anyway if anyone has any further suggestions I'll be a willing listener.
> Thanks
> Trevor

Hi

Thinking more about Neal's last reply and the use of the word callback I have tried inserting callback and end-callback into the drawcell word in my code. This has resulted in a very interesting and encouraging response!!

1. The code now finds the drawcell word and executes it for one loop until the end-callback is reached when it again objects with an "illegal instruction" message.

2. The .s which I placed in the drawcell word shows the stack to have 83 items! I have no idea where most of these have come from. This would perhaps suggest that Neal's stack imbalance theory is correct.

Could someone advise me if I should be using the callback, end-callback in this situation and how to go about properly implementing these words as the only information I can find in the manual is that the words make the return stack temporarily the data stack and vice-versa.

Thanks in anticipation

Trevor

Re: More on Tables

Posted by [Neal Bridges](#) on July 31, 1999 at 07:49:00:

In Reply to: [Re: More on Tables](#) posted by Trevor Steele on July 31, 1999 at 06:20:13:

> 2. The .s which I placed in the drawcell word shows the stack to have 83 items!
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.S won't display meaningful results from within a callback.

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Trevor, likely I'm the only one who can advise you on callback/end-callback, as I think you're one of the very few people who've ever used it. I need to sit down with your code and see what's what; I'm working hard to get to it as soon as I can.

Neal

Re: More on Tables

Posted by [Trevor Steele](#) on July 31, 1999 at 08:02:25:

In Reply to: [Re: More on Tables](#) posted by Neal Bridges on July 31, 1999 at 07:49:00:

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> down with your code and see what's what; I'm working hard to get to it as
soon
> as I can.

> Neal

Hi Neal

Many thanks for your prompt reply. I don't mean to hassle you as I know you are a busy man. I must admit that I can now see some light at the end of the tunnel since this is the first time I've managed to get the callback to do anything at all (even if it is only drawing one character at present before crashing!). I will await your comments with interest and I will keep you posted about any further developments with my code at this end.

Thanks

Trevor

Re: More on Tables

Posted by [Trevor Steele](#) on July 31, 1999 at 17:30:33:

In Reply to: [Re: More on Tables](#) posted by Trevor Steele on July 31, 1999 at 08:02:25:

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> a busy man. I must admit that I can now see some light at the end of the
> tunnel
> since this is the first time I've managed to get the callback to do anything
> at
> all (even if it is only drawing one character at present before crashing!). I
> will await your comments with interest and I will keep you posted about any
> further developments with my code at this end.
> Thanks

> Trevor

Hi Neal

You are brilliant! Your hunch about the stack imbalance proved correct. I checked the ANSI standard and it advised that "Thou shalt not remove anything from the return stack that thou hast not placed there in the first place".

I then went to the beach to think things over. That may seem a wonderful thing to do but if you've ever been to a beach in Northern Ireland you'll know that no matter how hot the day is the water's always cold! Anyway the shock of the cold water must have set my brain working again and so I revised my code. Since I had been removing items from the return stack which is of course the data stack in the callback I made sure they were not disturbed. The revised code which works and draws lots of "a"'s in each cell is shown below. All the parameters which the SDK reference said would be passed to the callback appear to be and everything seems to work fine.

```
: drawcell ( &bounds. col row &table. -- )
\ test cell draw procedure to draw an "a" in
\ each cell. This is based on the prototype
\ suggested in the palm SDK documentation. I
\ am assuming that the various arguments will
\ be passed to this routine on the stack.
callback
2>r dup >r row ! dup >r col ! 2dup
>rel cellbounds ! r> r> 2r>
cellbounds @ cell+ @ cellbounds @
@ s" a" swap >abs
WinDrawChars
end-callback ;
```

I can now proceed with the tables in my app. Many many thanks for the good advice, don't you just love it when a plan comes together:-)

Best regards

Trevor

Re: More on Tables

Posted by [Neal Bridges](#) on August 03, 1999 at 11:02:32:

In Reply to: [Re: More on Tables](#) posted by Trevor Steele on July 31, 1999 at 17:30:33:

> You are brilliant! Your hunch about the stack imbalance proved correct. I
> checked the ANSI standard and it advised that "Thou shalt not remove anything
> from the return stack that thou hast not placed there in the first place".

...

> I can now proceed with the tables in my app. Many many thanks for the good
> advice, don't you just love it when a plan comes together:-)

Hey, I'm glad to hear you got it sorted; equally glad I could help. Let us know how it goes!

Neal

More questions

Posted by [Matthew Blair](#) on July 26, 1999 at 08:00:10:

Hi,

I came up with a few more questions this weekend while reading/learning Forth.

(1) The "Simple Forth" HTML tutorial seems to indicate that loop structures such as BEGIN, DO, etc. should only be used in colon definitions. Why is this so?

(2) I looked at different source code for some Palm Programs, written in Quartus. What does the ">abs" do, as in "event >abs itemid" ?.

(3) Similarly, for the statement "(ID) hiwb (ID) resc use-resources"; I thought that the parens denoted a "local comment", like a stack diagram.

(4) Finally, what is an execution token? I came across this in the ANS Forth Standard. What would an execution token be used for?

Thanks for the help,

Matthew Blair

Re: More questions

Posted by [Neal Bridges](#) on July 26, 1999 at 09:33:50:

In Reply to: [More questions](#) posted by Matthew Blair on July 26, 1999 at 08:00:10:

> I came up with a few more questions this weekend while reading/learning Forth.

Erwin took a stab at these, and I'll do so also to give you additional perspective.

> (1) The "Simple Forth" HTML tutorial seems to indicate that loop structures
> such as BEGIN, DO, etc. should only be used in colon definitions. Why is this
> so?

The control-structure words are compiling words that lay down new code; as such

they need to have a current definition to lay that new code down in. It's possible to create versions of those words that work in interpretation state, but there's no practical reason for doing so.

> (2) I looked at different source code for some Palm Programs, written in
> Quartus. What does the ">abs" do, as in "event >abs itemid" ?.

>**abs** stands for "to absolute". It converts a 16-bit dataspace address into a 32-bit 'absolute' address so that the address can be passed to a Palm OS routine.

> (3) Similarly, for the statement "(ID) hiwb (ID) resc use-resources"; I
thought
> that the parens denoted a "local comment", like a stack diagram.

That's only true if the (is by itself, surrounded by whitespace.
(**ID**) is a whole name unto itself, with its own semantics.

> (4) Finally, what is an execution token? I came across this in the ANS Forth
> Standard. What would an execution token be used for?

An `xt` identifies a definition.

' page execute

is equivalent to

page

As an example, you might store an `xt` in a variable and use it elsewhere in your application; that way you could select what routine gets called by changing which `xt` is stored in that variable. This is known as 'vectoring'.

Neal

Re: More questions

Posted by [Barry Marks](#) on July 26, 1999 at 16:06:46:

In Reply to: [Re: More questions](#) posted by Neal Bridges on July 26, 1999 at 09:33:50:

> The control-structure words are compiling words that lay down new code; as
such

> they need to have a current definition to lay that new code down in. It's
> possible to create versions of those words that work in interpretation state,
> but there's no practical reason for doing so.

Can you explain this a little more? I thought compiling words created new words when they execute. `does>` and `:` for example. Do the control structures do that or do I misunderstand the meaning of "compiling words"? And if they do that, why can't they do that except within a compiled word?

Barry

Re: More questions

Posted by [Neal Bridges](#) on July 26, 1999 at 17:02:14:

In Reply to: [Re: More questions](#) posted by Barry Marks on July 26, 1999 at 16:06:46:

> > The control-structure words are compiling words that lay down new code; as
> such
> > they need to have a current definition to lay that new code down in. It's
> > possible to create versions of those words that work in interpretation
state,
> > but there's no practical reason for doing so.

> Can you explain this a little more? I thought compiling words created new
> words when they execute. does> and : for example. Do the control structures
> do that or do I misunderstand the meaning of "compiling words"? And if they
do
> that, why can't they do that except within a compiled word?

Perhaps I was a little free with my terminology -- by 'compiling words' I mean
words that actively lay down new code when executed; words that only have
compilation semantics.

In Quartus Forth (and others) BEGIN, AGAIN, etc. do in fact lay down new code
while in interpretation state -- but they do so uselessly, as there is no
current definition to provide an active context; in other words, no useful way
to go back and execute the code that was layed down.

As I said previously, while it's possible to make a system where BEGIN and
friends work from interpretation state, there's no added value in so doing; a
simple :NONAME provides the needed context.

Neal

Re: More questions

Posted by [Barry Marks](#) on July 26, 1999 at 23:47:34:

In Reply to: [Re: More questions](#) posted by Neal Bridges on July 26, 1999 at 17:02:14:

> Perhaps I was a little free with my terminology -- by 'compiling words' I
mean
> words that actively lay down new code when executed; words that only have
> compilation semantics.

What does "compilation semantics" mean? I don't think I know what the whole
sentence means.

I guess I also don't understand why is DO a compiling word. Does> and : are obviously compiling words. I realize DO has to put some stuff on the stack that LOOP can act on, but what code does it make when executing?

Barry

Re: More questions

Posted by [Neal Bridges](#) on July 27, 1999 at 00:35:19:

In Reply to: [Re: More questions](#) posted by Barry Marks on July 26, 1999 at 23:47:34:

> > Perhaps I was a little free with my terminology -- by 'compiling words' I
> mean
> > words that actively lay down new code when executed; words that only have
> > compilation semantics.

> What does "compilation semantics" mean? I don't think I know what the whole
> sentence means.

That's Standard-speak -- it means those words only have a defined function while in compilation-state.

> I guess I also don't understand why is DO a compiling word. Does> and : are
> obviously compiling words. I realize DO has to put some stuff on the stack
> that LOOP can act on, but what code does it make when executing?

DO compiles code that establishes the loop index and limit on the return stack, and also puts a do-sys on the control stack for LOOP to resolve.

Neal

Re: More questions

Posted by [Neal Bridges](#) on July 27, 1999 at 09:34:42:

In Reply to: [Re: More questions](#) posted by Neal Bridges on July 27, 1999 at 00:35:19:

> DO compiles code that establishes the loop index and limit on the return
stack,
> and also puts a do-sys on the control stack for LOOP to resolve.

Bear in mind that this is all about the internal mechanisms of the compiler, and isn't something you need to know when developing apps.

The key fact from the developer's perspective is that DO..LOOP (among others) is a compile-only construct, and can't be used outside of a : or :NONAME definition.

Neal

Re: More questions

Posted by Erwin on July 26, 1999 at 16:48:52:

In Reply to: [Re: More questions](#) posted by Barry Marks on July 26, 1999 at 16:06:46:

> > The control-structure words are compiling words that lay down new code; as
> such
> > they need to have a current definition to lay that new code down in. It's
> > possible to create versions of those words that work in interpretation
state,
> > but there's no practical reason for doing so.

> Can you explain this a little more? I thought compiling words created new
> words when they execute. does> and : for example. Do the control structures
> do that or do I misunderstand the meaning of "compiling words"? And if they
do
> that, why can't they do that except within a compiled word?

> Barry

The control structure words are compiling words in the meaning that they compile the conditional branch and jump (back) target addresses into the current definition.

I'm sure Neal can explain this much more elaborate and complete, but we have seen that my simplifying answers were sometimes all the requestor wanted to know about it, take your pick.

May the Forth be with you!

/Erwin

Re: More questions

Posted by [Barry Marks](#) on July 26, 1999 at 23:50:22:

In Reply to: [Re: More questions](#) posted by Erwin on July 26, 1999 at 16:48:52:

> > > The control-structure words are compiling words that lay down new code;
> as

> > such

> > > they need to have a current definition to lay that new code down in.

It's

> > > possible to create versions of those words that work in interpretation

> state,

> > > but there's no practical reason for doing so.

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> > words when they execute. does> and : for example. Do the control

structures

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> do

> > that, why can't they do that except within a compiled word?

> > Barry

> The control structure words are compiling words in the meaning that they
compile

> the conditional branch and jump (back) target addresses into the current

> definition.

> I'm sure Neal can explain this much more elaborate and complete, but we have

> seen that my simplifying answers were sometimes all the requestor wanted to
know

> about it, take your pick.

Thanks. I hadn't thought of that.

Barry

Re: More questions

Posted by [Erwin Schomburg](#) on July 26, 1999 at 09:12:09:

In Reply to: [More questions](#) posted by Matthew Blair on July 26, 1999 at
08:00:10:

> Hi,

> I came up with a few more questions this weekend while reading/learning Forth.

> (1) The "Simple Forth" HTML tutorial seems to indicate that loop structures
> such as BEGIN, DO, etc. should only be used in colon definitions. Why is this
> so?

Different reasons.

One is (plump) what sense does it make outside a definition, how do you pass
parameters, how do you calculate where to jump to (or from)?

Another is the loop structure words put markers and magic numbers on stack
during compile time to resolve jump addresses and check for matching structure
words.

> (2) I looked at different source code for some Palm Programs, written in
> Quartus. What does the ">abs" do, as in "event >abs itemid" ?.

">abs" blows up a 16bit value (i.e. a relative address) on top of stack to a
32bit value (absolute address), mainly for use in calls to the OS, where address
parameters are required to be passed as absolute (32bit) values.

> (3) Similarly, for the statement "(ID) hiwb (ID) resc use-resources"; I
thought

> that the parens denoted a "local comment", like a stack diagram.

The open parentheses, stand alone and space delimited, is a valid Forth word,
instructing parsing to ignore following text until a close parentheses is
encountered. On the other hand the whole "(ID)" is a valid space delimited Forth
word, whereby there is a kind of convention to put helper or low level words in
parentheses as part of the word.

> (4) Finally, what is an execution token? I came across this in the ANS Forth
> Standard. What would an execution token be used for?

An execution token is the address of a Forth word you can pass to the EXECUTE
word to have the (former) word executed. Confusing? I hope so 8-)

The tick word "'" gives you the execution token of the following word on top of
stack:

```
' bye \ give execution token for "bye" on stack  
EXECUTE \ take top of stack and execute the word whose token was there.
```

> Thanks for the help,

> Matthew Blair

May the Forth be with you!

/Erwin

Afterburner II

Posted by [Carl Jacobsen](#) on July 25, 1999 at 17:16:26:

Okay, maybe I'm the last one to have thought of it, but the freeware Afterburner II hack, which fiddles with the clock rate on Palm IIIx's and V's (apologies to those with older machines), can make Quartus run **really** fast. My IIIx can run Quartus at 29 Mhz with no trouble at all (though, oddly, the Afterburner control app crashes about every fourth time I bring it up, which is not very often).

I know, I know recompiling a large project in ten seconds instead of twenty isn't a huge deal, but when you're waiting eagerly to see if your latest change worked, it can feel like quite an improvement.

Disclaimers: 1) I have no connection to the Afterburner author, 2) I never said that Quartus is slow (frankly, I'm still amazed that it can do what it does, in the first place), just that even faster == even better, 3) Afterburner is operating well outside the intended limits of the Palm, and is thus "Your Mileage May Vary" in a major way -- some people have reported crashes at various higher speeds. And, 4) It's not my fault if your Pilot flies out of the room and off to Mars when after you install Afterburner.

-- Carl

- [Afterburner II at PilotGear](#)

Re: Afterburner II

Posted by [Neal Bridges](#) on July 25, 1999 at 20:29:22:

In Reply to: [Afterburner II](#) posted by Carl Jacobsen on July 25, 1999 at 17:16:26:

> Okay, maybe I'm the last one to have thought of it, but the freeware
> Afterburner II hack, which fiddles with the clock rate on Palm IIIx's
> and V's (apologies to those with older machines), can make Quartus
> run **really** fast. My IIIx can run Quartus at 29 Mhz with no
> trouble at all (though, oddly, the Afterburner control app crashes
> about every fourth time I bring it up, which is not very often).

I've tried it myself; set to the highest speed, after about 20 minutes I think the internals must overheat, as Quartus Forth starts misreading data from the MemoPad. Beware.

Neal

Re: Afterburner II, QF misreading data

Posted by [Mark Beckman](#) on July 30, 1999 at 20:05:22:

In Reply to: [Re: Afterburner II](#) posted by Neal Bridges on July 25, 1999 at 20:29:22:

...
> I've tried it myself; set to the highest speed, after about 20 minutes I think
> the internals must overheat, as Quartus Forth starts misreading data from the
> MemoPad. Beware.

> Neal

I can get QF to apparently "misread" the memopad data by being impatient and "graffiti"ing or typing ahead before the memo is processed. It is not very consistent but it seems to happen more frequently if the type ahead contains shortcuts or commands. Its not a problem I just need to be more patient, however your problem with Afterburner II could actually be this .

Mark

Re: Afterburner II, QF misreading data

Posted by [Neal Bridges](#) on July 30, 1999 at 20:25:23:

In Reply to: [Re: Afterburner II, QF misreading data](#) posted by Mark Beckman on July 30, 1999 at 20:05:22:

> ...
> > I've tried it myself; set to the highest speed, after about 20 minutes I
> think
> > the internals must overheat, as Quartus Forth starts misreading data from
the
> > MemoPad. Beware.

> > Neal

> I can get QF to apparently "misread" the memopad data by being impatient and
> "graffiti"ing or typing ahead before the memo is processed. It is not very
> consistent but it seems to happen more frequently if the type ahead contains
> shortcuts or commands. Its not a problem I just need to be more patient,
> however your problem with Afterburner II could actually be this .

No, it's not that -- though I am familiar with what you speak of; best I can determine is that under some rare circumstances the ROM graffiti-recognition interrupt routines corrupt the CPU status flags.

Neal

Re: Afterburner II

Posted by [Erwin Schomburg](#) on July 26, 1999 at 05:27:25:

In Reply to: [Re: Afterburner II](#) posted by Neal Bridges on July 25, 1999 at 20:29:22:

> > Okay, maybe I'm the last one to have thought of it, but the freeware
> > Afterburner II hack, which fiddles with the clock rate on Palm IIIx's
> > and V's (apologies to those with older machines), can make Quartus
> > run **really** fast. My IIIx can run Quartus at 29 Mhz with no
> > trouble at all (though, oddly, the Afterburner control app crashes
> > about every fourth time I bring it up, which is not very often).

> I've tried it myself; set to the highest speed, after about 20 minutes I think
> the internals must overheat, as Quartus Forth starts misreading data from the
> MemoPad. Beware.

> Neal

I'm all against overclocking, but I still continue to use Afterburner more on the safe side: if you set zero waitstates and fast multiplexing a "StreakHack-ed" PIIIx goes 161% in Benchmark if set to normal, if set to 13MHz it still goes 125% and saves a lot of battery juice. Having threaded Hotsync through IRLink and having set that to "normal" in Afterburner, even a cradle-button Hotsync works without further intervention when the rest of the machine is set to slow down.

/Erwin

Random wisdom?

Posted by [Carl Jacobsen](#) on July 24, 1999 at 06:22:33:

This first seems really profound to me right now. Likely it would seem somewhat less so if I weren't feverish and awake at 3am:

"In Forth, there are no reserved words,
there are only words that got there ahead of you..."

"Forth: the language where you have to sweat the details,
but no more than three or four deep at a time..."

"The real key to factoring isn't that you only keep a few things
on the stack -- indeed, if you're ten or twenty well-factored words

deep on the call stack you may have many dozens of cells on the data stack -- the trick is that with good factoring, you only have to pay attention to the last two or three things on the stack at any given time..."

-- Carl-who-still-remembers-an-old-bumper-sticker-that-said:
FORTH LOVE IF HONK THEN

Re: Random wisdom?

Posted by [Neal Bridges](#) on July 24, 1999 at 11:30:59:

In Reply to: [Random wisdom?](#) posted by Carl Jacobsen on July 24, 1999 at 06:22:33:

> This first seems really profound to me right now. Likely it would
> seem somewhat less so if I weren't feverish and awake at 3am:

> "In Forth, there are no reserved words,
> there are only words that got there ahead of you..."

This has a lot of truth. I'd say that the words that reflect internal mechanisms of the compiler/interpreter out to the developer are reserved, if not in name then certainly in function.

> "Forth: the language where you have to sweat the details,
> but no more than three or four deep at a time..."

> "The real key to factoring isn't that you only keep a few things
> on the stack -- indeed, if you're ten or twenty well-factored words
> deep on the call stack you may have many dozens of cells on the data
> stack -- the trick is that with good factoring, you only have to pay
> attention to the last two or three things on the stack at any given
> time..."

Quite so. I do strive to keep the actual depth of the stack as low as possible, but there are certain occasions where the depth can grow a bit; nevertheless, as you say, with good factoring you are only *dealing with* a few items at a time.

> -- Carl-who-still-remembers-an-old-bumper-sticker-that-said:
> FORTH LOVE IF HONK THEN

I like BEGIN COFFEE AWAKE UNTIL. :)

Neal

using button on alert box in RsrcEdit

Posted by [E. Ross Helton](#) on July 23, 1999 at 16:58:40:

Hi;

Does anyone know offhand what value is given when you use a 'Yes' and a 'No' response button in an alert box in RsrcEdit?

I want to have the alert message box come up and give the user two options, but have figured out what I would refer the Forth code to do.

Make it a good day!

Ross

Re: using button on alert box in RsrcEdit

Posted by [Carl Jacobsen](#) on July 23, 1999 at 17:05:29:

In Reply to: [using button on alert box in RsrcEdit](#) posted by E. Ross Helton on July 23, 1999 at 16:58:40:

> Does anyone know offhand what value is given when you use a 'Yes' and a 'No' response button in an alert box in RsrcEdit?

If I recall correctly, the button listed first in RsrcEdit comes back from FrmAlert as 0, the second button listed comes back as 1, and so on.

So if your buttons were listed in RsrcEdit as 'Yes' and 'No', in that order, Yes would be 0 and No would be 1.

-- Carl

Re: using button on alert box in RsrcEdit

Posted by [E. Ross Helton](#) on July 23, 1999 at 19:19:04:

In Reply to: [Re: using button on alert box in RsrcEdit](#) posted by Carl Jacobsen on July 23, 1999 at 17:05:29:

Hi Carl;

I know that it is that way in Visual Basic and other languages where I have programmed a message box with 'Yes' and 'No' buttons.

> If I recall correctly, the button listed first in RsrcEdit comes back from
> FrmAlert as 0, the second button listed comes back as 1, and so on.

> So if your buttons were listed in RsrcEdit as 'Yes' and 'No', in that order,
> Yes would be 0 and No would be 1.

Thanks

Make it a good day!

Ross

Any X-10 Users Out There?

Posted by [Bob Cunningham](#) on July 23, 1999 at 09:48:42:

Yesterday I received a bunch of nearly free X-10 equipment: An X-10 Firecracker Starter Kit (free + \$7 s&h) and two IBM Home Director starter kits (\$10 each from Worthington). The Firecracker is a tiny X-10 RF transmitter that looks like a small DB-9 null modem connector. It is a pass-through connector that uses RTS and DTR to signal a small RF chip to do its thing.

I've stayed up all night porting some code from Java to QF, to see if I can get the Firecracker to work with the Palm. I am concerned 3.3v will not be enough to power it, but I won't know for sure until I try. I think I have solved the lack of DTR on the Palm serial port by using the QPIO output pin, and then jumpering pins 4 and 6 on the back of the Firecracker to route QPIO to DTR.

I'm taking a break now, mainly because I've just exceeded the 4K notepad limit and fell off the roll I was on. And because it is time for breakfast.

If anyone is interested in my ugly untested code, I'm happy to share it. Otherwise, I'll let you know how it goes. I've decided to write directly to the UART hardware, simply because the Palm serial API doesn't expose the bits I need to control and manipulate GPIO.

I'd also like to be able to program a delay that's shorter than the minimum provided by PalmOS. Has anyone taken over one of the Dragonball timers for this purpose? Are any of the Dragonball timers unused by PalmOS?

Also, I'm interested in finding an "RS-232 restorer", a device that boosts all RS-232 signals to full spec levels. I'm hoping such a device could be created today with a single Maxim device and a 9v battery (well, ok, the spec is 12v, but anything over 5v should do fine). And it would be cool if it fit in a M-F DB-9 housing. Anyone heard of such a beastie?

Now, where's that paperclip I need to jumper the Firecracker pins?

-BobC

Re: Any X-10 Users Out There?

Posted by [Carl Jacobsen](#) on July 23, 1999 at 11:45:41:

In Reply to: [Any X-10 Users Out There?](#) posted by Bob Cunningham on July 23, 1999 at 09:48:42:

> Yesterday I received a bunch of nearly free X-10 equipment: An X-10
> Firecracker Starter Kit (free + \$7 s&h) and two IBM Home Director starter kits
> (\$10 each from Worthington). The Firecracker is a tiny X-10 RF transmitter
> that looks like a small DB-9 null modem connector. It is a pass-through
> connector that uses RTS and DTR to signal a small RF chip to do its thing.

On the off chance that anyone in here has been hiding under a rock long enough to not have heard of the X10 equipment: it's a system of home automation controls; it originally started out as programmable timers and remotely switchable outlet modules that communicated over your house wiring. Some time back, they added wireless remotes and a computer interface. I've got a couple friends who have been using this stuff for the past decade, to turn their house lights on and off at preprogrammed times, and other such things.

Anyways, the X-10 company has been "giving away" a whole bunch of minimal starter kits of late, presumably with the hope that some percentage of the takers will get hooked and buy a bunch more equipment ("here kids, and the first one's free"). I finally broke down and ordered their starter kit, because, well, for six bucks, uh, I've thrown more money away on less useful things before :-)

This deal seems to be "sponsored" by various other sites (likely just a way to generate publicity for both); one that I know of that's currently running the offer is [freshmeat.net](#); SlashDot.org was running such an offer a while back, but I think that one is over (both of these are very cool sites in their own right, by the way).

> ... Otherwise, I'll let you know how it goes. ...

I, for one, would be interested in hearing about any interesting things you can get your Pilot to do in ontrolling the X10 hardware (especially with Quartus, of course)...

They already have a wireless remote, but a PalmPilot could make one very programmable wireless remote :-)

-- Carl

- [X10 offer through FreshMeat.net](#)

Re: Any X-10 Users Out There?

Posted by [Bob Cunningham](#) on July 23, 1999 at 14:58:25:

In Reply to: [Re: Any X-10 Users Out There?](#) posted by Carl Jacobsen on July 23, 1999 at 11:45:41:

> They already have a wireless remote, but a PalmPilot could make one
> very
> programmable wireless remote :-)

Precisely! My plan is to do the following:

1. Get the CM17A (Firecracker) core routines working.
2. Add a PalmPad (no relation) work-alike GUI.
3. Make it a HackMaster extension. (Can QF do that?)
4. Discuss adding the code to OmniRemote and RemoCon.

That would make the Palm an **ultimate** remote control!

-BobC

Re: Any X-10 Users Out There?

Posted by [Neal Bridges](#) on July 23, 1999 at 15:22:29:

In Reply to: [Re: Any X-10 Users Out There?](#) posted by Bob Cunningham on July 23, 1999 at 14:58:25:

> > They already have a wireless remote, but a PalmPilot could make one
> very
> > programmable wireless remote :-)

> Precisely! My plan is to do the following:

- > 1. Get the CM17A (Firecracker) core routines working.
> 2. Add a PalmPad (no relation) work-alike GUI.
> 3. Make it a HackMaster extension. (Can QF do that?)

It can, but you might better want to work in assembler for a hack.

Neal

Tangential post

Posted by [E.](#) on July 23, 1999 at 05:33:50:

When composing my previous post ("Quartus Forth words?", below), I mentioned an imaginary definition for DUP, which was

>R R@ R>

This is vaguely reminiscent of the sorts of stack-handling that I have found necessary when trying to write Forth in a strictly Machine Forth implementation, such as that of the F21 chip (link below). Having searched the web, however, I have been unable to find a useful tutorial for Machine Forth like I have been able to find for Forth in general or Quartus in particular. Does anyone happen to know of such a creature? If so, email would be gratefully accepted.

Of course, while it's difficult to do, it's certainly a lot of fun to write the "other" stack-handling words, given just DUP, DROP, OVER, >R and R>. And it has certainly given me new insight as to why stack-thrashing is considered bad. When ROT takes 14 words (at least, that's my best effort), it becomes clear why some people say you should restrict access to the two top stack elements. And I've gotten quite a bit more conscientious about not littering the return stack.

Neal, feel free to delete this post and accept my apology if it's too far off-topic.

-E

- [UltraTechnology](#)

Re: Tangential post

Posted by [Neal Bridges](#) on July 23, 1999 at 09:39:33:

In Reply to: [Tangential post](#) posted by E. on July 23, 1999 at 05:33:50:

> Having searched the web, however, I
> have been unable to find a useful tutorial for Machine Forth like I have been
> able to find for Forth in general or Quartus in particular. Does anyone
happen
> to know of such a creature? If so, email would be gratefully accepted.

Machine Forth, being a notion tossed out by Chuck Moore via Jeff Fox, isn't formalized or standardized or even well-documented; it's not surprising there's no tutorial available. I did see someplace a documented attempt to do Machine Forth on an ARM processor; that might help.

Neal

Re: Tangential post

Posted by [E.](#) on July 23, 1999 at 21:30:35:

In Reply to: [Re: Tangential post](#) posted by Neal Bridges on July 23, 1999 at 09:39:33:

> > Having searched the web, however, I
> > have been unable to find a useful tutorial for Machine Forth

> Machine Forth, being a notion tossed out by Chuck Moore via Jeff Fox, isn't
> formalized

Indeed. True but (at this point) understandable. Things in the actual process of being created often aren't.

> or standardized

The more I read about Moore and Fox' work, and the more comp.lang.forth I read, the more I begin to see the lack of a standard as an overall negative.

I figure that if it evolves into a useful tool, it will at least remain standard on a per-architecture basis. So it'll end up similar to how ASM is today.

> or even well-documented;

Yeah. I would LIKE to believe "it's so simple it documents itself", but this is rarely the case, I find.

> it's not surprising there's
> no tutorial available. I did see someplace a documented attempt to do Machine
> Forth on an ARM processor; that might help.

Seen it. I was toying with writing one myself, but I doubt I have both the skill and the audience.

Well, it's a nice toy, for now.

-E

Re: Tangential post

Posted by [William Tanksley](#) on July 24, 1999 at 12:18:18:

In Reply to: [Re: Tangential post](#) posted by E. on July 23, 1999 at 21:30:35:

> > Machine Forth, being a notion tossed out by Chuck Moore via Jeff Fox, isn't
> > formalized or standardized

> The more I read about Moore and Fox' work, and the more comp.lang.forth I
> read, the more I begin to see the lack of a standard as an overall negative.

I can't agree. It's a specific negative, but then it's entirely caused by the youth of the concept itself. When MF grows up, we can standardize it.

I don't think it'll grow up -- Moore likes it, but he's moved on to Color Forth, which has quite a bit of growing to do itself.

> I figure that if it evolves into a useful tool, it will at least remain
> standard on a per-architecture basis. So it'll end up similar to how
> ASM is today.

Possibly, but that's not the intent -- it's supposed to be a superficially portable assembler. Fast on the platform you write it for, runnable elsewhere.

> > or even well-documented;

> Yeah. I would LIKE to believe "it's so simple it documents itself", but this
> is rarely the case, I find.

The basic instruction set (P21) is reasonably well-documented. What's missing is the idea, the concept, so that we can know whether our slightly different implementation is also Machine Forth.

A fun toy, as you say.

> -E

-Billy

Re: Tangential post

Posted by [E.](#) on July 24, 1999 at 12:48:49:

In Reply to: [Re: Tangential post](#) posted by William Tanksley on July 24, 1999 at 12:18:18:

> > I figure that if it evolves into a useful tool, it will at least remain
> > standard on a per-architecture basis. So it'll end up similar to how
> > ASM is today.

> Possibly, but that's not the intent -- it's supposed to be a superficially
> portable assembler. Fast on the platform you write it for, runnable
> elsewhere.

Ah. Then I was misled by the existence of the P21.

> The basic instruction set (P21) is reasonably well-documented.

Yeah. It'd be hard to avoid, seeing how simple it is.

> What's missing
> is the idea, the concept, so that we can know whether our slightly different
> implementation is also Machine Forth.

Hm. Okay. I had assumed that the concept was there and it was the standard that was lacking.

> A fun toy, as you say.

I'd take it over raw ASM any day.

-E

Re: Tangential post

Posted by [E.](#) on July 24, 1999 at 03:47:36:

In Reply to: [Re: Tangential post](#) posted by E. on July 23, 1999 at 21:30:35:

> The more I read about Moore and Fox' work, and the more comp.lang.forth I read,

> the more I begin to see the lack of a standard as an overall negative.

Wow, that didn't come out right. I meant the LESS I begin to see...

Sheesh.

-E

Re: Tangential post

Posted by [Neal Bridges](#) on July 24, 1999 at 11:18:24:

In Reply to: [Re: Tangential post](#) posted by E. on July 24, 1999 at 03:47:36:

> > The more I read about Moore and Fox' work, and the more comp.lang.forth I read,

> > the more I begin to see the lack of a standard as an overall negative.

> Wow, that didn't come out right. I meant the LESS I begin to see...

I agreed with your first statement. Standardization is key to sharing information between developers. Beyond that was the standardization of C that brought it to the forefront; likewise the standardization of Forth has been a tremendous positive influence. Personally I was intrigued by Forth for years, but had no interest in learning one specific system, only to have to learn another. Common semantics for common names is vital.

Neal

Re: Tangential post

Posted by [E.](#) on July 24, 1999 at 12:31:25:

In Reply to: [Re: Tangential post](#) posted by Neal Bridges on July 24, 1999 at 11:18:24:

> > > [...] the more I begin to see the lack of a standard as an overall
> > > negative.

> > Wow, that didn't come out right. I meant the LESS I begin to see...

> I agreed with your first statement.

Yeah, I didn't figure that one would be too controversial. :)

> Standardization is key to sharing

> information between developers.

While I agree with the general case ("Standards are good"), I think that some implementations thereof are not necessarily what I myself would have chosen.

And yes, before anyone brings it up, I am aware that I lack the technical skills to comment on the Forth standard from other than a HIGHLY subjective viewpoint.

Perhaps I have been seduced by the heresies of Moore and Fox (et al), but the standard appears (from my relative newbie point of view) to go too far in some directions and not far enough in others.

-E (who deleted about a hundred lines before settling on this)

Re: Tangential post

Posted by [Neal Bridges](#) on July 24, 1999 at 18:41:32:

In Reply to: [Re: Tangential post](#) posted by E. on July 24, 1999 at 12:31:25:

> While I agree with the general case ("Standards are good"), I think that some
> implementations thereof are not necessarily what I myself would have chosen.

> And yes, before anyone brings it up, I am aware that I lack the technical
skills

> to comment on the Forth standard from other than a HIGHLY subjective
viewpoint.

> Perhaps I have been seduced by the heresies of Moore and Fox (et al), but the
> standard appears (from my relative newbie point of view) to go too far in some
> directions and not far enough in others.

I am fairly well-qualified to comment on the Forth standard -- it's a beautiful Forth, and presents no barriers to producing excellent applications.

Neal

Re: Tangential post - Rules for standards

Posted by [Serg Koren](#) on July 25, 1999 at 10:22:29:

In Reply to: [Re: Tangential post](#) posted by Neal Bridges on July 24, 1999 at 18:41:32:

"Standards are design by committee."

1 Usually this is a VERY bad thing.

2 It depends on the committee (the people on the committee).

3 The bigger the committee the worse it is.

4 The more management types in the committee the worse it is.

5 The more the committee has at stake (has invested in the topic) the better it is.

6 The more heads (leaders) the committee has the worse it is (leadership of the committee by committee).

7 Committee does not equate to teamwork

8 Committees don't know how to write readable documentation

9 Committees are self-perpetuating

10 The most work is done by a committee of one.

Just made these up from my observations of how standards committees work and committees in general. Wonder how many of these apply to the FORTH committee.

Re: Tangential post - Rules for standards

Posted by [Neal Bridges](#) on July 25, 1999 at 11:26:00:

In Reply to: [Re: Tangential post - Rules for standards](#) posted by Serg Koren on July 25, 1999 at 10:22:29:

> "Standards are design by committee."

Standards, when done well, codify existing practice, are open to peer review, and are updated at intervals. The ANSI Forth Standard meets all these criteria.

As with any group effort, the results can be good or bad; the investment of the individuals involved is a determining factor.

The Forth standardization effort was made up of volunteers from the industry -- an impressive list, all with a vested interest.

The loudest complaint I've heard about the Standard was largely the concern of one individual who felt the wording of the Standard should allow this:

```
: compile-cr
  postpone cr
;

: someword
  ." Some text"
  [ compile-cr ]
  ." Some more text"
;
```

In other words, allowing compilation of code while in interpretation state. The example above works in Quartus Forth, for what it's worth, but it isn't a Standard requirement that it do so, and that has now been formally clarified by the Technical Committee.

Beyond that, it's never necessary to employ the technique shown; by making `compile-cr` an IMMEDIATE word it can be used from compilation state, and away you go.

Neal

Re: Tangential post

Posted by [E.](#) on July 24, 1999 at 23:03:51:

In Reply to: [Re: Tangential post](#) posted by Neal Bridges on July 24, 1999 at 18:41:32:

> [The current Forth standard] presents no barriers to producing excellent
> applications.

Perhaps I was unclear. Whatever else I may think of Standard Forth, I was never arguing with the above. The best example of a phenomenon (programming language, web server, OS, whatever) can be outstanding without being perfect (from an individual's standpoint) in every detail. Sorry if it sounded like I was ragging on Forth. This is very much not the case. Even though I see things that I personally would change, it is, for my needs, the best thing going.

In fact, now that I've moved from random poking around to actually developing a Palm app, I'm even MORE impressed by its speed, interface, and ease of development.

Now if only I could figure out the Palm interface... *scowl*

-E

Re: Tangential post

Posted by [Neal Bridges](#) on July 24, 1999 at 23:08:43:

In Reply to: [Re: Tangential post](#) posted by E. on July 24, 1999 at 23:03:51:

> In fact, now that I've moved from random poking around to actually developing a

> Palm app, I'm even MORE impressed by its speed, interface, and ease of development.

> Now if only I could figure out the Palm interface... *scowl*

It takes a bit of study. Let me know if I can help.

Neal

Re: Tangential post

Posted by [Neal Bridges](#) on July 23, 1999 at 09:33:00:

In Reply to: [Tangential post](#) posted by E. on July 23, 1999 at 05:33:50:

> When ROT takes 14 words (at least, that's my best effort), it becomes clear why

> some people say you should restrict access to the two top stack elements.

14 words? Here's ROT in 4 words:

```
: ROT ( a b c -- b c a )  
>R SWAP R> SWAP ;
```

Stack thrashing isn't a bad thing from an efficiency standpoint -- stack words are short and fast. The trouble comes of trying to juggle multiple items in your head. The best Forth definitions are those that you can visually examine and know without in-depth analysis to be correct; having more than three or four arguments on the stack makes that difficult.

There's a knack to knowing what order to pass arguments, also -- comes with practice. Generally the principle of 'what where' that words like @ follow is good.

Neal

Re: Tangential post

Posted by [E.](#) on July 23, 1999 at 21:37:27:

In Reply to: [Re: Tangential post](#) posted by Neal Bridges on July 23, 1999 at 09:33:00:

> > When ROT takes 14 words (at least, that's my best effort), it becomes clear
> > why some people say you should restrict access to the two top stack
> > elements.

> 14 words? Here's ROT in 4 words:

```
>  
> ROT ( a b c -- b c a )  
>   >R SWAP R> SWAP ;  
>
```

Yeah, but I said using just DUP, DROP, OVER, >R and R>.

Since SWAP is 6 instructions (again, my personal best, not an absolute), it's equivalent. In fact, given my definition of SWAP, your ROT expands into exactly what I came up with for ROT.

Interestingly, -ROT can be done in 2 less instructions than 2 ROTs would add up to.

> Stack thrashing isn't a bad thing from an efficiency standpoint -- stack words
> are short and fast. The trouble comes of trying to juggle multiple items in
> your head.

Yeah. As usual, *I* am the bottleneck in the system.

> There's a knack to knowing what order to pass arguments, also -- comes with
> practice. Generally the principle of 'what where' that words like @
> follow is good.

I hadn't considered this, because I'm not far enough along to work with words that have this sort of behavior. I have, however, filed it. :)

-E

D*

Posted by [Vadim Zaliva](#) on July 22, 1999 at 18:53:40:

Hi!

I can't find D* and D/ words in quartus.
If there is an easy way to define them?

Vadim

Re: D*

Posted by [Neal Bridges](#) on July 22, 1999 at 19:24:13:

In Reply to: [D*](#) posted by Vadim Zaliva on July 22, 1999 at 18:53:40:

> Hi!

> I can't find D* and D/ words in quartus.

> If there is an easy way to define them?

Start with *dblmath.txt* for an unsigned double/double divide:
ud/mod. This can be easily enhanced to do a signed division.

As to the multiplication, here's a routine courtesy of Carl Jacobsen:

```
: d* ( d1. d2. -- d1*d2. )  
  >R >R 2DUP  
  R> 1 M*/ 2SWAP  
  R> 1 M*/ DROP 0 SWAP D+ ;
```

Neal

Another newbie question

Posted by [Matthew Blair](#) on July 22, 1999 at 09:46:42:

Hi again, and thanks to those who responded to my earlier question.

I am following the On-board Development Tutorial by Steven Donahue, and have run into a snag. I'm at the point where I should fire up Quartus, and write
include hello-a
go

When I do the "include", Quartus complains that it cannot find the file.

I guess this may be a configuration issue -- I imported all of the library files into the memopad, and placed them in a category called "QF Library". I created a "Tutorial" category and put the \hello-a file in there.

Any help appreciated...

Thanks,

Matthew Blair

Re: Another newbie question

Posted by [Erwin Schomburg](#) on July 22, 1999 at 09:52:14:

In Reply to: [Another newbie question](#) posted by Matthew Blair on July 22, 1999 at 09:46:42:

> Hi again, and thanks to those who responded to my earlier question.
> I am following the On-board Development Tutorial by Steven Donahue, and have
> run into a snag. I'm at the point where I should fire up Quartus, and write
>
include hello-a
> go
> When I do the "include", Quartus complains that it cannot find the file.
> I guess this may be a configuration issue -- I imported all of the library
> files into the memopad, and placed them in a category called "QF Library". I
> created a "Tutorial" category and put the \hello-a file in there.
> Any help appreciated...
> Thanks,
> Matthew Blair

In Quartus and Forth in general, the Space (or all Whitespace) character is the
delimiter, so your MemoHead should read
\ hello-a (watch the space following the backslash)

May the Forth be with you!
/Erwin

Re: Another newbie question

Posted by [Matthew Blair](#) on July 22, 1999 at 10:09:51:

In Reply to: [Re: Another newbie question](#) posted by Erwin Schomburg on July 22,
1999 at 09:52:14:

Ohhhhhh, don't I feel stupid! This is probably a FAQ, right?

Thanks for your help. I may be able to take this NEWBIE tag off of my posts in
a few weeks or so... :^)

Matt

>
> In Quartus and Forth in general, the Space (or all Whitespace) character is
the
> delimiter, so your MemoHead should read
> \ hello-a (watch the space following the backslash)

> May the Forth be with you!
> /Erwin

Re: Another newbie question

Posted by Erwin on July 22, 1999 at 16:30:16:

In Reply to: [Re: Another newbie question](#) posted by Matthew Blair on July 22, 1999 at 10:09:51:

> Ohhhhhh, don't I feel stupid! This is probably a FAQ, right?

> Thanks for your help. I may be able to take this NEWBIE tag off of my posts
in
> a few weeks or so... :^)

> Matt

Feel welcome regardless.
/Erwin

Registration Timeout Counter

Posted by [Erwin Schomburg](#) on July 22, 1999 at 09:38:43:

Inspired by the timer/counter discussion below I designed a code snippet that starts a 30 day countdown timer at first activation of the app. When the counter elapses the app just terminates without any more useful action. The code snippet incorporates snippets from other sources, e.g. the exit-handler and preferences storage and retrieval snippets from Neal and the seconds/minute display formatting from the discussion as mentioned.

```
\ 30-day-timer ( ERS 22Jul99 )
```

```
decimal  
needs tools-ext  
needs ids  
needs dblmath  
needs graphics  
  
here constant prefs
```

```

2variable stime
\ here goes the rest of the preferences
\ you want to save on app exit
here prefs - constant prefsiz

2variable ntime
2592000. 2constant evtime \ 30 days in seconds

: :xx ( d1 --- d2 )
base @ >r 10 base ! # 6 base ! # [char] : hold r> base ! ;

: hh ( d1 --- d2 )
24. ud/mod 2swap # #
2drop ;

: starttime ( --- )
TimGetSeconds stime 2! 0. ntime 2! ;

: tdis ( d --- )
2 110 at
<# :xx :xx hh [char] d hold #s #> type ;

: check&dispTime ( --- )
TimGetSeconds 2dup ntime 2@ d= if
2drop
else
2dup ntime 2!
stime 2@ d- evtime
2swap d- 2dup 0. d< if bye
else
tdis then then ;

1 [if]

(id) p4ap 2constant CrID

: get-stored ( --- bool )
prefsiz prefs >abs 1 CrID
PrefGetAppPreferencesV10 ;

: set-stored ( --- )
prefsiz prefs >abs 1 CrID
PrefSetAppPreferencesV10 ;

: init ( --- )
get-stored 0= if
Starttime
\ here goes the rest of your inits
then ;

: go ( --- )
init
begin begin check&dispTime
ekey ?dup until
drop \ here goes your event handling instead of "drop"

```

```
again ;
-257 constant byeThrow
: exit-hand ( --- )
['] go catch
dup byeThrow = if
set-stored then
throw ;

' exit-hand (id) q4ap makeprc Timeout
[then]

May the Forth be with you!
/Erwin
```

Re: Registration Timeout Counter

Posted by Erwin on July 22, 1999 at 11:51:55:

In Reply to: [Registration Timeout Counter](#) posted by Erwin Schomburg on July 22, 1999 at 09:38:43:

```
> Inspired by the timer/counter discussion below I designed a code snippet that
> starts a 30 day countdown timer at first activation of the app. When the
counter
> elapses the app just terminates without any more useful action. The code
snippet
> incorporates snippets from other sources, e.g. the exit-handler and
preferences
> storage and retrieval snippets from Neal and the seconds/minute display
> formatting from the discussion as mentioned.
>
```

```
> \ 30-day-timer ( ERS 22Jul99 )
> decimal
> needs tools-ext
> needs ids
> needs dblmath
> needs graphics
> here constant prefs
> 2variable stime
> \ here goes the rest of the preferences
> \ you want to save on app exit
> here prefs - constant prefsiz
> 2variable ntime
> 2592000. 2constant evtime \ 30 days in seconds
```

```

>
> : :xx ( d1 --- d2 )
> base @ >r 10 base ! # 6 base ! # [char] : hold r> base ! ;

> : hh ( d1 --- d2 )
> 24. ud/mod 2swap # #
> 2drop ;

> : starttime ( --- )
> TimGetSeconds stime 2! 0. ntime 2! ;

> : tdis ( d --- )
> 2 110 at
> <# :xx :xx hh [char] d hold #s #> type ;

> : check&dispTime ( --- )
> TimGetSeconds 2dup ntime 2@ d= if
> 2drop
> else
> 2dup ntime 2!
> stime 2@ d- evtime
> 2swap d- 2dup 0. d< if bye
> else
> tdis then then ;

> 1 [if]

> (id) p4ap 2constant CrID

> : get-stored ( --- bool )
> prefs size prefs >abs 1 CrID
> PrefGetAppPreferencesV10 ;

> : set-stored ( --- )
> prefs size prefs >abs 1 CrID
> PrefSetAppPreferencesV10 ;

> : init ( --- )
> get-stored 0= if
> Starttime
> \ here goes the rest of your inits
> then ;

> : go ( --- )
> init
> begin begin check&dispTime
> ekey ?dup until
> drop \ here goes your event handling instead of "drop"
> again ;

> -257 constant byeThrow

> : exit-hand ( --- )
> ['] go catch
> dup byeThrow = if
> set-stored then

```

> throw ;

> ' exit-hand (id) q4ap makeprc Timeout

> [then]

>

> May the Forth be with you!

> /Erwin

A "2drop" needs to get in just before the "bye", it got lost somehow in pasting in, sorry.

/Erwin

Re: Registration Timeout Counter

Posted by [E. Ross Helton](#) on July 22, 1999 at 11:02:22:

In Reply to: [Registration Timeout Counter](#) posted by Erwin Schomburg on July 22, 1999 at 09:38:43:

Hi Erwin;

Well, if I can't be the one to create the app, I'm glad that my questions can be an inspiration somewhere.

Thanks for the snippet. Also I want to take a moment to thank all who participated in the thread dealing with that 'Seconds and timer' thread. You all gave great help. The snippets and advise were excellent. The app I wanted to use them in ended up not lending itself to what I so boldly had planned.

Somewhere however, these things will help

Thanks again

Make it a good day!

Ross

> Inspired by the timer/counter discussion below I designed a code snippet that
> starts a 30 day countdown timer at first activation of the app. When the
> counter

> elapses the app just terminates without any more useful action. The code
> snippet

> incorporates snippets from other sources, e.g. the exit-handler and
> preferences

> storage and retrieval snippets from Neal and the seconds/minute display

> formatting from the discussion as mentioned.

>

> \ 30-day-timer (ERS 22Jul99)

> decimal

```

> needs tools-ext
> needs ids
> needs dblmath
> needs graphics

> here constant prefs
> 2variable stime
> \ here goes the rest of the preferences
> \ you want to save on app exit
> here prefs - constant prefsize

> 2variable ntime
> 2592000. 2constant evtime \ 30 days in seconds

>
> : :xx ( d1 --- d2 )
> base @ >r 10 base ! # 6 base ! # [char] : hold r> base ! ;

> : hh ( d1 --- d2 )
> 24. ud/mod 2swap # #
> 2drop ;

> : starttime ( --- )
> TimGetSeconds stime 2! 0. ntime 2! ;

> : tdis ( d --- )
> 2 110 at
> <# :xx :xx hh [char] d hold #s #> type ;

> : check&dispTime ( --- )
> TimGetSeconds 2dup ntime 2@ d= if
> 2drop
> else
> 2dup ntime 2!
> stime 2@ d- evtime
> 2swap d- 2dup 0. d< if bye
> else
> tdis then then ;

> 1 [if]

> (id) p4ap 2constant CrID

> : get-stored ( --- bool )
> prefs size prefs >abs 1 CrID
> PrefGetAppPreferencesV10 ;

> : set-stored ( --- )
> prefs size prefs >abs 1 CrID
> PrefSetAppPreferencesV10 ;

> : init ( --- )
> get-stored 0= if
> Starttime
> \ here goes the rest of your inits
> then ;

```

```
> : go ( --- )
> init
> begin begin check&dispTime
> ekey ?dup until
> drop \ here goes your event handling instead of "drop"
> again ;

> -257 constant byeThrow

> : exit-hand ( --- )
> ['] go catch
> dup byeThrow = if
> set-stored then
> throw ;

> ' exit-hand (id) q4ap makeprc Timeout
> [then]
>

> May the Forth be with you!
> /Erwin
```

Newbie question

Posted by [Matthew Blair](#) on July 22, 1999 at 08:33:10:

Hi,

I was experimenting with Quartus last night. I wrote something like

```
: sqr dup * ;
```

to do the square of a number on the stack. So, as I was testing this word(? Is that what I would call "sqr?"), I went through the following sequence.

```
2
sqr
.s
sqr
.s
```

and so on. I found that when the number 256 was on the stack, "sqr"ing that put a value of 0 on the stack.

So the question: are items on the stack represented as a 16-bit signed integer?

Also, how do I put a floating point number on the stack? When I enter 25.2 and do a ".s", the stack has 252 and 0. Why is that?

Thanks for any help,

Matthew Blair

Re: Newbie question

Posted by [Erwin Schomburg](#) on July 22, 1999 at 09:23:33:

In Reply to: [Newbie question](#) posted by Matthew Blair on July 22, 1999 at 08:33:10:

> Hi,

> I was experimenting with Quartus last night. I wrote something like

>

```
> : sqr dup * ;
```

>

> to do the square of a number on the stack. So, as I was testing this
> word(? Is that what I would call "sqr"?), I went through the following
> sequence.

>

> 2

```
> sqr
```

```
> .s
```

```
> sqr
```

```
> .s
```

>

> and so on. I found that when the number 256 was on the stack, "sqr"ing that
> put a value of 0 on the stack.

> So the question: are items on the stack represented as a 16-bit signed
integer?

Yes, in Quartus the "Cellsize" is 16 bit

> Also, how do I put a floating point number on the stack? When I enter 25.2
and

> do a ".s", the stack has 252 and 0. Why is that?

any literal input that can be interpreted as a number *and* contains a dot is
interpreted as a double (size) number, a 32 bit representation that is in
Quartus.

Floating point numbers are treated special, you need to load the library
module(s) dealing with them (float and related modules) and mark and treat
them with the special float handling words.

> Thanks for any help,

> Matthew Blair

Welcome,

and

May the Forth be with you!

/Erwin

Re: Newbie question

Posted by [Neal Bridges](#) on July 22, 1999 at 09:19:43:

In Reply to: [Newbie question](#) posted by Matthew Blair on July 22, 1999 at 08:33:10:

> Hi,

> I was experimenting with Quartus last night. I wrote something like

>

```
> : sqr dup * ;
```

>

> to do the square of a number on the stack. So, as I was testing this
> word(? Is that what I would call "sqr"?), I went through the following
> sequence.

'sqr' is a Forth word, yes. Or a Forth definition, as I tend to prefer to call them.

>

```
> 2
```

```
> sqr
```

```
> .s
```

```
> sqr
```

```
> .s
```

```
>
```

> and so on. I found that when the number 256 was on the stack, "sqr"ing that
> put a value of 0 on the stack.

> So the question: are items on the stack represented as a 16-bit signed integer?

They are, yes.

> Also, how do I put a floating point number on the stack? When I enter 25.2
and

> do a ".s", the stack has 252 and 0. Why is that?

The Forth parser recognizes integers containing a '.' as double-cell numbers (32-bit values), represented on the stack by two 16-bit values.

You'd enter 25.2 as a floating-point number like this:

```
25.2e0
```

or

```
252e-1
```

That floating-point value then resides on a separate floating-point stack, 8 floats deep. Try:

```
: fsqr fdup f* ;
```

```
25.2e0 fsqr fs.
```

(Note that fs. displays the top float on the stack, the way . would for an integer on the data stack.)

Let me know if that helps, and be sure and ask any other questions that arise!

Neal

Re: Newbie question

Posted by [Matthew Blair](#) on July 22, 1999 at 10:48:53:

In Reply to: [Re: Newbie question](#) posted by Neal Bridges on July 22, 1999 at 09:19:43:

> > So the question: are items on the stack represented as a 16-bit signed
> integer?

> They are, yes.

> Let me know if that helps, and be sure and ask any other questions that arise!

> Neal

How would I do arithmetic on unsigned integers of varying length? Does this require the creation of Forth definitions to handle the specific case I might be interested in?

Thanks for your help,

Matt

Re: Newbie question

Posted by [Neal Bridges](#) on July 22, 1999 at 11:01:44:

In Reply to: [Re: Newbie question](#) posted by Matthew Blair on July 22, 1999 at 10:48:53:

> > > So the question: are items on the stack represented as a 16-bit signed
> > integer?

> > They are, yes.

> > Let me know if that helps, and be sure and ask any other questions that
arise!

> > Neal

> How would I do arithmetic on unsigned integers of varying length? Does this
> require the creation of Forth definitions to handle the specific case I might
> be interested in?

If you work with double-cell integers, you have an available (unsigned) range of
0..4294967295, sufficient for most tasks. The M*/ operator is available for
scaling larger values -- it produces an intermediate triple-cell product.

Also look at *dblmath.txt* -- it provides additional double-cell
operators.

If you need even larger integers, you can either go to floating-point (with the
resulting loss of accuracy common to all floating-point operations), or use a
bignums package. I implemented bignums in Quartus Forth for my SCX Calculator,
based on Len Zettel's original bignums work. It wasn't a difficult task.

It's on my list to make it a stand-alone library module, but there are a few
items ahead of it at the moment :)

Neal

Re: Newbie question

Posted by [Neal Bridges](#) on July 22, 1999 at 11:05:17:

In Reply to: [Re: Newbie question](#) posted by Neal Bridges on July 22, 1999 at
11:01:44:

> > How would I do arithmetic on unsigned integers of varying length? Does this
> > require the creation of Forth definitions to handle the specific case I
might
> > be interested in?

The other option is to write definitions to handle, say, triple-cell arithmetic.
Each additional cell gives another 2¹⁶ increase in the available range.

Neal

LoanPayment Rating: 5 Planes at PilotZone

Posted by [Barry Ekstrand](#) on July 22, 1999 at 01:54:24:

Well, after seeing the great track record Quartus apps were having at Tucows / PilotZone, I submitted LoanPayment for a review. I'm pleased to find it received a rating of 5 Planes - I guess this keeps the Quartus streak intact. Once again, much credit for this goes to the support I've received on this board - thanks to all!

FYI - the Char-Ware effort that I have been working on and that LoanPayment is part of (all proceeds are donated to the Juvenile Diabetes Foundation) is going well and is growing. I've been very pleased with the registration record for LoanPayment, and recently Brett Boe offered his Convert program up as another Char-Ware program. Any other developers out there on the Quartus forum that might care to join the cause? :)

Regards,

Barry Ekstrand

Re: LoanPayment Rating: 5 Planes at PilotZone

Posted by [E. Ross Helton](#) on July 22, 1999 at 10:53:28:

In Reply to: [LoanPayment Rating: 5 Planes at PilotZone](#) posted by Barry Ekstrand on July 22, 1999 at 01:54:24:

Hi Barry;

Congratulations on the 5 planes. That is terrific.

Make it a good day!

Ross

> Well, after seeing the great track record Quartus apps were having at Tucows / PilotZone, I submitted LoanPayment for a review. I'm pleased to find it received a rating of 5 Planes - I guess this keeps the Quartus streak intact.

> Once again, much credit for this goes to the support I've received on this board - thanks to all!

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> Regards,

> Barry Ekstrand

Re: LoanPayment Rating: 5 Planes at PilotZone

Posted by [Ron Doerfler](#) on July 22, 1999 at 09:49:11:

In Reply to: [LoanPayment Rating: 5 Planes at PilotZone](#) posted by Barry Ekstrand on July 22, 1999 at 01:54:24:

Congratulations, Barry!

Ron

Re: LoanPayment Rating: 5 Planes at PilotZone

Posted by [Erwin Schomburg](#) on July 22, 1999 at 09:59:41:

In Reply to: [Re: LoanPayment Rating: 5 Planes at PilotZone](#) posted by Ron Doerfler on July 22, 1999 at 09:49:11:

>
> Congratulations, Barry!

> Ron

Someone there seems to like us, Congratulations from me too.

May the Forth be with you!

/Erwin

lord@crocodile.org

Posted by New version? on July 21, 1999 at 19:13:40:

Neil,

Are you planing to issue updated version of Quartus forth? During last 2 week I've seen 3 bugs reported. Maybe it is time to issue a maintenance release? The reason for me asking this is that I am finishing small program I am trying to write, after that I will be registering my copy of quartus. I would like to have registered version with all these bugs corrected.

Vadim

Re: lord@crocodile.org

Posted by [Neal Bridges](#) on July 21, 1999 at 21:02:04:

In Reply to: [lord@crocodile.org](#) posted by New version? on July 21, 1999 at 19:13:40:

> Neil,

> Are you planing to issue updated version
> of Quartus forth? During last 2 week
> I've seen 3 bugs reported. Maybe it is time
> to issue a maintenance release? The reason
> for me asking this is that I am finishing small program
> I am trying to write, after that I will
> be registering my copy of quartus. I would
> like to have registered version with all these bugs
> corrected.

Fortunately the bugs discovered can all be corrected from within the library files. I'll be issuing an update specifically with the two or three changed files soon.

Neal

Re: lord@crocodile.org

Posted by [E. Ross Helton](#) on July 21, 1999 at 20:41:44:

In Reply to: [lord@crocodile.org](#) posted by New version? on July 21, 1999 at 19:13:40:

> Neil,
> Are you planing to issue updated version
> of Quartus forth? During last 2 week
> I've seen 3 bugs reported. Maybe it is time
> to issue a maintenance release? The reason
> for me asking this is that I am finishing small program
> I am trying to write, after that I will
> be registering my copy of quartus. I would
> like to have registered version with all these bugs
> corrected.

Hi Vadim;

I am sure that Neal will make sure you have a registered version with any updates which would be required once you have registered. He has done that for the rest of us. Most of the bugs so to speak aren't up a major manner or most of us wouldn't have been able to write the stand alone program we have and had those programs work if there had been too many problems.

I have personally seen three updates since I registered my version. Go ahead and register, and you won't be sorry that you did!

Just my opinion.

As Erwin says may the 'Forth be with you!"

Make it a good day!

Ross

I/O Redirection?

Posted by [Bob Cunningham](#) on July 21, 1999 at 04:25:15:

I would really like to be able to redirect QF application I/O from the screen/stylus to the serial port, or to the IR port, or even to a database or memo file. In particular, testing an application that uses streaming data is a real pain without some transparent way to simulate I/O without having to tear up the application code. I'd love to be able to change the I/O device using a mechanism as simple as the one used to change the numeric base.

I suppose I'm asking for something like a Streams facility or Unix file architecture, where I/O is virtualized to bi-directional byte streams and a handle is a handle is a handle.

Is there such a thing for QF?

Thanks,

-BobC

Re: I/O Redirection?

Posted by [Neal Bridges](#) on July 21, 1999 at 09:59:51:

In Reply to: [I/O Redirection?](#) posted by Bob Cunningham on July 21, 1999 at 04:25:15:

> I would really like to be able to redirect QF application I/O from the
> screen/stylus to the serial port, or to the IR port, or even to a database or
> memo file. In particular, testing an application that uses streaming data is a
> real pain without some transparent way to simulate I/O without having to tear
> up the application code. I'd love to be able to change the I/O device using a
> mechanism as simple as the one used to change the numeric base.

> I suppose I'm asking for something like a Streams facility or Unix file
> architecture, where I/O is virtualized to bi-directional byte streams and a
> handle is a handle is a handle.

> Is there such a thing for QF?

In Forth, I would encapsulate my input source in its own definition. During testing, dummy input would be generated by this definition, possibly data read from memory. That would cover any testing requirements, allow for simple switching between input sources, and all without adding anything as heavy as a Streams facility to the kernel.

Neal

Re: I/O Redirection?

Posted by [Bob Cunningham](#) on July 21, 1999 at 19:39:23:

In Reply to: [Re: I/O Redirection?](#) posted by Neal Bridges on July 21, 1999 at 09:59:51:

> > I would really like to be able to redirect QF application I/O from the
> > screen/stylus to the serial port, or to the IR port, or even to a database
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> testing, dummy input would be generated by this definition, possibly data
read
> from memory. That would cover any testing requirements, allow for simple
> switching between input sources, and all without adding anything as heavy as
a
> Streams facility to the kernel.

I have started doing precisely this, and (if I ever get it working) I suspect it would soon start to look like boilerplate code that should be standardized and widely used, rather than endlessly reimplemented. The Streams facility has proven to be one of the key ingredients to the success of C and Unix, even in embedded and real-time systems. Of course, the price of capturing all the high-level I/O similarities in the Streams interface is that all the low-level device-specific stuff gets shoved into the relatively ugly ioctl facility (and its newer kin).

While I agree Forth has little need for a full Streams implementation, some form of plug compatible I/O interface would certainly help developing and debugging applications, especially those that stream data or must have data inputs simulated. Having standard high-level calls like open, read, write and close would allow new devices to be implemented and more easily used by existing applications if they merely support their own interfaces to the standard I/O words.

Hey, I'm allowed to dream, right? I mean, kicking a C addiction is HARD, and Forth sure ain't no Methadone! Standardized interfaces (and standardized

abstractions of those interfaces) greatly empower programmer productivity:
Learn once, use many.

-BobC

Re: I/O Redirection?

Posted by [Neal Bridges](#) on July 21, 1999 at 23:35:36:

In Reply to: [Re: I/O Redirection?](#) posted by Bob Cunningham on July 21, 1999 at 19:39:23:

> Hey, I'm allowed to dream, right? I mean, kicking a C addiction is HARD, and
> Forth sure ain't no Methadone! Standardized interfaces (and standardized
> abstractions of those interfaces) greatly empower programmer productivity:
> Learn once, use many.

I agree with the "learn once" philosophy. Remember also to "keep it simple".
Simplicity is strength.

Neal

Re: I/O Redirection?

Posted by [Bob Cunningham](#) on July 22, 1999 at 05:50:38:

In Reply to: [Re: I/O Redirection?](#) posted by Neal Bridges on July 21, 1999 at 23:35:36:

> > Hey, I'm allowed to dream, right? I mean, kicking a C addiction is HARD,
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> > Forth sure ain't no Methadone! Standardized interfaces (and standardized
> > abstractions of those interfaces) greatly empower programmer productivity:
> > Learn once, use many.

> I agree with the "learn once" philosophy. Remember also to "keep it
simple".
> Simplicity is strength.

Having standard abstractions with standard interface implementations helps to
get functional prototypes up and running ASAP. Very often, when the high-level
interface proves to be a time waster, I will optimize it away AFTER the rest of
the application is debugged. With Forth, I have to do it FIRST (because there
IS no standard abstraction or interface), and I find it is slowing me down
quite a bit.

I prefer to write device drivers based on how the device is ACTUALLY used,

which means I need experience using the device before I design and implement a new interface to it. Implementing a standard interface first allows the rest of development to continue (and to take advantage of simulated I/O using standard devices). A more efficient interface should be implemented only when the need has been proven, and the specifications for the new interface have been completely determined by experience, not by hunches or prediction.

Even when a custom interface is required, I will often write it to appear to be as similar to the standard interface as possible, to permit other programmers to make use of it without having to reverse engineer it to figure out how to use it properly.

The data recorder app I'm working on must be tested using known data streams with known errors, in addition to live data streams with unknown errors. I'd like to avoid building an external hardware simulator (a PC program) if I can, since I'd like to do all development and testing on the Palm.

Another advantage of on-board testing is that I can test my application with data rates greater than anything the serial port can deliver, allowing me to debug timing and memory issues far easier.

While the Streams interface is neither optimal nor ideal, it is both simple and powerful, and easy to bypass.

For Forth, an object-like I/O interface would be a natural (the object is the handle - easy to manipulate on the stack). Though I have yet to use any of the OO-Forth packages, I'd recommend using one that clearly separates definition from implementation, allowing the I/O interface specification to be both functional and portable, even if specific implementations are not.

Re: I/O Redirection?

Posted by [Neal Bridges](#) on July 22, 1999 at 09:14:24:

In Reply to: [Re: I/O Redirection?](#) posted by Bob Cunningham on July 22, 1999 at 05:50:38:

> > > Hey, I'm allowed to dream, right? I mean, kicking a C addiction is HARD,
> > and
> > > Forth sure ain't no Methadone! Standardized interfaces (and standardized
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high-level

> interface proves to be a time waster, I will optimize it away AFTER the rest of
> the application is debugged. With Forth, I have to do it FIRST (because there
> IS no standard abstraction or interface), and I find it is slowing me down
> quite a bit.

In Forth, you define your own application-specific abstractions. This is not the way it works in, say, C, as you're constrained by what the language allows and dictates.

I suggest you produce a minimal set of words for interfacing to stream data; this will then be a toolset you can use with any Standard Forth.

Neal

Re: I/O Redirection?

Posted by [Neal Bridges](#) on July 22, 1999 at 09:23:27:

In Reply to: [Re: I/O Redirection?](#) posted by Neal Bridges on July 22, 1999 at 09:14:24:

> I suggest you produce a minimal set of words for interfacing to stream data;
> this will then be a toolset you can use with any Standard Forth.

After writing this it occurs to me that I've seen this done already, by a comp.lang.forth participant in UseNet -- a DejaNews search might well turn it up.

Neal

Re: I/O Redirection?

Posted by [Bob Cunningham](#) on July 23, 1999 at 09:21:46:

In Reply to: [Re: I/O Redirection?](#) posted by Neal Bridges on July 22, 1999 at 09:23:27:

> > I suggest you produce a minimal set of words for interfacing to stream data;

> > this will then be a toolset you can use with any Standard Forth.

> After writing this it occurs to me that I've seen this done already, by a
> comp.lang.forth participant in UseNet -- a DejaNews search might well turn it
> up.

I did a Usenet search and found lots of discussion, but no code samples.

-BobC

Re: I/O Redirection?

Posted by [Neal Bridges](#) on July 23, 1999 at 09:34:23:

In Reply to: [Re: I/O Redirection?](#) posted by Bob Cunningham on July 23, 1999 at 09:21:46:

> > > I suggest you produce a minimal set of words for interfacing to stream
> data;
> > > this will then be a toolset you can use with any Standard Forth.

> > After writing this it occurs to me that I've seen this done already, by a
> > comp.lang.forth participant in UseNet -- a DejaNews search might well turn
it
> > up.

> I did a Usenet search and found lots of discussion, but no code samples.

I recall a discussion with definition-names and stack-diagrams and specifications; if you can't dig it up let me know and I'll have a try.

Neal

Quartus Forth words?

Posted by [Bob Cunningham](#) on July 21, 1999 at 04:15:49:

Hi,

I'm looking for a list of all words built into Quartus Forth. I know I can list the dictionary to the screen, but I can't capture it for editing.

As part of my self-education in Forth, I'm documenting each library function as I use it (to let me know I did try it out, and to remind me what I did with it), but have no similar file for the words that are built in.

Ideally, such a list would be a list of comments of the form:

```
\ dup ( n -- n n )
```

That is, a comment listing the word's name and it's stack diagram. If the word is actually implemented within QF using Forth (instead of assembly), then listing that code in the comment would be a great help in optimizing code performance. For words in assembler, they can be manually disassembled by the

curious.

Or, come to think of it, I should be fairly close to knowing enough to write my own word to scan and dump the dictionary. Hmmm... Uh, no, not yet.

I know, I know, QF is ANS compliant. But that spec is BIG, and though I have read every word of it (on the Palm!), it is almost impossible to use as a handy reference.

My ultimate goal is to document the process I'm going through to learn Forth, after having been an Asm/C/C++/EC++/embedded/real-time programmer for 15 years. When I finally achieve a modicum of proficiency, I hope to write an article with a catchy title, perhaps: "From C to Forth: A 12-Step Plan For Ending Syntax Addiction"

-BobC

Re: Quartus Forth words?

Posted by [Dennis Misener](#) on July 21, 1999 at 18:41:19:

In Reply to: [Quartus Forth words?](#) posted by Bob Cunningham on July 21, 1999 at 04:15:49:

I took the ANS standard and ran it through a PERL filter and beat it down considerably (26K uncompressed I think). Let me know if you'd like a copy.

> Ideally, such a list would be a list of comments of the form:

> \ dup (n -- n n)

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> read every word of it (on the Palm!), it is almost impossible to use as a handy

> reference.

Re: Quartus Forth words?

Posted by [Neal Bridges](#) on July 22, 1999 at 00:10:33:

In Reply to: [Re: Quartus Forth words?](#) posted by Dennis Misener on July 21, 1999 at 18:41:19:

> I took the ANS standard and ran it through a PERL filter and and
> beat it down considerably (26K uncompressed I think). Let me know if you'd
> like a copy.

I'd like a copy -- something of the sort might be of value directly in the manual.

Neal

Re: ANS Forth summary

Posted by [Dennis Misener](#) on July 22, 1999 at 21:35:35:

In Reply to: [Re: Quartus Forth words?](#) posted by Neal Bridges on July 22, 1999 at 00:10:33:

> > I took the ANS standard and ran it through a PERL filter and and
> > beat it down considerably (26K compressed I think). Let me know if you'd
> > like a copy.

> I'd like a copy -- something of the sort might be of value directly in the
> manual.

Should be in your mail... just sent it.

Re: Quartus Forth words?

Posted by [Bob Cunningham](#) on July 21, 1999 at 19:45:11:

In Reply to: [Re: Quartus Forth words?](#) posted by Dennis Misener on July 21, 1999 at 18:41:19:

> I took the ANS standard and ran it through a PERL filter and and
> beat it down considerably (26K uncompressed I think). Let me know if you'd
> like a copy.

Please! I suspect posting a link to the list would be helpful to all, though if that's not possible, send it to me and I host it on my tiny FTP site.

-BobC

Re: Quartus Forth words?

Posted by [Dennis Misener](#) on July 22, 1999 at 21:29:06:

In Reply to: [Re: Quartus Forth words?](#) posted by Bob Cunningham on July 21, 1999 at 19:45:11:

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> if that's not possible, send it to me and I host it on my tiny FTP site.

I've just E-mailed you a copy.

Re: Quartus Forth words?

Posted by [Neal Bridges](#) on July 21, 1999 at 09:56:03:

In Reply to: [Quartus Forth words?](#) posted by Bob Cunningham on July 21, 1999 at 04:15:49:

> I'm looking for a list of all words built into Quartus Forth. I know I can
> list the dictionary to the screen, but I can't capture it for editing.
> As part of my self-education in Forth, I'm documenting each library function
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> I use it (to let me know I did try it out, and to remind me what I did with
> it), but have no similar file for the words that are built in.
> Ideally, such a list would be a list of comments of the form:
> \ dup (n -- n n)
> That is, a comment listing the word's name and it's stack diagram.

The Quartus Forth manual, section entitled "Words Specific to Quartus Forth" has stack diagrams for each non-Standard word. A simple glossary of the Standard words with their stack diagrams might be handy also; I'll add it to my list. I should be able to grep it out of the Standard document without much trouble.

> Or, come to think of it, I should be fairly close to knowing enough to write my
> own word to scan and dump the dictionary. Hmmm... Uh, no, not yet.

> I know, I know, QF is ANS compliant. But that spec is BIG, and though I have
> read every word of it (on the Palm!), it is almost impossible to use as a
handy
> reference.

Why impossible? It's bookmarked by section, and the search function will take you right to the word you want in a few seconds.

> My ultimate goal is to document the process I'm going through to learn Forth,
> after having been an Asm/C/C++/EC++/embedded/real-time programmer for 15
> years. When I finally achieve a modicum of proficiency, I hope to write an
> article with a catchy title, perhaps: "From C to Forth: A 12-Step Plan For
> Ending Syntax Addiction"

That might be interesting!

Neal

Re: Quartus Forth words?

Posted by [Barry Marks](#) on July 23, 1999 at 12:01:36:

In Reply to: [Re: Quartus Forth words?](#) posted by Neal Bridges on July 21, 1999 at 09:56:03:

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> handy
> > reference.

> Why impossible? It's bookmarked by section, and the search function will
take
> you right to the word you want in a few seconds.

The problem with the ANSI spec as a reference is that you have to leave what
you're doing and go through a number of steps to find what you're looking for,
and then go through a number of steps to get back to your work.

I do this because I have to but it's not a good way to work.

What we really need is a well indexed pop up help for Quartus and even Palm-
OS. Something on the order of HELPPC for PC programming. For those of you who
haven't used HELPPC, it is a tsr that will quickly bring you full details on
any opcode or detailed descriptions of how to program any chip or c function or
c operator or assembler directive or dos or bios data and table structures or
dos interrupts, etc. I keep this on my dos palmtop and I seldom fail to find
the info I need.

Barry

Re: Quartus Forth words?

Posted by [Bob Cunningham](#) on July 21, 1999 at 19:21:10:

In Reply to: [Re: Quartus Forth words?](#) posted by Neal Bridges on July 21, 1999 at 09:56:03:

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> stack diagrams for each non-Standard word. A simple glossary of the Standard
> words with their stack diagrams might be handy also; I'll add it to my list.
I
> should be able to grep it out of the Standard document without much trouble.

Doh! I swear, the Forth language and Quartus Forth development process is so different from C that I had mentally tossed the baby out with the bathwater. Yes, Bob, you are still allowed to use grep!

Also of interest would be brief annotations concerning how each function is implemented. For those implemented in Forth, seeing the code would allow users to optimize how the words are used, or if one word becomes a performance bottleneck, reimplementing it in assembly using the Forth source as a specification.

> Why impossible? It's bookmarked by section, and the search function will take
> you right to the word you want in a few seconds.

If you know the word you are looking for, that's true. But what if I am wondering if any Standard word exists that implements some specific functionality? Often, the only way to find this is by scanning a commented list. Scanning the Standard is not practical.

Re: Quartus Forth words?

Posted by [Neal Bridges](#) on July 21, 1999 at 23:59:17:

In Reply to: [Re: Quartus Forth words?](#) posted by Bob Cunningham on July 21, 1999 at 19:21:10:

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> implemented. For those implemented in Forth, seeing the code would allow users
> to optimize how the words are used, or if one word becomes a performance
> bottleneck, reimplementing it in assembly using the Forth source as a
> specification.

Again, even words implemented in source as library code are compiled as native-code, so there's little distinction between definitions implemented in

assembly and those implemented using Forth.

Good news though -- as part of the version 2 development, I've been documenting the implementation process. Something good will come of it by and by.

Neal

Re: Quartus Forth words?

Posted by [E.](#) on July 21, 1999 at 08:54:35:

In Reply to: [Quartus Forth words?](#) posted by Bob Cunningham on July 21, 1999 at 04:15:49:

> Hi,

Hi.

> I'm looking for a list of all words built into Quartus Forth. I know I can
> list the dictionary to the screen, but I can't capture it for editing.

Actually, I've been doing a little work along these lines lately.

[snip]

> Ideally, such a list would be a list of comments of the form:

> \ dup (n -- n n)

> That is, a comment listing the word's name and it's stack diagram.

The problem here is that in the library files, not everything has a stack diagram. I could probably deduce one, given time, but since this is something I've been doing bit by bit over the past couple nights, I haven't gotten quite that far just yet.

> If the word

> is actually implemented within QF using Forth (instead of assembly), then
> listing that code in the comment would be a great help in optimizing code
> performance. For words in assembler, they can be manually disassembled by the
> curious.

Hm. This is also a good point, I think. Of course, I would tend to go overboard and produce a "here's how you do it in Forth" snippet (where applicable), which wouldn't really help for code optimization, unless I added still MORE info, with a "this is ACTUALLY written in ASM" annotation or something.

This would get too big too fast. I'll just scratch that idea.

There are a few other problems I can think of, but they're really minor and easy to blow off.

I actually have the list made. One big text file that looks sort of like (and I hope the PRE tag works here...)

struct: 99.1.11 11:36 pm NAB

```
needs toolkit
: field ( n "fieldname" -- )
: end-struct ( s "structname" -- )
: sizeof ( "structname" -- s )
```

...for all the library files. I have the library name, the timestamp+author, and any requirements that library file has, followed by a list of the words (and stack diagrams, where available). I haven't included the built-in Forth words (are these just going to be CORE in ANS, or are there others?), but I think I can do that easily enough.

I guess I'll run through the ANS document and compare it to QF, and add CORE. Gimme a couple days, and I'll either stick a link up here or email it to Neal. If that's okay with you, Neal...? Pander to us Forth tyros, sort of thing? Or, obviously, if someone already has one, then never mind.

> Or, come to think of it, I should be fairly close to knowing enough to write
> my own word to scan and dump the dictionary. Hmmm... Uh, no, not yet.

Heh. Indeed.

[snip]

> I hope to write an
> article with a catchy title, perhaps: "From C to Forth: A 12-Step Plan For
> Ending Syntax Addiction"

I'll take one, please.

-E

Re: Quartus Forth words?

Posted by [Neal Bridges](#) on July 21, 1999 at 10:03:29:

In Reply to: [Re: Quartus Forth words?](#) posted by E. on July 21, 1999 at 08:54:35:

> > If the word
> > is actually implemented within QF using Forth (instead of assembly), then
> > listing that code in the comment would be a great help in optimizing code
> > performance. For words in assembler, they can be manually disassembled by
the
> > curious.

> Hm. This is also a good point, I think. Of course, I would tend to go
> overboard and produce a "here's how you do it in Forth" snippet (where
> applicable), which wouldn't really help for code optimization, unless I added
> still MORE info, with a "this is ACTUALLY written in ASM" annotation or
> something.

All the words in the kernel are written in native-code (ASM), just as are all words generated during the compilation of your own applications.

> I actually have the list made. One big text file that looks sort of like
> (and I hope the PRE tag works here...)

[...]

> I guess I'll run through the ANS document and compare it to QF, and add CORE.

> Gimme a couple days, and I'll either stick a link up here or email it to Neal.

> If that's okay with you, Neal...? Pander to us Forth tyros, sort of thing?
Or,

> obviously, if someone already has one, then never mind.

Certainly it's ok with me; happy to include any documentation that you find helpful. Thanks for making the effort!

Neal

Re: Quartus Forth words?

Posted by [E.](#) on July 23, 1999 at 05:09:14:

In Reply to: [Re: Quartus Forth words?](#) posted by Neal Bridges on July 21, 1999 at 10:03:29:

> > Hm. This is also a good point, I think. Of course, I would tend to go
> > overboard and produce a "here's how you do it in Forth" snippet (where
> > applicable), which wouldn't really help for code optimization, unless I
> > added still MORE info, with a "this is ACTUALLY written in ASM" annotation
> > or something.

> All the words in the kernel are written in native-code (ASM), just as are all
> words generated during the compilation of your own applications.

Yeah, but I was talking about the source code contained in the libraries, and documenting THAT.

I'm not about to put the Forth definition of, say, DUP ("`>R R@ R>`"?), because it's best left in ASM, I think. But when it comes to something like DM*, I would rather give "`1 M*/`" than the ASM equivalent. I'm busy enough learning Forth without learning ASM on top of it, personally. It's easier, at least from my standpoint both as author of the putative document and as someone who will be referring to it a lot. When going for optimization, an imaginary "here's how one CAN do it" wouldn't be as useful as the real ASM implementation.

> > I actually have the list made. One big text file that looks sort of like
> > (and I hope the PRE tag works here...)

> > Gimme a couple days, and I'll either stick a link up here or email it to
> > Neal.

> > If that's okay with you, Neal...? Pander to us Forth tyros, sort of thing?

> Certainly it's ok with me; happy to include any documentation that you find
> helpful. Thanks for making the effort!

Um. Well, this may not actually GO anywhere. I have the document as I discussed above, but I don't think I'll be able to go through and add CORE words to it. At least not for a little while. Someone has just asked me to write a Palm app for him. I will be a bit more busy than usual for a while.

Of course, this is the excuse I need to get off my ass and register Quartus. :)

I am, however, mailing the document, sketchy as it is, to Neal as soon as I post this. I'll try to improve on it when I once again have time.

I have a tangential discussion, but I'll put that in its own thread.

-E

cmove?

Posted by [Vadim Zaliva](#) on July 20, 1999 at 21:09:27:

Hi!

I can't find 'cmove' word in quartus.
Should I write it myself or there is something similar there?

Vadim

Re: cmove?

Posted by [Neal Bridges](#) on July 20, 1999 at 22:49:13:

In Reply to: [cmove?](#) posted by Vadim Zaliva on July 20, 1999 at 21:09:27:

> Hi!

> I can't find 'cmove' word in quartus.
> Should I write it myself or there is something
> similar there?

MOVE should serve equally well, as the address-unit size and the character size are both the same: 1.

Neal

Motto?

Posted by [Erwin Schomburg](#) on July 20, 1999 at 13:09:57:

What it means to have Quartus installed on your Palm Computing Platform...

/Erwin

- [The Forth is with you...](#)

Re: Motto?

Posted by [Neal Bridges](#) on July 20, 1999 at 17:49:00:

In Reply to: [Motto?](#) posted by Erwin Schomburg on July 20, 1999 at 13:09:57:

> What it means to have Quartus installed on your Palm Computing Platform...

Hee hee hee.

Neal

Re: Motto?

Posted by [E. Ross Helton](#) on July 20, 1999 at 18:57:41:

In Reply to: [Re: Motto?](#) posted by Neal Bridges on July 20, 1999 at 17:49:00:

Hey Neal;

Didn't some refer to you as Yoda or something like that a while back. Looks as if its coming home to haunt you again.

Make it a good day!

Ross

Forms questions

Posted by [Vadim Zaliva](#) on July 19, 1999 at 18:18:54:

Hi!

I am trying to create simple app using rsrcedit. I've create resources file using RsrcEdit, with few labels, entry fields and one button.

Here is code I use:

```
; handle-evt ( event -- )
ctlSelectevent = if
event >abs itermid
. abort
then
;

: go
MainForm ID ShowForm
FirstFieldID FieldFocus
begin handle-evt again
;
```

When I press button, it shows "Not In Form" error message and makes me reset my pilot.

To debug I am printing ID in handle-evt, and before crash it do prints correct ID.

What I am doing wrong?

Also, how once could use simple-handler?

Is it something I might want to use in simple application like that?

Sincerely,
Vadim

Re: Forms questions

Posted by [Neal Bridges](#) on July 19, 1999 at 18:32:00:

In Reply to: [Forms questions](#) posted by Vadim Zaliva on July 19, 1999 at 18:18:54:

> I am trying to create simple app
> using rsrcedit. I've create resources

```
> file using RsrcEdit, with few labels,  
> entry fields and one button.  
> Here is code I use:  
  
>  
> ; handle-evt ( event -- )  
> ctlSelectevent = if  
> event >abs itermid  
> . abort  
> then  
> ;  
  
> : go  
> MainForm ID ShowForm  
> FirstFieldID FieldFocus  
> begin handle-evt again  
> ;
```

If that's your actual code, something is up -- MainForm ID shouldn't be two separate words. I'll assume that's a typo. It sounds like you've made your form have the same number as the built-in MainForm; this means that when you ABORT in your handler, Quartus Forth will try to take you back to the input field, and you have no input field in your form. Give your form a different ID, say, 2000, and use '2000 ShowForm' to display it. Then, before your ABORT, do a 'MainForm' to set the form back to the Quartus Forth console form.

```
> Also, how once could use simple-handler?  
> Is it something I might want to use  
> in simple application like that?
```

'simple-handler' was initially written to handle menu events before I extended the internal event-handling system to cover them; now EKEY does menus also, so simple-handler is largely unnecessary. Work with EKEY until you're comfortable with event-handling; should it happen that you need a special handler at some stage, you'll be familiar enough with the structure to manage it easily.

Neal

Re: Forms questions

Posted by [Ron Doerfler](#) on July 20, 1999 at 14:51:02:

In Reply to: [Re: Forms questions](#) posted by Neal Bridges on July 19, 1999 at 18:32:00:

Hi,

```
> 'simple-handler' was initially written to handle menu events before I extended  
> the internal event-handling system to cover them; now EKEY does menus also, so  
> simple-handler is largely unnecessary. Work with EKEY until you're  
> comfortable with event-handling; should it happen that you need a  
> special handler at some stage, you'll be familiar enough with the structure
```

> to manage it easily.

> Neal

I might mention that in my source code I use a large event handler to do most, but not all, of my event handling, including menu events. I had started on this app awhile ago before EKEY handled menu events, so I just kept it. In addition, I had one of those circumstances that requires an event handler function: a pen-down event in a field moves the cursor to the position of the pen tap, and in my case I needed to intercept the pen events and handle them differently to avoid this action. There may be some other way around this, but I don't know of it.

From now on I'm going to let menu events pass through EKEY, along with events generated by masked hardkeys.

Ron

Re: Forms questions

Posted by [Vadim Zaliva](#) on July 19, 1999 at 18:44:35:

In Reply to: [Re: Forms questions](#) posted by Neal Bridges on July 19, 1999 at 18:32:00:

> If that's your actual code, something is up -- MainForm ID shouldn't be two
> separate words. I'll assume that's a typo. It sounds like you've made your
It is typo, in my code it is one word.

> form have the same number as the built-in MainForm; this means that when you
> ABORT in your handler, Quartus Forth will try to take you back to the input
> field, and you have no input field in your form. Give your form a different
ID,
> say, 2000, and use '2000 ShowForm' to display it. Then, before your ABORT, do
a
> 'MainForm' to set the form back to the Quartus Forth console form.

MainFormID was already 2000 in my app.

Now I figured it out. It was crashing not on event handler, but when exiting back to quartus. I need to restore main form. I guess it is FAQ.

Thank you for your quick responce.

Vadim

ekey event handling

Posted by [Marc](#) on July 19, 1999 at 12:41:12:

Hi,

I would like to use the ekey function to handle events, however I stuble on some problems.

- 1/ do no return menuevent, here I discovered that if I the simple event handler, the event sudenly appeared.
- 2/ do no return lstSelectEvent
- 3/ see to loose events, my application is quite slow to compute and then I am missing some key, you hear the sound when pressing the down key but the application do no react.

Hence two question :

- 1/ is there some filtering of the event ekey sees ?
- 2/ what can I do to avoid missing keys ?

Thanks for you help

Marc.

Re: ekey event handling

Posted by [Neal Bridges](#) on July 19, 1999 at 14:38:51:

In Reply to: [ekey event handling](#) posted by Marc on July 19, 1999 at 12:41:12:

> Hi,

> I would like to use the ekey function to handle events, however I stuble on
> some problems.

> 1/ do no return menuevent, here I discovered that if I the simple event
> handler,

> the event sudenly appeared.

> 2/ do no return lstSelectEvent

> 3/ see to loose events, my application is quite slow to compute and then I am
> missing some key, you hear the sound when pressing the down key but the
> application do no react.

I don't quite understand what you're returning or not returning from this description. Can you whittle down your code to a snippet that shows the problem? I'd be happy to have a look at it.

Neal

Re: ekey event handling

Posted by [Marc](#) on July 21, 1999 at 08:47:17:

In Reply to: [Re: ekey event handling](#) posted by Neal Bridges on July 19, 1999 at 14:38:51:

Here is code extract

```
\ tf
needs graphics
needs core-ext
needs Fonts
needs Events
needs Forms
needs Fields
needs zstrings
needs resources
needs fonts
needs mevents-utils

(ID) mjft (ID) 0002 use-resources

1000 constant MainFormID
1100 constant OptsFormID
1004 constant FieldID

: tf
MainFormID ShowForm
begin
ekey
\ dup if ." event = " . Cr then
dup keyDownEvent = if
event >abs itemid
." key = " . cr
then
dup menuEvent = if
\ event >abs itemid ." menu item = " . cr
then
dup lstSelectEvent = if
\ event >abs itemid ." select lst = " . cr
s" lst" 1005 string>Field
then
dup popSelectEvent = if
event >abs itemid ( e.item ) n>s FieldId string>Field
e.popsel n>s 1005 string>Field
then
drop
again
;
```

But I guess I found the problem, I use the string>Field word quite a lot

and this word's definition calls FlushQueue. This is the core of my problem I guess. Neil can I change string>Field to not use FlushQueue ?

Thanks for your help,

Marc

> I don't quite understand what you're returning or not returning from this
> description. Can you whittle down your code to a snippet that shows the
> problem? I'd be happy to have a look at it.

> Neal

Re: ekey event handling

Posted by [Neal Bridges](#) on July 21, 1999 at 13:41:52:

In Reply to: [Re: ekey event handling](#) posted by Marc on July 21, 1999 at 08:47:17:

> But I guess I found the problem, I use the string>Field word quite a lot
> and this word's definition calls FlushQueue. This is the core of my problem
> I guess. Neil can I change string>Field to not use FlushQueue ?

Yes -- that should cause no problem. Give it a try.

Neal

Re: ekey event handling

Posted by [Erwin Schomburg](#) on July 19, 1999 at 13:22:04:

In Reply to: [ekey event handling](#) posted by Marc on July 19, 1999 at 12:41:12:

> Hi,

> I would like to use the ekey function to handle events, however I stuble on
> some problems.

> 1/ do no return menuevent, here I discovered that if I the simple event
handler,

> the event sudenly appeared.

> 2/ do no return lstSelectEvent

> 3/ see to loose events, my application is quite slow to compute and then I am
> missing some key, you hear the sound when pressing the down key but the
> application do no react.

> Hence two question :

> 1/ is there some filtering of the event ekey sees ?

> 2/ what can I do to avoid missing keys ?

> Thanks for you help

> Marc.

One should not simply loose events, even if computation resp. handling of a particular event is slow. Generally it is no longer necessary to use callback handling as presented in simple-handler, and two handling loops turned out not to be a very good idea in my own apps. Please come back with a relevant code snippet, here or mail, whatever you prefer, although posting it here gives you the chance to get second opinions plus Neal's ultimate interpretation.

/Erwin

ActiveKey review

Posted by [Tej Grover](#) on July 18, 1999 at 14:16:20:

ActiveKey just received a very positive overall review at The-Gadgeteer's site. Check it out at the following URL:

<http://www.the-gadgeteer.com/activekey.html>

I also want to take the time to thank Ron for being so generous with his source code, time and advice helping others (me) get up to speed with Forth and the Palm OS. Congratulations! (now what are you going to do for an encore ;)

- <http://www.the-gadgeteer.com/activekey.html>

Re: ActiveKey review

Posted by [Ron Doerfler](#) on July 18, 1999 at 16:35:13:

In Reply to: [ActiveKey review](#) posted by Tej Grover on July 18, 1999 at 14:16:20:

Hi Tej,

I can't believe you found that. I just got word of it Friday night. I guess I would say that the reviewer thought it was pretty good, but would have liked it to work within Address Book, etc. rather than just Memo Pad, in order to justify learning the high-efficiency layout, etc. Not a review link I'd put on my web page, I'd say.

> I also want to take the time to thank Ron for being so generous with his
> source code, time and advice helping others (me) get up to speed with
> Forth and the Palm OS. Congratulations! (now what are you going to do

> for an encore ;)

Thanks--no problem on the source code availability. I've certainly looked at and used Neal's sources, Erwin's sources, Allen Chen's source, and so forth 8^).

I'm definitely undergoing Forth withdrawal now, so I'm trying to decide my next app soon so I can have interesting lunchtimes again.

By the way, congrats to Erwin and Ross and Neal on their ratings for their apps! I've been in and out and haven't been able to participate much this week. I might mention that Neal has a nice review of (StreakHack or ClearHack?) in the June Pen Computing Magazine.

Ron

Re: ActiveKey review

Posted by [Neal Bridges](#) on July 18, 1999 at 23:50:14:

In Reply to: [Re: ActiveKey review](#) posted by Ron Doerfler on July 18, 1999 at 16:35:13:

> I can't believe you found that. I just got word of it
> Friday night. I guess I would say that the reviewer thought
> it was pretty good, but would have liked it to work within
> Address Book, etc. rather than just Memo Pad, in order
> to justify learning the high-efficiency layout, etc. Not
> a review link I'd put on my web page, I'd say.

I think you might want to link to it -- my take on it was that she thought ActiveKey was a good idea that would be even better were it universally applicable to all the applications on the device. She isn't a developer, and hence is unaware of the considerations that make that impractical.

[...]

> I'm definitely undergoing Forth withdrawal now, so I'm trying
> to decide my next app soon so I can have interesting lunchtimes
> again.

Looking forward to seeing what you come up with.

> By the way, congrats to Erwin and Ross and Neal on their ratings
> for their apps! I've been in and out and haven't been able to
> participate much this week. I might mention that Neal has a
> nice review of (StreakHack or ClearHack?) in the June

> Pen Computing Magazine.

Thanks!

Neal

Who dun it?!?

Posted by [Erwin Schomburg](#) on July 16, 1999 at 17:02:41:

When I was just checking up on Tucows I found that my Eisbär was submitted and rated, with a description that is neither present on my homepage, PalmGear or the Readme, but must have been derived from the Quartus File Area description of it. So, who of you dun it?!? 8-)

May the Forth be with you!

/Erwin

BTW: This my first, almost pathetic, attempt to get a feeling how Palm OS goes together with Forth, rated five flyers, one more than my (up to now) price cow in the world of Quartus. Go figure. Chuckle.

Re: Who dun it?!?

Posted by [E. Ross Helton](#) on July 16, 1999 at 19:17:31:

In Reply to: [Who dun it?!?](#) posted by Erwin Schomburg on July 16, 1999 at 17:02:41:

Hi Erwin;

> BTW: This my first, almost pathetic, attempt to get a feeling how Palm OS goes
> together with Forth, rated five flyers, one more than my (up to now) price cow
> in the world of Quartus. Go figure. Chuckle.

the program may have been picked up by someone at Tucows. The reason I say this is that my program 'Rtrek' is in at least two other places besides Tucows, and I didn't put it there. Like yours the description for it is different than I would have put up. I can only assume that these places check other software sites and upload programs at random, or at least ones that have some exposure on other sites.

Congrats that you got 5 Planes for it. Personally I think it deserves it.

Make it a good day!

Ross

read out of seconds?

Posted by [E. Ross Helton](#) on July 16, 1999 at 12:28:36:

Hi;

Did I miss the place where you can make the time read on the screen by the count of seconds? I would like to make a sort of timer start as soon as the program is opened and continue until the program is closed or restart.

Where is there an example of a code snippet for this?

Make it a good day!

Ross

Re: read out of seconds?

Posted by [Erwin Schomburg](#) on July 16, 1999 at 13:39:31:

In Reply to: [read out of seconds?](#) posted by E. Ross Helton on July 16, 1999 at 12:28:36:

> Hi;

> Did I miss the place where you can make the time read on the screen by the count

> of seconds? I would like to make a sort of timer start as soon as the program
> is opened and continue until the program is closed or restart.

> Where is there an example of a code snippet for this?

>
> Make it a good day!

> Ross

You get system-seconds from TimGetSeconds as a double number.
With the code snippets to save preferences (see Neal's snippets on the subject in the forum archives or in sample apps such as Quintominoes) you can save elapsed time on app termination.

The raw evaluation would look like this (assuming a single number range suffices):

```
include double
2variable start-time
```

```
variable elapsed-time \ this goes into the preferences to be saved range
```

```
TimGetSeconds start-time 2! \ this goes into startup word of your code
: e-tim ( --- ) \ this needs to be called in exit handler
\just before you store prefs
TimGetSeconds
start-time 2@ d- d>s elapsed-time ! ;
```

May the Forth be with you!

/Erwin

Re: read out of seconds?

Posted by [Neal Bridges](#) on July 16, 1999 at 15:43:56:

In Reply to: [Re: read out of seconds?](#) posted by Erwin Schomburg on July 16, 1999 at 13:39:31:

```
> > Hi;
> > Did I miss the place where you can make the time read on the screen by the
> > count
> > of seconds? I would like to make a sort of timer start as soon as the
program
> > is opened and continue until the program is closed or restart.
> > Where is there an example of a code snippet for this?
> You get system-seconds from TimGetSeconds as a double number.
> With the code snippets to save preferences (see Neal's snippets on the subject
> in the forum archives or in sample apps such as Quintominoes) you can save
> elapsed time on app termination.
```

TimGetSeconds is the right place to get elapsed seconds -- not sure that Ross wants to save those seconds as part of his preferences, though.

Neal

Re: read out of seconds?

Posted by [E. Ross Helton](#) on July 16, 1999 at 16:10:12:

In Reply to: [Re: read out of seconds?](#) posted by Neal Bridges on July 16, 1999 at 15:43:56:

Hi Neal;

```
> TimGetSeconds is the right place to get elapsed seconds -- not sure that Ross
```

> wants to save those seconds as part of his preferences, though.

What I want is for the time to be reading like a timer on the screen. I don't want anything to be saved or converted. All it has to do is to start when the program starts and keep reading out. When the program is exited or restarted it is set to zero and starts over.

Make it a good day!

Ross

Re: read out of seconds?

Posted by [Carl Jacobsen](#) on July 16, 1999 at 16:47:06:

In Reply to: [Re: read out of seconds?](#) posted by E. Ross Helton on July 16, 1999 at 16:10:12:

> What I want is for the time to be reading like a timer on the screen. I don't
> want anything to be saved or converted. All it has to do is to start when the
> program starts and keep reading out. When the program is exited or restarted
> it is set to zero and starts over.

Okay, try playing with this (it's mostly off the top of my head and **untried**, so, uh, this code is worth what you paid for it :-)...

It ought to display a constantly updating count of seconds in a field of your choice. Making it display in hh:mm:ss format is left as an exercise for the reader :-)

Neal can probably point you towards something involving getting the OS to remind you once per second to update your counter, rather than my cruder method of sticking something into the event loop.

-- Carl

```
2VARIABLE starttime
2VARIABLE lasttime 0. lasttime 2!

1234 CONSTANT timeFieldID \ your field# here

(hex) 80 CONSTANT numSpc

\ replace leading 0's w/numeric spaces
: num-fill ( c-addr u -- )
0 DO
  DUP C@ [CHAR] 0 = IF
    numSpc OVER C!
```

```
ELSE LEAVE THEN
CHAR+
LOOP DROP ;
```

```
\ Display double as 6 digits, right
\ justified, on an editable field.
\ Can substitute in string>anyField
\ from PhoneDecode to display in a
\ non-editable field.
```

```
\
: display-seconds ( seconds. -- )
<# # # # # # # # #> 2DUP num-fill
timeFieldID string>Field ;
```

```
\ Compare current time to lasttime,
\ if different, update lasttime and
\ the on-screen display.
```

```
\
: update-time ( -- )
TimGetSeconds 2DUP lasttime 2@ D= IF
2DUP lasttime 2!
starttime D- display-seconds
ELSE 2DROP THEN ;
```

```
\ Call update-time in your event handler(s)
\ so that it gets a chance to update
\ "occasionally".
```

```
\
: main-event
update-time
... ;
```

```
\ Init starttime in your startup code, so
\ that we can display times relative to
\ program start.
```

```
\
: startup
...
TimGetSeconds starttime 2!
... ;
```



Re: read out of seconds?

Posted by [E. Ross Helton](#) on July 22, 1999 at 11:06:22:

In Reply to: [Re: read out of seconds?](#) posted by Carl Jacobsen on July 16, 1999 at 16:47:06:

Hi Carl;

Thanks for the snippet and the comments.

Make it a good day!

Ross

```
> > What I want is for the time to be reading like a timer on the screen. I
don't
> > want anything to be saved or converted. All it has to do is to start when
the
> > program starts and keep reading out. When the program is exited or
restarted
> > it is set to zero and starts over.
```

```
> Okay, try playing with this (it's mostly off the top of my head and
> untried, so, uh, this code is worth what you paid for it :-)...
```

```
> It ought to display a constantly updating count of seconds in a field
> of your choice. Making it display in hh:mm:ss format is left as an
> exercise for the reader :-)
```

```
> Neal can probably point you towards something involving getting the OS
> to remind you once per second to update your counter, rather than my
> cruder method of sticking something into the event loop.
```

```
> -- Carl
```

```
>
```

```
> 2VARIABLE starttime
> 2VARIABLE lasttime 0. lasttime 2!
>
> 1234 CONSTANT timeFieldID \ your field# here
>
> (hex) 80 CONSTANT numSpc
>
> \ replace leading 0's w/numeric spaces
> : num-fill ( c-addr u -- )
>   0 DO
>     DUP C@ [CHAR] 0 = IF
>       numSpc OVER C!
>     ELSE LEAVE THEN
>     CHAR+
>   LOOP DROP ;
>
> \ Display double as 6 digits, right
```

```
> \ justified, on an editable field.
> \ Can substitute in string>anyField
> \ from PhoneDecode to display in a
> \ non-editable field.
> \
> : display-seconds ( seconds. -- )
>   <# # # # # # # # #> 2DUP num-fill
>   timeFieldID string>Field ;
>
> \ Compare current time to lasttime,
> \ if different, update lasttime and
> \ the on-screen display.
> \
> : update-time ( -- )
>   TimGetSeconds 2DUP lasttime 2@ D= IF
>     2DUP lasttime 2!
>     starttime D- display-seconds
>   ELSE 2DROP THEN ;
>
> \ Call update-time in your event handler(s)
> \ so that it gets a chance to update
> \ "occasionally".
> \
> : main-event
>   update-time
>   ... ;
>
> \ Init starttime in your startup code, so
> \ that we can display times relative to
> \ program start.
> \
> : startup
>   ...
>   TimGetSeconds starttime 2!
>   ... ;
>
```

Re: read out of seconds?

Posted by Erwin on July 16, 1999 at 17:13:07:

In Reply to: [Re: read out of seconds?](#) posted by Carl Jacobsen on July 16, 1999 at 16:47:06:

```
> It ought to display a constantly updating count of seconds in a field
> of your choice. Making it display in hh:mm:ss format is left as an
```

> exercise for the reader :-)

FYI, *that* can (almost) be seen in "Facility-ext" of the library, if you dare to afford the system trap, that is. Should be easy to find values that lets TimSecondsToDateTime count from a zero point.

/Erwin

Re: read out of seconds?

Posted by [Carl Jacobsen](#) on July 17, 1999 at 14:46:51:

In Reply to: [Re: read out of seconds?](#) posted by Erwin on July 16, 1999 at 17:13:07:

> > It ought to display a constantly updating count of seconds in a field
> > of your choice. Making it display in hh:mm:ss format is left as an
> > exercise for the reader :-)

>

> FYI, *that* can (almost) be seen in "Facility-ext" of the library, if you
> dare to afford the system trap, that is. Should be easy to find values that
> lets TimSecondsToDateTime count from a zero point.

Hmm, actually, TimSecondsToDateTime will split out hours, minutes, and seconds (as well as other fields), but it won't format it into a string; it appears to be a clone of Unix's localtime() and gmtime() functions. There are other systriaps (e.g. DateToAscii) that will format a date as a string, but they don't include the seconds.

So, I was intrigued, and ended up writing some code for this last night; I note now that I didn't take other countries' varying time separators into account -- if one wanted to, one could code up the equivalent of the TimeSeparator() macro from Preferences.h, and then deal with querying the system preferences. I wasn't that energetic, and so fell back upon a typically US-centric fixed HH:MM:SS format.

There are actually two variations of the code below, controlled by [IF]: one is more verbose, likely a little easier to understand, unrolled, and perhaps slightly faster, the other uses a loop and is more terse, but likely runs a trace slower. As well, there's an [IF]...[THEN] conditional block around some testing/demo code at the end.

Cheers,
-- Carl

\ hms - 99.7.16 5:51pm CRJ

```
needs double
needs dblmath      ( for ud/mod )
needs tools-ext    ( for [IF] et.al. )
```

```
360000. 2CONSTANT maxSeconds
```

```
: seconds>hms ( secs. -- ss mm hh )
maxSeconds ud/mod 2DROP
3600 UM/MOD >R 60 /MOD R> ;
```

```
: digit! ( u0..9 c-addr -- )
SWAP [CHAR] 0 + SWAP C! ;
```

```
: 2digits! ( u0..99 c-addr -- )
SWAP 10 /MOD ROT TUCK
digit! CHAR+ digit! ;
```

```
1 [IF] \ 1=unrolled/0=loop version
```

```
8 CONSTANT hms-len
CREATE hms-buf
hms-len CHARS ALLOT
```

```
hms-buf
DUP 0 CHARS + CONSTANT hh-pos
DUP 2 CHARS + CONSTANT c1-pos
DUP 3 CHARS + CONSTANT mm-pos
DUP 5 CHARS + CONSTANT c2-pos
DUP 6 CHARS + CONSTANT ss-pos
```

```
: seconds>hh:mm:ss
( seconds. -- c-addr u )
seconds>hms hh-pos 2digits!
mm-pos 2digits! ss-pos 2digits!
[CHAR] : c1-pos C! [CHAR] : c2-pos C!
hms-buf hms-len ;
```

```
[ELSE]
needs toolkit ( for bounds )
```

```
8 CONSTANT hms-len
CREATE hms-buf
hms-len 1+ CHARS ALLOT
```

```
: seconds>hh:mm:ss
( seconds. -- c-addr u )
seconds>hms hms-buf DUP >R
hms-len bounds DO
I 2digits! [CHAR] : I 2 CHARS + C!
3 CHARS +LOOP R> hms-len ;
```

```
[THEN]
```

```
1 [IF]
: tryit ( seconds. -- )
2DUP D. ." = "
seconds>hh:mm:ss TYPE CR ;
```

```
: go
  CR 1. 10 0 DO
    2DUP tryit D2* D2*
  LOOP ;
```

```
go
[THEN]
```

Re: read out of seconds

Posted by [Jim Deakin](#) on July 20, 1999 at 07:39:30:

In Reply to: [Re: read out of seconds?](#) posted by Carl Jacobsen on July 17, 1999 at 14:46:51:

I saw a nice method of translating a seconds count to hh:mm:ss, (possibly in one of Leo Wong's files). If you use Neal's modified <# and #> to get a zero terminated string, it should be ideal. The string needs to be saved or used before any other output operations get at the buffer though.

Here it is, from memory:

```
\ Assuming base is 10 to start with...
```

```
\ This builds :ss or :mm in the string buffer, and leaves the rest
```

```
\ to be worked on
```

```
: :xx ( ud1 -- ud2 )
```

```
#
```

```
6 base ! #
```

```
[char] : hold
```

```
10 base ! ;
```

```
: sec->h:mm:ss ( ud1 -- c-addr u )
```

```
<# :xx :xx #s #> ;
```

```
\ Test
```

```
123496.
```

```
sec->h:mm:ss type
```

Attribution Correction

Posted by [Jim Deakin](#) on August 05, 1999 at 10:49:02:

In Reply to: [Re: read out of seconds](#) posted by Jim Deakin on July 20, 1999 at 07:39:30:

Hi, I said:

> I saw a nice method of translating a seconds count to hh:mm:ss,
> (possibly in one of Leo Wong's files).

It was actually in Benjamin Hoyt's ANSized code from Starting Forth Chapter 7. I don't know how Brodie himself did it, as my early version of Starting Forth has different excercises.

- [ANSized Starting Forth](#)

Re: read out of seconds

Posted by [E. Ross Helton](#) on July 22, 1999 at 11:07:41:

In Reply to: [Re: read out of seconds](#) posted by Jim Deakin on July 20, 1999 at 07:39:30:

Hi Jim;

Thanks for the snippet and thanks for the comments and good words

make it a good day!

Ross

>
> I saw a nice method of translating a seconds count to hh:mm:ss,
> (possibly in one of Leo Wong's files). If you use Neal's modified <# and
> #> to get a zero terminated string, it should be ideal. The string needs
> to be saved or used before any other output operations get at the buffer
> though.
> Here it is, from memory:

> \ Assuming base is 10 to start with...

> \ This builds :ss or :mm in the string buffer, and leaves the rest

> \ to be worked on

> : :xx (ud1 -- ud2)

> #

> 6 base ! #

> [char] : hold

> 10 base ! ;

```
>  
> : sec->h:mm:ss ( ud1 -- c-addr u )  
> <# :xx :xx #s #> ;  
  
> \ Test  
> 123496.  
> sec->h:mm:ss type
```

Re: read out of seconds

Posted by Erwin on July 20, 1999 at 10:20:01:

In Reply to: [Re: read out of seconds](#) posted by Jim Deakin on July 20, 1999 at 07:39:30:

```
>  
> I saw a nice method of translating a seconds count to hh:mm:ss,  
> (possibly in one of Leo Wong's files). If you use Neal's modified <# and  
> #> to get a zero terminated string, it should be ideal. The string needs  
> to be saved or used before any other output operations get at the buffer  
> though.  
> Here it is, from memory:  
  
> \ Assuming base is 10 to start with...  
  
> \ This builds :ss or :mm in the string buffer, and leaves the rest  
> \ to be worked on  
> : :xx ( ud1 -- ud2 )  
> #  
> 6 base ! #  
> [char] : hold  
> 10 base ! ;  
  
>  
> : sec->h:mm:ss ( ud1 -- c-addr u )  
> <# :xx :xx #s #> ;  
  
> \ Test  
> 123496.  
> sec->h:mm:ss type
```

If there ever will be a book on "Obfuscated Forth" it should contain this example. Lean and neat 8-)

/Erwin

Re: read out of seconds?

Posted by [Neal Bridges](#) on July 18, 1999 at 00:43:27:

In Reply to: [Re: read out of seconds?](#) posted by Carl Jacobsen on July 17, 1999 at 14:46:51:

> So, I was intrigued, and ended up writing some code for this last night;

[code snipped]

Very cool! Thanks for the code.

Neal

Re: read out of seconds?

Posted by Erwin on July 16, 1999 at 16:15:41:

In Reply to: [Re: read out of seconds?](#) posted by E. Ross Helton on July 16, 1999 at 16:10:12:

> Hi Neal;

>

> > TimGetSeconds is the right place to get elapsed seconds -- not sure that Ross

> > wants to save those seconds as part of his preferences, though.

>

> What I want is for the time to be reading like a timer on the screen. I don't
> want anything to be saved or converted. All it has to do is to start when the
> program starts and keep reading out. When the program is exited or restarted
it

> is set to zero and starts over.

>

> Make it a good day!

> Ross

I was thinking sophistication over your "closed or restart", sorry for the misinterpretation.

May the Forth be with you!

/Erwin

Re: read out of seconds?

Posted by [E. Ross Helton](#) on July 16, 1999 at 16:26:17:

In Reply to: [Re: read out of seconds?](#) posted by Erwin on July 16, 1999 at 16:15:41:

> I was thinking sophistication over your "closed or restart", sorry for the
> misinterpretation.

> May the Forth be with you!

> /Erwin

No problem Erwin;

I probably didn't get it explained as I should have. Thanks for the help!

Make it a good day!

Ross

Re: read out of seconds?

Posted by [E. Ross Helton](#) on July 16, 1999 at 15:01:32:

In Reply to: [Re: read out of seconds?](#) posted by Erwin Schomburg on July 16, 1999 at 13:39:31:

Hi Erwin;

Thanks I had missed seeing that somehow.

Make it a good day!

Ross

> > Did I miss the place where you can make the time read on the screen by the
> count

> > of seconds? I would like to make a sort of timer start as soon as the
program

> > is opened and continue until the program is closed or restart.

> > Where is there an example of a code snippet for this?

> >

> > Make it a good day!

> > Ross

> You get system-seconds from TimGetSeconds as a double number.

> With the code snippets to save preferences (see Neal's snippets on the subject
> in the forum archives or in sample apps such as Quintominoes) you can save

```
> elapsed time on app termination.  
> The raw evaluation would look like this (assuming a single number range  
> suffices):  
> include double  
> 2variable start-time  
> variable elapsed-time \ this goes into the preferences to be saved range  
> TimGetSeconds start-time 2! \ this goes into startup word of your code  
> : e-tim ( --- ) \ this needs to be called in exit handler  
> \just before you store prefs  
> TimGetSeconds  
> start-time 2@ d- d>s elapsed-time ! ;  
>  
> May the Forth be with you!  
> /Erwin
```

ekey speed

Posted by [Vadim Zaliva](#) on July 15, 1999 at 21:23:01:

Hi!

I have noticed that **ekey** is not very fast operation.

I have code which reads from serial port and I want it to exit once user taps screen.

I've put 'ekey pointerDownEvent =' as reading loop exit condition and reading become extremely slow. Something like 1 second per byte.

If there is any other ways to check for events without such delay?

Vadim

Re: ekey speed

Posted by [Dave Seidel](#) on July 15, 1999 at 21:37:07:

In Reply to: [ekey speed](#) posted by Vadim Zaliva on July 15, 1999 at 21:23:01:

I believe that you can use (ekey), which takes a timeout value, instead of ekey, which uses a fixed 500 ms delay. For example, "250. (ekey)"

If I'm wrong, someone please correct me.

- Dave

> I have noticed that **ekey** is not very fast
> operation.

Re: ekey speed

Posted by [Vadim Zaliva](#) on July 15, 1999 at 21:49:53:

In Reply to: [Re: ekey speed](#) posted by Dave Seidel on July 15, 1999 at 21:37:07:

> I believe that you can use (ekey), which takes a timeout value, instead of
ekey,
> which uses a fixed 500 ms delay. For example, "250. (ekey)"

Thank you for advice.

In what units this delay is?

If it is in ticks, if there is a way to convert seconds
to ticks in a portable way. There was constant
TicksPerSecond in C API, but I can't find it in quartus.

Very few documentation exists for quartus library.

But this is compensated by helpful people
in this forum :-)

Vadim

Re: ekey speed

Posted by [Neal Bridges](#) on July 15, 1999 at 21:55:18:

In Reply to: [Re: ekey speed](#) posted by Vadim Zaliva on July 15, 1999 at 21:49:53:

> > I believe that you can use (ekey), which takes a timeout value, instead of
> ekey,
> > which uses a fixed 500 ms delay. For example, "250. (ekey)"
> Thank you for advice.

That's correct -- in fact 0. (ekey) is the fastest possible check for an event.

> In what units this delay is?

It's in ticks.

> If it is in ticks, if there is a way to convert seconds
> to ticks in a portable way. There was constant
> TicksPerSecond in C API, but I can't find it in quartus.

All the Palm devices use 100 ticks/second. You can define it as a constant if you wish.

> Very few documentation exists for quartus library.
> But this is compensated by helpful people
> in this forum :-)

(ekey) is certainly documented -- what do you find missing that you need?

Neal

String manipulation

Posted by [Tej Grover](#) on July 15, 1999 at 18:52:06:

I'm having some difficulty figuring out how to manipulate strings in Forth, especially setting up string variables. For example:

```
\ test
needs core-ext

: Test s" test..." ;

create Buffer1 20 chars allot
Buffer1 20 chars erase

: go
Buffer1 dup @ .s
type cr
Test Buffer1 ! dup @ .s
```

```
type cr
Buffer1 dup @ .s
type
;
```

When I run this, I get:

```
go <2> 576 0
<2> 568 29797
test...c#####M####
<2> 576 7
##### ok
```

Where the # represents the hollow box character; I assume the 568 and 576 are the memory locations of Test and Buffer1 respectively.

What does the 29797 represent?

How do I turn the "#####" back into "test..." at the end?

Is the length of the string placed into Buffer1 not automatically tracked, and if not how would I go about counting it?

I've pored through everything I could find on the Internet and can find no good but easy examples of string manipulation. Any suggestions/referrals would be appreciated.

Regards,
Tej

Re: String manipulation

Posted by [Carl Jacobsen](#) on July 15, 1999 at 20:25:44:

In Reply to: [String manipulation](#) posted by Tej Grover on July 15, 1999 at 18:52:06:

> I'm having some difficulty figuring out how to manipulate strings in Forth,
> especially setting up string variables. For example:

[code snipped]

> Is the length of the string placed into Buffer1 not automatically tracked,
> and if not how would I go about counting it?

To start at the middle first, yes, the length of the string placed into Buffer1 is *not* automatically tracked. Strings in Forth are simply arrays of characters, which have no internal notion of their own length. If you want to store a string, you'll need both to name and reserve space for the string (CREATE foo 20 CHARS ALLOT), and also make a place to keep the length (VARIABLE foo-len).

(Hmm, there are what they call "counted strings", in Forth, where the first byte is used as a length, but I've not yet had a use for them; I think that they're more commonly used for accessing the Forth dictionary.)

I'm having a little trouble figuring out just what your code is trying to do, but I'm guessing that you want to copy the string provided by Test into Buffer1, and then print it. How about trying this? ...

```
\ test
needs core-ext

: Test ( -- c-addr u )
  S" test..." ;

CREATE Buffer1 20 CHARS ALLOT
VARIABLE Buffer1Len

Buffer1 20 CHARS ERASE
0 Buffer1Len !

: go ( -- )
  Buffer1 Buffer1Len @ .S
  TYPE CR
  Test DUP Buffer1Len !
  Buffer1 SWAP MOVE
  Buffer1 Buffer1Len @ .S
  TYPE ;
```

Hope this makes some sense,
-- Carl

Re: String manipulation

Posted by [Neal Bridges](#) on July 15, 1999 at 20:15:35:

In Reply to: [String manipulation](#) posted by Tej Grover on July 15, 1999 at 18:52:06:

> I'm having some difficulty figuring out how to manipulate strings in Forth,
> especially setting up string variables. For example:

[example snipped]

A CREATED buffer is simply a region in memory. Where you store the length of a string is up to you. Also, ! and @ store and fetch one cells'-worth of data, not an entire string.

It was at one time fairly common to see 'counted strings' in Forth -- strings whose first byte stored their length. In modern systems, treating a string as two cells of data -- address and length -- provides better flexibility, and that's the way the Standard leans; however, counted strings can still be useful.

There are words in *toolkit.txt* for manipulating strings: **append** and **place**.

Here's an overview -- let me know if you want further examples:

```
: fixed-string s" Hello" ;
```

```
create string-buffer 20 chars allot
```

```
\ To display the fixed-string:
```

```
fixed-string type cr
```

```
\ To copy a two-cell string to a counted string:
```

```
fixed-string string-buffer place
```

```
\ To type the resulting counted string:
```

```
string-buffer count type cr
```

```
\ To copy a two-cell string to a buffer, with the length kept elsewhere:
```

```
fixed-string string-buffer swap move
```

```
\ To append one string to another:
```

```
: extra-stuff s" There" ;
```

```
string-buffer 5 extra-stuff append type cr
```

Neal

Track Record for Quartus Apps @ Tucows

Posted by [Erwin Schomburg](#) on July 15, 1999 at 16:33:50:

Five Cows for ActiveKey, Four Planes for Quintominoes, in Top Five for Rtrek on ZDNet

Darn impressive track record for some assorted Quartus apps I'd say; and only a teeny weeny little bit of personal bragging involved 8-).

Thanks Neal for having made this possible.

/Erwin

Re: Track Record for Quartus Apps @ Tucows

Posted by [E. Ross Helton](#) on July 15, 1999 at 18:44:56:

In Reply to: [Track Record for Quartus Apps @ Tucows](#) posted by Erwin Schomburg on July 15, 1999 at 16:33:50:

Hi Erwin and of course Neal;

Wanted to amend the count somewhat. 'Rtrek' also has a Four Plane count at Tucows, and is has second listing status at Websoftpro.

> Five Cows for ActiveKey, Four Planes for Quintominoes, in Top Five for Rtrek on

> ZDNet

> Darn impressive track record for some assorted Quartus apps I'd say; and only a

> teeny weeny little bit of personal bragging involved 8-).

As for teeny weeny Erwin you deserve whatever brag can be given. You've done a wonderful job on your programs and deserve thanks for sharing them with us.

> Thanks Neal for having made this possible.

I also want to add my thanks to Neal for making Quartus possible. Also want to thank Erwin for the help I have gotten from him and especially I want to thank my son Jesse Helton (who is a programmer at HighVoltage) for always being there as a wonderful resource.

Thanks again Neal

Make it a good day!

Ross

Re: Track Record for Quartus Apps @ Tucows

Posted by [Neal Bridges](#) on July 15, 1999 at 18:50:25:

In Reply to: [Re: Track Record for Quartus Apps @ Tucows](#) posted by E. Ross Helton on July 15, 1999 at 18:44:56:

> Hi Erwin and of course Neal;

> Wanted to amend the count somewhat. 'Rtrek' also has a Four Plane count at
> Tucows, and is has second listing status at Websoftpro.

Duco (a Quartus Forth app) also has a 5-star rating at TuCows.

Neal

Re: Track Record for Quartus Apps @ Tucows

Posted by [E. Ross Helton](#) on July 15, 1999 at 19:09:30:

In Reply to: [Re: Track Record for Quartus Apps @ Tucows](#) posted by Neal Bridges on July 15, 1999 at 18:50:25:

> > Hi Erwin and of course Neal;

> > Wanted to amend the count somewhat. 'Rtrek' also has a Four Plane count at
> > Tucows, and is has second listing status at Websoftpro.

> Duco (a Quartus Forth app) also has a 5-star rating at TuCows.

> Neal

For those who don't know Neal has 5 planes rating at Tucows for his LeftHack program and 4 planes for his Shifthack programs.

Make it a good day!

Ross

Re: Trackn Record for Quartus Apps @ Tucows

Posted by Erwin on July 16, 1999 at 01:36:32:

In Reply to: [Re: Track Record for Quartus Apps @ Tucows](#) posted by E. Ross Helton on July 15, 1999 at 19:09:30:

> For those who don't know Neal has 5 planes rating at Tucows for his LeftHack
> program and 4 planes for his Shifthack programs.

> Make it a good day!

> Ross

They don't qualify for the Quartus league 8-)

/Erwin

Re: Trackn Record for Quartus Apps @ Tucows

Posted by [E. Ross Helton](#) on July 16, 1999 at 09:00:32:

In Reply to: [Re: Trackn Record for Quartus Apps @ Tucows](#) posted by Erwin on July 16, 1999 at 01:36:32:

Hi Erwin;

I guess I didn't fully explain what I meant. I simply meant that the author of Quartus can make it work in more than just the language he has created for us to use and we have much to aspire to.

He deserves much Kudos for all of it.

>

> > For those who don't know Neal has 5 planes rating at Tucows for his LeftHack
> > program and 4 planes for his Shifthack programs.

> > Make it a good day!

> > Ross

> They don't qualify for the Quartus league 8-)

> /Erwin

Make it a good day!

Ross

Re: Trackn Record for Quartus Apps @ Tucows

Posted by Erwin on July 16, 1999 at 09:33:13:

In Reply to: [Re: Trackn Record for Quartus Apps @ Tucows](#) posted by E. Ross Helton on July 16, 1999 at 09:00:32:

> Hi Erwin;

> I guess I didn't fully explain what I meant. I simply meant that the author of

> Quartus can make it work in more than just the language he has created for us
> to use and we have much to aspire to.

> He deserves much Kudos for all of it.

> >
> > > For those who don't know Neal has 5 planes rating at Tucows for his
LeftHack
> > > program and 4 planes for his Shifthack programs.
> > > Make it a good day!
> > > Ross
> > They don't qualify for the Quartus league 8-)
> > /Erwin
>
> Make it a good day!
> Ross

No need to explain, we all know that Neal is versatile in programming not only
in Quartus, but the issue started with high rated Quartus apps and my "not in
this league" statement was given in a twinkling eye mood emphasized by
concluding it with a smiley.

May the Forth be with you!

/Erwin

Re: Track Record for Quartus Apps @ Tucows

Posted by [Neal Bridges](#) on July 15, 1999 at 16:48:02:

In Reply to: [Track Record for Quartus Apps @ Tucows](#) posted by Erwin Schomburg on
July 15, 1999 at 16:33:50:

> Five Cows for ActiveKey, Four Planes for Quintominoes, in Top Five for Rtrek
on
> ZDNet
> Darn impressive track record for some assorted Quartus apps I'd say; and only
a
> teeny weeny little bit of personal bragging involved 8-).
> Thanks Neal for having made this possible.

Thanks to all of you for using Quartus Forth to write such nifty apps. Keep it
up!

Neal

docinc usage problem/question

Posted by [Dave Seidel](#) on July 15, 1999 at 12:57:57:

I'm trying to use docinc.txt with 'include docinc' in my startup memo. I've tried several times to use docinclude, but in every case I get the error message "control structure mismatch". In each case, I've created the doc by cutting and pasting working code from a memo. The memo versions work, bur the doc version do not.

Any pointers? Must the docs be uncompressed? Thanks in advance.

- Dave

Re: docinc usage problem/question

Posted by [Neal Bridges](#) on July 15, 1999 at 14:28:22:

In Reply to: [docinc usage problem/question](#) posted by Dave Seidel on July 15, 1999 at 12:57:57:

> I'm trying to use docinc.txt with 'include docinc' in my startup memo. I've
> tried several times to use docinclude, but in every case I get the error
> message "control structure mismatch". In each case, I've created the doc by
> cutting and pasting working code from a memo. The memo versions work, bur the
> doc version do not.

> Any pointers? Must the docs be uncompressed? Thanks in advance.

The docs can certainly be compressed. Can you whittle down a sample for me to look at?

Neal

Re: docinc usage problem/question

Posted by [Dave Seidel](#) on July 15, 1999 at 20:22:10:

In Reply to: [Re: docinc usage problem/question](#) posted by Neal Bridges on July 15, 1999 at 14:28:22:

In SmartDoc or QED I make a record called "play" with the contents

\ play

needs music

```
: play  
C D E F# G ;
```

In Quartus, I do

```
include docinc  
docinclude play
```

And the response is

```
play? control structure mismatch
```

> The docs can certainly be compressed. Can you whittle down a sample for me to
> look at?

> Neal

Re: docinc usage problem/question

Posted by [Neal Bridges](#) on July 15, 1999 at 20:43:14:

In Reply to: [Re: docinc usage problem/question](#) posted by Dave Seidel on July 15, 1999 at 20:22:10:

> In SmartDoc or QED I make a record called "play" with the contents

> \ play

> needs music

```
> : play  
> C D E F# G ;
```

> In Quartus, I do

```
> include docinc  
> docinclude play
```

> And the response is

```
> play? control structure mismatch
```

The only way I'm able to cause the problem you describe is if I load *safe.txt* first. I'll try and track down why; in the meantime, if you include *safe* from within the DOC file, say, just after 'needs music', the problem goes away.

Neal

Re: docinc usage problem/question

Posted by [dave seidel](#) on July 15, 1999 at 21:33:29:

In Reply to: [Re: docinc usage problem/question](#) posted by Neal Bridges on July 15, 1999 at 20:43:14:

Aha, that's it! Sorry, I should have mentioned what was already loaded into environmrnt. I've been including safe.txt, along with couple of other things, in the startup file. Thanks.

BTW, I'm having a great time with QForth, which I registered within days of downloading. I've been secretly hoping for a reason to learn Forth for years. I just got my first Palm V at JavaOne a few weeks ago, and even though it came with a Java VM, Forth just seems to feel better on this device, especially along with RsrEdit (which I've also edited :-). Thanks for building such a cool tool and making it available!

- Dave

> The only way I'm able to cause the problem you describe is if I load
> safe.txt first. I'll try and track down why; in the meantime, if you
> include safe from within the DOC file, say, just after 'needs music',
> the problem goes away.

> Neal

Re: docinc usage problem/question

Posted by [Neal Bridges](#) on July 15, 1999 at 21:58:31:

In Reply to: [Re: docinc usage problem/question](#) posted by dave seidel on July 15, 1999 at 21:33:29:

> BTW, I'm having a great time with QForth, which I registered within days of
> downloading. I've been secretly hoping for a reason to learn Forth for years.
> I just got my first Palm V at JavaOne a few weeks ago, and even though it came
> with a Java VM, Forth just seems to feel better on this device, especially
along
> with RsrEdit (which I've also edited :-). Thanks for building such a cool
tool
> and making it available!

Glad you're having fun with it, Dave -- and thanks for your registration! I agree, Forth is an excellent fit for this device, and RsrcEdit a necessary addition.

Neal

serial receive?

Posted by [Vadim Zaliva](#) on July 15, 1999 at 05:14:58:

I am tryingt to write simple application which reads bytes from serial port and prints thir coded to the screen. I encountered some problems.

Here is structure of my application:

```
initSerLib
\ error check here
9600. serOpen
\ error check here
10. set-timeout
begin
buf 1 serRecv10 not
buf c@ 12 = not \ I want to exit upon reception byte 12
while
if
buf c@
u. cr
else
serClearErr
then
repeat
drop
serClose
\ err check here
```

This does not work. It seems to give random results.

Maybe I need init library with stop bits, etc.?

How could I specify value of timeout in seconds? In documentation they propose to user SysTicksPerSecond value, and I can't find it defined anywhere in Quartus.

Sincerely,

Vadim

Re: serial receive?

Posted by [Vadim Zaliva](#) on July 15, 1999 at 06:33:26:

In Reply to: [serial receive?](#) posted by Vadim Zaliva on July 15, 1999 at 05:14:58:

> I am tryingt to write simple application which
> reads bytes from serial port and prints thir coded to the screen.
> I encountered some problems.
> Here is structure of my application:

I just searched archives of this forum
and found some sample code which
answers most of my gestions above.
However I am not able to compile it.
Following code:

```
needs serial
...
serSettings: mysettings
```

yelds an error:

```
"mysettings" undefined word.
```

I do not see what's wrong with it.

Any suggestions?

Vadim

Re: serial receive?

Posted by [Neal Bridges](#) on July 15, 1999 at 09:24:37:

In Reply to: [Re: serial receive?](#) posted by Vadim Zaliva on July 15, 1999 at 06:33:26:

> > I am tryingt to write simple application which
> > reads bytes from serial port and prints thir coded to the screen.
> > I encountered some problems.
> > Here is structure of my application:

> I just searched archives of this forum
> and found some sample code which
> answers most of my gestions above.
> However I am not able to compile it.
> Following code:

```
> needs serial
> ...
> serSettings: mysettings

> yields an error:

> "mysettings" undefined word.

> I do not see what's wrong with it.

> Any suggestions?
```

Yes. I'll bet you're doing something like:

```
: go
  ...
  SerSettings: mysettings
  ...
;
```

SerSettings: is a defining word that parses the input buffer; use it *outside* of a definition.

```
SerSettings: mysettings
```

```
: go ... ;
```

Neal

DaVinci Beta Status

Posted by [Bob Wada](#) on July 14, 1999 at 22:49:23:

Neal -
Are you ready to release the beta code for the daVinci platform ?
- Bob Wada

Re: DaVinci Beta Status

Posted by [Neal Bridges](#) on July 14, 1999 at 22:51:17:

In Reply to: [DaVinci Beta Status](#) posted by Bob Wada on July 14, 1999 at 22:49:23:

```
> Neal -
> Are you ready to release the beta code for the daVinci platform ?
```

Yes, ready to release the code -- not yet ready to release the documentation, though. Soon. It's already gone through alpha and beta testing, so I'll be going straight into release.

Neal

Where is PhoneDecode?

Posted by [Philippe de Rochembeau](#) on July 14, 1999 at 15:35:13:

Could someone tell me where I can find PhoneDecode?

Many thanks.

Philippe de Rochembeau

Re: Where is PhoneDecode?

Posted by [Carl Jacobsen](#) on July 14, 1999 at 15:48:42:

In Reply to: [Where is PhoneDecode?](#) posted by Philippe de Rochembeau on July 14, 1999 at 15:35:13:

> Could someone tell me where I can find PhoneDecode?

I haven't put together a web page for it yet, but you can find it (bundled with its source code) at PilotGear (er, PalmGear, now). The URL below should take you straight there...

-- Carl

- [PhoneDecode at PilotGear](#)

"-trailing" word

Posted by [Carl Jacobsen](#) on July 14, 1999 at 14:55:52:

I had need for -trailing (which trims trailing blanks off of a string), from the string wordset, and couldn't find it in Quartus, so I wrote one (yeah, I could probably have found one on the net, but it was an interesting exercise). As well, I added a counterpart, /leading, to trim leading blanks off of a string. Figured someone else might find it useful, or at least interesting. If you change the "0 [IF]" to a "1 [IF]", it'll test itself...

Besides, the forum is much too small, now that it's been trimmed :-)

-- Carl

\ trailing - 99.7.14 11:28am CRJ

needs core-ext

```
\ trim trailing blanks from string
: -TRAILING ( c-addr u -- c-addr u )
  DUP IF
    2DUP 1- OVER + DO
      I C@ BL = IF 1- ELSE LEAVE THEN
    -1 +LOOP
  THEN ;
```

```
\ trim leading blanks from string
: /leading ( c-addr u -- c-addr u )
  DUP 0 ?DO
    OVER C@ BL = IF SWAP 1+ SWAP 1-
    ELSE LEAVE THEN
  LOOP ;
```

needs tools-ext

```
0 [IF]
: .str ( c-addr u -- c-addr u )
  2DUP ." [" TYPE ." ]" ;

: tryit ( c-addr u -- )
  >R CR ." Args: " 2DUP SWAP . .
  ." = " .str CR
  R> IF
    -trailing
    ." after -trailing: " .str CR
  THEN
  /leading
  ." after /leading: " .str CR
  ." Result: " SWAP . . CR ;
```

```
: go ( -- )
  S" " TRUE tryit
  S" " TRUE tryit
  S" " FALSE tryit
  S" hello" TRUE tryit
  S" abc " TRUE tryit
  S" def" TRUE tryit
  S" ghi " TRUE tryit ;
```

TRUE more DROP

go

[THEN]

Re: "-trailing" word

Posted by [Neal Bridges](#) on July 14, 1999 at 16:02:53:

In Reply to: ["-trailing" word](#) posted by Carl Jacobsen on July 14, 1999 at 14:55:52:

> I had need for -trailing (which trims trailing blanks off of a string), from
> the string wordset, and couldn't find it in Quartus, so I wrote one (yeah,
> I could probably have found one on the net, but it was an interesting
> exercise). As well, I added a counterpart, /leading, to trim leading blanks
> off of a string. Figured someone else might find it useful, or at least
> interesting. If you change the "0 [IF]" to a "1 [IF]", it'll test itself...
> Besides, the forum is much too small, now that it's been trimmed :-)

Thanks for the code, Carl. You might consider 1 /string as a replacement for swap 1+ swap 1-.

Neal

Re: "-trailing" word

Posted by [Carl Jacobsen](#) on July 14, 1999 at 19:32:34:

In Reply to: [Re: "-trailing" word](#) posted by Neal Bridges on July 14, 1999 at 16:02:53:

> Thanks for the code, Carl. You might consider 1 /string as a
> replacement for swap 1+ swap 1-.

[Gack] You're right, I should :-) I'd started out trying to make the word count the right number of characters to trim and then call /string at the end, and when that became troublesome, I forgot about /string altogether; with your change, it looks much better.

Thanks,
-- Carl

Jim Meadows' request: Serial code for IR -- coming soon

Posted by [Neal Bridges](#) on July 13, 1999 at 23:58:56:

Hi Jim. The thread your message was in was just archived -- just to let you know I'm still on the job.

Neal

Re: Jim Meadows' request: Serial code for IR -- coming soon

Posted by [Neal Bridges](#) on July 15, 1999 at 00:07:40:

In Reply to: [Jim Meadows' request: Serial code for IR -- coming soon](#) posted by Neal Bridges on July 13, 1999 at 23:58:56:

> Hi Jim. The thread your message was in was just archived -- just to let you > know I'm still on the job.

Hi again. Did some searching, found that you need to do a SerControl call after the SerOpen to enable the IRDA, and another before the SerClose to disable it. I'll put together a test routine shortly and let you know how it goes.

Neal

Re: Jim Meadows' request: Serial code for IR -- coming soon

Posted by [Jim Meadows](#) on July 16, 1999 at 21:21:14:

In Reply to: [Re: Jim Meadows' request: Serial code for IR -- coming soon](#) posted by Neal Bridges on July 15, 1999 at 00:07:40:

> > Hi Jim. The thread your message was in was just archived -- just to let you > > know I'm still on the job.

> Hi again. Did some searching, found that you need to do a SerControl call after > the SerOpen to enable the IRDA, and another before the SerClose to disable it. > I'll put together a test routine shortly and let you know how it goes.

> Neal

That's great! I'll give it a try as soon as you let me know the call to use. I already have serial i/o working fine. Thanks again for your help!

Jim

Re: Jim Meadows' request: Serial code for IR -- coming soon

Posted by [Neal Bridges](#) on July 21, 1999 at 23:50:59:

In Reply to: [Re: Jim Meadows' request: Serial code for IR -- coming soon](#) posted by Jim Meadows on July 16, 1999 at 21:21:14:

> > Hi again. Did some searching, found that you need to do a SerControl call
> after
> > the SerOpen to enable the IRDA, and another before the SerClose to disable
> it.
> > I'll put together a test routine shortly and let you know how it goes.
> > Neal

> That's great! I'll give it a try as soon as you let me know the call to use.

> I already have serial i/o working fine. Thanks again for your help!

Hi Jim -- I haven't written any actual code with this information yet, but I want to give you what I've got in the meantime.

The library systrap you want is 43030. It's called SerControl.

The C prototype is:

```
// Called to perform a serial manager control operation
// (v2.0 extension)
Err SerControl(UInt refNum, Word op, VoidPtr valueP, WordPtr valueLenP);
```

Thus the Forth stack diagram is:

```
( &valueLenP. &valueP. op refNum -- err )
```

Also needed:

```
9 constant serCtlIrDAEnable
10 constant serCtlIrDADisable
```

Here is untested code that should turn on and off redirection of the serial data through the IR, as an extension to *serial.txt*:

```
: SerControl ( &valueLenP. &valueP. op -- err )
  43030 serSysTrap4n nip ;
```

```
: IrEnable ( -- err )
  0. 0. serCtlIrDAEnable SerControl ;

: IrDisable ( -- err )
  0. 0. serCtlIrDADisable SerControl ;
```

Hopefully should get you rolling. Let me know how it goes!

Neal

Re: Jim Meadows' request: Serial code for IR -- coming soon

Posted by [Jim Meadows](#) on August 25, 1999 at 23:04:17:

In Reply to: [Re: Jim Meadows' request: Serial code for IR -- coming soon](#) posted by Neal Bridges on July 21, 1999 at 23:50:59:

```
> > > Hi again. Did some searching, found that you need to do a SerControl
call
> > after
> > > the SerOpen to enable the IRDA, and another before the SerClose to
disable
> > it.
> > > I'll put together a test routine shortly and let you know how it goes.
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> The C prototype is:

>
// Called to perform a serial manager control operation
> // (v2.0 extension)
> Err      SerControl(UInt refNum, Word op, VoidPtr valueP, WordPtr valueLenP);
>
> Thus the Forth stack diagram is:
>
( &valueLenP. &valueP. op refNum -- err )
```

> Also needed:

>

```
> 9 constant serCtlIrDAEnable
> 10 constant serCtlIrDADisable
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```

> Here is untested code that should turn on and off redirection of the serial data through the IR, as an extension to *serial.txt*:

>

```
> : SerControl ( &valueLenP. &valueP. op -- err )
>   43030 serSysTrap4n nip ;
>
> : IrEnable ( -- err )
>   0. 0. serCtlIrDAEnable SerControl ;
>
> : IrDisable ( -- err )
>   0. 0. serCtlIrDADisable SerControl ;
>
```

> Hopefully should get you rolling. Let me know how it goes!

> Neal

Neal, I thanks for the sample code. I have tried using this but so far no luck. Question ... I assume I first open the serial port then use IrEnable. All the other serial I/O remains the same. When done I use IrDisable then close the serial port. Is this right? If I remove the IrEnable/IrDisable the code I am using sends/receives serial I/O just fine. Do you know if there are any limitations on the serial baud rate that must be used?

Jim

Re: Jim Meadows' request: Serial code for IR -- coming soon

Posted by [Neal Bridges](#) on August 25, 1999 at 23:17:11:

In Reply to: [Re: Jim Meadows' request: Serial code for IR -- coming soon](#) posted by Jim Meadows on August 25, 1999 at 23:04:17:

```
> Neal, I thanks for the sample code. I have tried using this but so far no
> luck. Question ... I assume I first open the serial port then use IrEnable.
```

> All the other serial I/O remains the same. When done I use IrDisable then
> close the serial port. Is this right?

That's right.

> If I remove the IrEnable/IrDisable the
> code I am using sends/receives serial I/O just fine. Do you know if there are
> any limitations on the serial baud rate that must be used?

Quite possible. I'm unfamiliar with the transfer rates the IR supports. I'll check over the code I posted and make sure there's no error there.

Neal

Two new Forum archives

Posted by [Neal Bridges](#) on July 13, 1999 at 21:13:48:

I've archived the forum again -- twice, as it was overdue. The archive links are just below all the message threads on the main Discussion Forum page.

Neal

Emit problems

Posted by [Tej Grover](#) on July 13, 1999 at 12:37:41:

Is it possible to direct EMIT to the currently active field? I have a form created with RscEdit with a single field that I activate. I have a button that I would like to press and have it append some text to the text already in the field. When I use EMIT the character appear in the upper right corner, where AT would put them. Graffiti characters end up in the proper field.

Re: Emit problems

Posted by [Neal Bridges](#) on July 13, 1999 at 12:51:11:

In Reply to: [Emit problems](#) posted by Tej Grover on July 13, 1999 at 12:37:41:

> Is it possible to direct EMIT to the currently active field? I have a form
> created with RscEdit with a single field that I activate. I have a button that
I
> would like to press and have it append some text to the text already in the
> field. When I use EMIT the character appear in the upper right corner, where
AT

> would put them. Graffiti characters end up in the proper field.

EMIT just writes characters on the screen. To modify/extend the data in a field, you'll want to use the library file *Fields.txt*, specifically **Field>string** and **string>Field**. You might also look at the sources to Carl Jacobsen's PhoneDecode.

Neal

Good news about ActiveKey!

Posted by [Neal Bridges](#) on July 13, 1999 at 11:36:18:

Good news about Ron Dorfler's ActiveKey -- turns out TuCows gives it a 5-cow rating! Check it out at the link below.

Neal

- [TuCows gives ActiveKey five cows!](#)

Re: Good news about ActiveKey!

Posted by [Ron Doerfler](#) on July 13, 1999 at 13:47:27:

In Reply to: [Good news about ActiveKey!](#) posted by Neal Bridges on July 13, 1999 at 11:36:18:

By the way, the source code for ActiveKey is available to anyone on this forum. Drop me a line at my email link above and I'll email it to you that evening.

The default format is 3-column Word97. If you need it in a different format (3-column Word6.0/95, single-column .txt, etc.) just let me know in the email.

Ron

"Starting Forth" book

Posted by [Carl Jacobsen](#) on July 12, 1999 at 15:24:24:

I know that people here occasionally go looking for this book. For what it's worth, the Advanced Book Exchange (www.abebooks.com) tells me that these people:

Opamp Technical Books
1033 N. Sycamore Ave. , Los Angeles, CA, U.S.A., 90038.
opamp@netcom.com Ph: 800-468-4322. Fax: 323-464-0977.

have a copy of the book available for \$24.95. I don't know how often they update their data in ABE's database, so it may have sold already (and, obviously, if three of you call, two will be disappointed :-)

I've no connection with either establishment other than having heard of OpAmp before, and having used www.abebooks.com to locate and buy a number of out-of-print books (mostly science fiction, in my case, but they list pretty much anything)...

-- Carl

Re: "Starting Forth" book

Posted by [Tej Grover](#) on July 12, 1999 at 16:56:42:

In Reply to: ["Starting Forth" book](#) posted by Carl Jacobsen on July 12, 1999 at 15:24:24:

Just called, no luck :P, on Starting Forth or Thinking Forth, but I did add my name to their waiting list as they say they get both in from time to time... No guarantee on what the price would be, though.

Re: "Starting Forth" book

Posted by [Neal Bridges](#) on July 12, 1999 at 17:06:07:

In Reply to: [Re: "Starting Forth" book](#) posted by Tej Grover on July 12, 1999 at 16:56:42:

> Just called, no luck :P, on Starting Forth or Thinking Forth, but I did add my
> name to their waiting list as they say they get both in from time to time...
No
> guarantee on what the price would be, though.

"Thinking Forth" is (presumably still) available from the Forth Interest Group -- www.forth.org. There's no mention of it on their page, but I ordered mine by telephone some time back. Worth a try.

Neal

Re: "Starting Forth" book

Posted by [Vadim Zaliva](#) on July 12, 1999 at 18:07:43:

In Reply to: [Re: "Starting Forth" book](#) posted by Neal Bridges on July 12, 1999 at 17:06:07:

> is (presumably still) available from the Forth Interest Group
> -- www.forth.org. There's no mention of it on their page, but I ordered mine
> by
> telephone some time back. Worth a try.

I used to do some forth while ago on Apples.
It was more that 7 years ago, so I forgot
big deal of it. To refresh my memory I've checked
local book store and only book I found was
"Thinking Forth".

It is nice book, but if you are experienced programmer
and need just book on programming language, not
lengthy discussions about different approaches
to decomposition, etc. yo might not like it.

Framed tips like "To remember related things
put them near each other" are good for my 7 year
old daughter, not for me. :-)

Vadim

Re: "Starting Forth" book

Posted by [Neal Bridges](#) on July 12, 1999 at 18:24:50:

In Reply to: [Re: "Starting Forth" book](#) posted by Vadim Zaliva on July 12, 1999 at 18:07:43:

> I used to do some forth while ago on Apples.
> It was more that 7 years ago, so I forgot
> big deal of it. To refresh my memory I've checked
> local book store and only book I found was
> "Thinking Forth".

> It is nice book, but if you are experienced programmer
> and need just book on programming language, not
> lengthy discussions about different approaches
> to decomposition, etc. yo might not like it.

> Framed tips like "To remember related things
> put them near each other" are good for my 7 year
> old daugther, not for me. :-)

Personally I find it to be an excellent book. While some of the programming advice may be obvious, I'd recommend it to any developer.

For a Forth language overview, you might take a look at the Forth Programmer's Handbook. You can buy it online from my Recommended Books page, or you can download it in PDF format as part of the 30-day free SwiftForth evaluation from www.forth.com. The SwiftForth evaluation expires after 30 days, but the PDF lives on.

Neal

Re: "Starting Forth" book - found at Mountain View Press

Posted by [Barry Ekstrand](#) on July 14, 1999 at 23:02:29:

In Reply to: [Re: "Starting Forth" book](#) posted by Neal Bridges on July 12, 1999 at 18:24:50:

I just wanted to pass on that I was able to buy a new copy of Starting Forth, 1st edition, at:

Mountain View Press
Box 429 Route 2
La Honda, CA 94020 USA

Phone: 415-747-0760

I believe I paid \$25 for it, probably plus tax and shipping. I had the impression that they had a fair supply of them when I bought mine (3 or 4 months ago).

Barry Ekstrand

Correction

Posted by [Tej Grover](#) on July 15, 1999 at 18:15:25:

In Reply to: [Re: "Starting Forth" book - found at Mountain View Press](#) posted by Barry Ekstrand on July 14, 1999 at 23:02:29:

Just wanted to update the information. He's changed his phone number.

Mountain View Press
Route 2, Box 429
La Honda, CA 94020
(650)747-0760
<http://www.theforthsource.com/>

newbie questions

Posted by [Vadim Zaliva](#) on July 12, 1999 at 04:06:59:

Hi!

I am still struggling to start writing on Forth on my pilot.
I am trying to create simple application, which will
just show some form.

I've created ResourceDatabase with RsrcEditor. Defined simple
form in it. I've assigned unique (at least at my machine) creator ID.

Now I wrote code like this

```
\ test  
needs resources  
  
(ID) p4ap (ID) VZBS use-resources
```

Here VZBS is creator ID.

When I try to run this code I got error message saying that
database not found! I could see it in RsrcEditor. I've compared
my database definition with some existing databases and it looks fine.

Am I doing something wrong?

If there is a way to define resources without RsrcEdit which is crashing all the
time with diferrent errors like "Line xyz: not in the form", after which I have
to reset my Pilot?

I rememeber in PILA there was a way to define resources right in the code.
I need few very simple resources and do not want bother with RsrcEdit. I could
use PILRC, but I am trying to maintain complete developement environment on my
pilot, so I can develop without using PC.

Sincerely,
Vadim

- [My pilot page](#)

Re: newbie questions

Posted by [Erwin Schomburg](#) on July 12, 1999 at 05:55:36:

In Reply to: [newbie questions](#) posted by Vadim Zaliva on July 12, 1999 at 04:06:59:

> Hi!

> I am still struggling to start writing on Forth on my pilot.
> I am trying to create simple application, which will
> just show some form.

> I've created ResourceDatabase with RsrcEditor. Defined simple
> form in it. I've assigned unique (at least at my machine) creator ID.

> Now I wrote code like this

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> \ test  
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```

> Here VZBS is creator ID.

> When I try to run this code I got error message saying that
> database not found! I could see it in RsrcEditor. I've compared
> my database definition with some existing databases and it looks fine.

The setup needs to be the other way round (creator id, then type) to work with use-resources.

> Am I doing something wrong?

> If there is a way to define resources without RsrcEdit which is crashing all
the
> time with different errors like "Line xyz: not in the form", after which I
have
> to reset my Pilot?

> I remember in PILA there was a way to define resources right in the code.
> I need few very simple resources and do not want bother with RsrcEdit. I could
> use PILRC, but I am trying to maintain complete development environment on my
> pilot, so I can develop without using PC.

Also if you use a Desktop based resource editor to copy resources onto Palm you

see the crashes if you have not properly specified the links from your app. I have not seen RsrcEdit crash on its own, do you use 1.002 (the newest and most bug-fixed)?

If you really want only very simple forms, there are blank form (1001) and blank form with shift indicator (1000) predefined in Quartus and automatically moved into compiled apps.

> Sincerely,
> Vadim

/Erwin

Re: newbie questions

Posted by [Carl Jacobsen](#) on July 12, 1999 at 11:11:03:

In Reply to: [Re: newbie questions](#) posted by Erwin Schomburg on July 12, 1999 at 05:55:36:

Hmm, mostly just echoing and expanding upon Erwin's comments, but here goes...

> > (ID) p4ap (ID) VZBS use-resources
> > Here VZBS is creator ID.

>
> > When I try to run this code I got error message saying that
> > database not found! I could see it in RsrcEditor.

I got tripped up on this at first, too. You've got the arguments the right way 'round, but the trick is that Neal has registered a creator id of "p4ap" for use with resources for Quartus. You need to build your resource database with creator id "p4ap" and use your creator id as the resource *type*. (Uh, if you're already doing this, then never mind :-)

> > If there is a way to define resources without RsrcEdit which is crashing
> > all the time with diferrent errors like "Line xyz: not in the form",
> > after which I have to reset my Pilot?

Hmm, I've used RsrcEdit pretty hard and I could crash earlier versions pretty regularly, but the current v1.002 is pretty stable for me... Worse comes to worse, back far enough out of your form to hit the "done" button at regular intervals so that you don't loose too much if it crashes (the old adage, "save early, save often").

Hmm, I also seemed to run into more trouble when I was constantly running with very little free memory (like under 50k). I solved that one (though RsrcEdit wasn't the driving factor) by getting a IIIx...

> > I rememeber in PILA there was a way to define resources right in the code.
> > I need few very simple resources and do not want bother with RsrcEdit. I
> > could use PILRC, but I am trying to maintain complete developement

> > environment on my pilot, so I can develop without using PC.
>
> If you really want only very simple forms, there are blank form (1001)
> and blank form with shift indicator (1000) predefined in Quartus and
> automatically moved into compiled apps.

Actually, technically, I suppose you could start with blankform and then make use of the various "dynamic" systraps (e.g. FrmNewBitmap, FrmNewForm, FrmNewGadget, FrmNewLabel, FldNewField, CtlNewControl, etc.) to build the forms you wanted directly with Quartus. Never tried this, but it ought to work...

Myself, I'd suggest sticking with RsrcEdit. Actually, I run BSD/OS most of the time myself (I see you run Linux), and I find that I do most of my form editing with RsrcEdit, but when I need to do some large global change (like, say, moving 25 fields to the left by two pixels), I hotsync/pilot-xfer to get the resource onto Unix, use prc2pilrc to turn it into pilrc source, make my changes with vi on Unix, and then use pilrc and pila to compile it back into a resource and send it back over to my Pilot. Works quite well...

Hope this helps,
-- Carl

Re: newbie questions

Posted by Erwin on July 12, 1999 at 11:54:21:

In Reply to: [Re: newbie questions](#) posted by Carl Jacobsen on July 12, 1999 at 11:11:03:

> I got tripped up on this at first, too. You've got the arguments the
> right way 'round, but the trick is that Neal has registered a creator id
> of "p4ap" for use with resources for Quartus. You need to build your
> resource database with creator id "p4ap" and use *your* creator id as the
> resource *type*. (Uh, if you're already doing this, then never mind :-)

Sorry, here you err! "p4ap" is not a registered creator ID, this string has nothing to do with how you set up your resources database except that Neal uses it in conjunction with "rsrc" for his resources and for the kernel resource in compiled apps. You can call your resources database whatever you like (I for example, call mine the same creator id the app is going to be registered under and type is "rsrc"), and it was simply the wrong way round sequence of type and creator id Tej presented in the code snippet above.

/Erwin

Re: newbie questions

Posted by [Carl Jacobsen](#) on July 12, 1999 at 13:51:42:

In Reply to: [Re: newbie questions](#) posted by Erwin on July 12, 1999 at 11:54:21:

> > I got tripped up on this at first, too. You've got the arguments the
> > right way 'round, but the trick is that Neal has registered a creator id
> > of "p4ap" for use with resources for Quartus. You need to build your
> > resource database with creator id "p4ap" and use *your* creator id as
> > the resource *type*. (Uh, if you're already doing this, then never
> > mind :-)

> Sorry, here you err! "p4ap" is not a registered creator ID, this string has
> nothing to do with how you set up your resources database except that Neal
> uses it in conjunction with "rsrc" for his resources ...

Okay, just for sake of argument :-) ...

"p4ap" *is*, indeed, a registered creator ID, with the description
"PilotFORTH app".

> ... You can call your resources database whatever you like (I for example,
> call mine the same creator id the app is going to be registered under and
> type is "rsrc"), and it was simply the wrong way round sequence of type and
> creator id Tej presented in the code snippet above.

Yes, indeed, you can use whatever you want for the creator id and type on
resource databases. If you use your registered CRID as the creator id of
your resource database, then deleting the app using "App/Delete..." in the
Palm's applications launcher will cause it to delete your resource database,
too (which can be quite astonishing). Using "p4ap" as the creator id, and
your registered creator id as the type, prevents this problem, and, since
the ids are registered, there cannot be any conflict. This "wrong way
round" usage is what Neal presents in the example programs, and I've found
it to work quite well.

-- Carl

Re: newbie questions

Posted by Erwin on July 12, 1999 at 14:53:59:

In Reply to: [Re: newbie questions](#) posted by Carl Jacobsen on July 12, 1999 at
13:51:42:

Ok, so I was just too stupid to search the creator database properly. 8-(
As for the rest, you are still in error, look at the long form from the original
Duco example of 22Nov1998, it clearly has the CrID first in sequence 8-):

DmModeReadOnly

```
(ID) p4ap (ID) Duco
DmOpenDatabaseByTypeCreator
2drop
```

```
Look also at the stack diagram as commented for "use-resources":
: use-resources
( creator-id. type. -- )
OpenResDB or 0=
abort" Resource db not found." ;
```

As for my personal convention to have the same CrID for the resources and the final app, yes I'm well aware that this will delete the resource database should I ever get so disappointed with my proceedings that I delete my work instead of recompiling it once more. That is intentionally.

Sorry again.

/Erwin

Re: newbie questions

Posted by [Neal Bridges](#) on July 12, 1999 at 16:20:52:

In Reply to: [Re: newbie questions](#) posted by Erwin on July 12, 1999 at 14:53:59:

I avoid the whole issue of accidentally deleting my resources by never using the Applications->Delete panel -- I use RsrcEdit to delete files; it never deletes more than just the file you select.

Neal

Re: newbie questions

Posted by Erwin on July 12, 1999 at 16:04:22:

In Reply to: [Re: newbie questions](#) posted by Erwin on July 12, 1999 at 14:53:59:

> Ok, so I was just too stupid to search the creator database properly. 8-(
> As for the rest, you are still in error, look at the long form from the original

> Duco example of 22Nov1998, it clearly has the CrID first in sequence 8-):

```
> DmModeReadOnly
> (ID) p4ap (ID) Duco
> DmOpenDatabaseByTypeCreator
> 2drop
```

> Look also at the stack diagram as commented for "use-resources":

```
> : use-resources
> ( creator-id. type. -- )
> OpenResDB or 0=
> abort" Resource db not found." ;

> As for my personal convention to have the same CrID for the resources and the
> final app, yes I'm well aware that this will delete the resource database
should
> I ever get so disapointed with my proceedings that I delete my work instead of
> recompiling it once more. That is intentionally.

> Sorry again.

> /Erwin
```

OK, its too hot over here to get a message completely thought through, apologies to Carl for not getting his point credited.

So my citing of the samples above is redundant, Carl explained the reversed order of the "p4ap" CrID and own CrID as type, it just didn't get through my thickness on first reading.

To explain why I use my scheme fully intentional, what happens with my scheme is to possibly loose one app related resource database if I delete the related app from the delete menu, what happens with the Neal/Carl scheme is to loose **all** resource databases if you unintentionally try to "clean" up an (one) such, that apparently is no longer needed, from the delete menu. Under the scheme I use, the resources are never independently visible in delete menu and if I delete an app under design in disgust, I have given up on it anyway and usually don't want to keep the resources.

/Erwin

Re: newbie questions

Posted by [Carl Jacobsen](#) on July 12, 1999 at 16:03:00:

In Reply to: [Re: newbie questions](#) posted by Erwin on July 12, 1999 at 14:53:59:

Okay, one more comment, and then Erwin and I can agree to disagree on this minor philosophical point about how to arrange one's resources :-)

```
> Ok, so I was just too stupid to search the creator database properly. 8-(
> As for the rest, you are still in error, look at the long form from the
> original Duco example of 22Nov1998, it clearly has the CrID first in
> sequence 8-):
>
> DmModeReadOnly
> (ID) p4ap (ID) Duco
> DmOpenDatabaseByTypeCreator
> 2drop
```

The Quartus prototype for DmOpenDatabaseByTypeCreator is:

```
DmOpenDatabaseByTypeCreator ( mode creator. type. -- DmOpenRef. )
```

(according to specific.htm), so what I see in your example above is a CRID of "p4ap" and a type of "Duco". Do you see otherwise? This would seem to simply support the concept of using "p4ap" as a CRID, and your own CRID as a type.

```
> Look also at the stack diagram as commented for "use-resources":
```

```
>  
> : use-resources ( creator-id. type. -- )  
> OpenResDB or 0=  
> abort" Resource db not found." ;
```

Yes, of course, use-resources wants the arguments in this order; the whole point of what I was saying is that one would use "p4ap" for a CRID and one's own CRID as a type, *for the purposes of the resource database only.*

We've already shown that the last argument pushed on the stack before calling use-resources is the type, and standalo.htm, from the Quartus distribution, shows the following example for compiling the Year demo:

```
(ID) p4ap (ID) Year use-resources  
...  
' go (ID) Year MakePRC Year
```

Certainly "(ID) Year" in the MakePRC call is setting the CRID for the app, while "(ID) Year" is being used as the **type** (and "(ID) p4ap" as the **CRID**) in the arguments passed to use-resources.

```
> As for my personal convention to have the same CrID for the resources and the  
> final app, yes I'm well aware that this will delete the resource database  
> should I ever get so disapointed with my proceedings that I delete my work  
> instead of recompiling it once more. That is intentionally.
```

Generally one must delete the compiled executable before regenerating a standalone executable (is this not correct?). Doing this through the applications launcher would delete the executable itself, any preferences stored under the same CRID, and the resources, were they stored with a creator id matching the executable, but would delete neither resources stored under crid "p4ap" nor any of the source code for the app. The whole point of storing things under CRID "p4ap", to my way of thinking, is to *make it difficult to accidentally delete your work.*

What I have seen of your work looks quite nicely done. I would not wish for you to delete it, either accidentally or intentionally.

```
> Sorry again.
```

Apologies from me, too, to Erwin and to all you innocent bystanders, for carrying this on much too far...

```
I'll shut up now,  
-- Carl
```

Re: newbie questions

Posted by Erwin on July 12, 1999 at 16:13:30:

In Reply to: [Re: newbie questions](#) posted by Carl Jacobsen on July 12, 1999 at 16:03:00:

> Generally one must delete the compiled executable before regenerating a
> standalone executable (is this not correct?).

Absolutely last final concluding point: not correct, you just let it re-create (re-compile), OS takes care to overwrite, thats why/how my setting works.

/Erwin

Re: newbie questions

Posted by Erwin on July 12, 1999 at 11:57:13:

In Reply to: [Re: newbie questions](#) posted by Erwin on July 12, 1999 at 11:54:21:

>
> > I got tripped up on this at first, too. You've got the arguments the
> > right way 'round, but the trick is that Neal has registered a creator id
> > of "p4ap" for use with resources for Quartus. You need to build your
> > resource database with creator id "p4ap" and use *your* creator id as
the
> > resource *type*. (Uh, if you're already doing this, then never mind
:-)

> Sorry, here you err! "p4ap" is not a registered creator ID, this string has
> nothing to do with how you set up your resources database except that Neal
uses
> it in conjunction with "rsrc" for his resources and for the kernel resource in
> compiled apps. You can call your resources database whatever you like (I for
> exapmple, call mine the same creator id the app is going to be registered
under
> and type is "rsrc"), and it was simply the wrong way round sequence of type
and
> creator id Tej presented in the code snippet above.

> /Erwin

Got focus on the wrong thread, sorry Vadim, but at least this adresses the right (yours) thread.

/Erwin

Newbie Event handler

Posted by [Tej Grover](#) on July 11, 1999 at 00:29:56:

I'm new to Forth and have been playing around with extending Erwin Schomburg's event handler from Quintominoes. I thought I'd post it for comments to see if I was approaching this right.

Is this the right approach or is there a simpler way?

Am I using ekey and ekey>char appropriatly?

How do I pass on an event after I intercept it?

Is this Forth-like enough, or should I be factoring more?

Any comments from those more experienced would be appreciated (which should be just about everyone).

```
\ NewEvent
needs events
needs case
.( NewEvent... )

516 constant CalendarKey
517 constant AddressKey
518 constant ToDoKey
519 constant MemoKey
11 constant UpKey
12 constant DownKey

273 constant SilkNumKb
272 constant SilkAlphaKb
267 constant SilkCalcKey
266 constant SilkFindKey
264 constant SilkAppKey
261 constant SilkMenuKey

1001 constant FlipButton
1002 constant LeftButton
1005 constant RightButton
1006 constant RotButton
1004 constant UpButton
1003 constant DownButton

50. 2constant timeout.

variable hard

: do-it ( --- )
event @
ekey>char true = if
Dup 10 = if abort then
```

```
emit cr
then
case
KeyDownEvent of
event >abs itemid
case
CalendarKey of
." CalendarKey " cr
1 hard !
endof
AddressKey of
." AddressKey " cr
1 hard !
endof
ToDoKey of
." ToDoKey " cr
1 hard !
endof
MemoKey of
." MemoKey " cr
1 hard !
endof
UpKey of
." UpKey " cr
1 hard !
endof
DownKey of
." DownKey " cr
1 hard !
endof
SilkFindKey of
." SilkFindKey " cr
1 hard !
endof
SilkCalcKey of
." SilkCalcKey " cr
1 hard !
endof
SilkMenuKey of
." SilkMenuKey " cr
1 hard !
endof
SilkAppKey of
." SilkAppKey " cr
1 hard !
endof
SilkAlphaKb of
." SilkAlphaKb " cr
1 hard !
endof
SilkNumKb of
." SilkNumKb " cr
```

```
1 hard !
endif
endcase
endif
PenDownEvent of
." PenDownEvent " cr drop
endif
PenUpEvent of
." PenUpEvent " cr drop
endif
PenMoveEvent of
." PenMoveEvent " cr drop
endif
endcase
;
\ Main event handling

: go ( --- )
MainFormID ShowForm
." Enter Grafitti Return char to exit"
begin
begin
timeout.
event >abs
EvtGetEvent event @ ?dup
until
do-it
hard @ 0= if HandleEvent then
0 hard !
again ;
\ Main event loop

-257 constant byeThrow

: shand ( --- )
['] go catch
\ If the application is exiting,
\ store settings:
dup byeThrow = if
noop
then
throw ;
\ "Standard" exit handler
```

Regards
Tej Grover

Re: Newbie Event handler

Posted by [Neal Bridges](#) on July 11, 1999 at 01:24:51:

In Reply to: [Newbie Event handler](#) posted by Tej Grover on July 11, 1999 at 00:29:56:

> I'm new to Forth and have been playing around with extending Erwin Schomburg's
> event handler from Quintominoes. I thought I'd post it for comments to see if
I
> was approaching this right.

> Is this the right approach or is there a simpler way?

[code snipped]

Using a CASE structure to handle a complex conditional is fine -- you might find that a different method suits a different problem, but for the purposes of experimentation it'll work.

Event handling in Quartus Forth is fortunately much simpler than your code would indicate -- I've put a simple framework below as an example.

> How do I pass on an event after I intercept it?

You shouldn't need to do this at all, unless you're doing something odd like masking-out the hardware buttons.

> Is this Forth-like enough, or should I be factoring more?

I suggest you not worry too much about factoring until you're familiar with the language -- for the moment aim to keep your definitions short and simple, and keep the number of items on the stack at any given time under four.

You don't need your

```
begin
  timeout.
  event >abs
  EvtGetEvent event @ ?dup
until
```

code at all -- just use EKEY instead. EKEY both gets and handles events, passing only those that aren't handled back to you.

Here's the example framework I mentioned above -- it doesn't display text for each event type, but report-event could certainly be fleshed-out to do that:

```
: report-event
  ." Event " . cr ;

: go
  begin
  begin
```

```
ekey ekey>char 0= while
report-event
repeat
emit
again ;
```

Neal

Re: Newbie Event handler

Posted by [Erwin Schomburg](#) on July 11, 1999 at 07:22:56:

In Reply to: [Re: Newbie Event handler](#) posted by Neal Bridges on July 11, 1999 at 01:24:51:

```
> > I'm new to Forth and have been playing around with extending Erwin
Schomburg's
> > event handler from Quintominoes. I thought I'd post it for comments to see
if
> I
> > was approaching this right.
> > Is this the right approach or is there a simpler way?
> [code snipped]
> Using a CASE structure to handle a complex conditional is fine -- you might
find
> that a different method suits a different problem, but for the purposes of
> experimentation it'll work.
> Event handling in Quartus Forth is fortunately much simpler than your code
would
> indicate -- I've put a simple framework below as an example.
> > How do I pass on an event after I intercept it?
> You shouldn't need to do this at all, unless you're doing something odd like
> masking-out the hardware buttons.
> > Is this Forth-like enough, or should I be factoring more?
> I suggest you not worry too much about factoring until you're familiar with
the
> language -- for the moment aim to keep your definitions short and simple, and
> keep the number of items on the stack at any given time under four.
> You don't need your
>
> begin
>     timeout.
```

```
> event >abs
> EvtGetEvent event @ ?dup
> until
>
> code at all -- just use EKEY instead. EKEY both gets and handles events,
> passing only those that aren't handled back to you.
> Here's the example framework I mentioned above -- it doesn't display text for
> each event type, but report-event could certainly be fleshed-out to do that:
>
> : report-event
> ." Event " . cr ;
>
>
> : go
> begin
>   begin
>     ekey ekey>char 0= while
>       report-event
>     repeat
>       emit
>   again ;
>
> Neal
```

Just a clarification, I needed to use event handling the way I did *because* I'm intercepting hardware buttons, and I do not find the least oddity in wanting to do so 8-). No need to make event handling that verbose if you do not use the buttons from your app, Neal's snippet above should serve you well then.

/Erwin

Re: Newbie Event handler

Posted by [Tej Grover](#) on July 11, 1999 at 21:26:10:

In Reply to: [Re: Newbie Event handler](#) posted by Erwin Schomburg on July 11, 1999 at 07:22:56:

Thanks,
That helps a lot. I'm beginning to see the difference in the two approaches. Now to go practice.

Regards

Tej Grover

Re: Newbie Event handler

Posted by [Tej Grover](#) on July 11, 1999 at 00:32:33:

In Reply to: [Newbie Event handler](#) posted by Tej Grover on July 11, 1999 at 00:29:56:

Whoops...

and could someone tell me how to post so that my code stays indented properly?

Regards,
Tej

Re: Newbie Event handler

Posted by [Neal Bridges](#) on July 11, 1999 at 01:07:02:

In Reply to: [Re: Newbie Event handler](#) posted by Tej Grover on July 11, 1999 at 00:32:33:

> Whoops...

> and could someone tell me how to post so that my code stays indented properly?

You can surround your code with pre and /pre html tags (in angle brackets). You lose blank lines within the code doing that, but the indenting is preserved. Also, the indenting always looks ok in the 'reply' window below the message, so not to worry, you code can still be read.

Neal

Re: Newbie Event handler

Posted by [Carl Jacobsen](#) on July 11, 1999 at 04:26:55:

In Reply to: [Re: Newbie Event handler](#) posted by Neal Bridges on July 11, 1999 at 01:07:02:

> > and could someone tell me how to post so that my code stays indented
> > properly?

> You can surround your code with pre and /pre html tags (in angle brackets).
> You lose blank lines within the code doing that, but the indenting is
> preserved.

Actually, you can get the blank lines to show up, too, simply by making them not be blank: I've found that sticking a single space character on each blank line in a

...
block makes the blank lines show up properly (not that hard to do a :%s/^\$/ / in gvim before cutting and pasting the text :-)

-- Carl

Bragging Just Bragging

Posted by [E. Ross Helton](#) on July 09, 1999 at 20:01:29:

Hi Neal;

This posting is pure bragging. My Grandma would've said, "Better be careful, bragging can get you into a mess!"

Well, Grandma I think this one is worth the chance.

On ZDNET's computer Pilot software section My Quartus Forth created program has been picked as one of the top five for the month of July 1999.

The game is Rtrek and it was created in Neal's wonderful Quartus Forth with the forms from RsrcEdit.

If you click the link below you can see it being talked about in the middle of the page. On the side in the list of games it is in the middle.

Thanks Neal! It is your brag too! HURRAY!!! RAH! RAH! and all that. There is my fifteen minutes and I'm enjoying it. Thanks to other like Erwin and my son Jesse who also have played a big part in this.

All of you take a bow and let yourself be thanked most heartily from me!!!

Make it a good day! (for it is!)

Ross

Bragging Just Bragging

Posted by [E. Ross Helton](#) on July 09, 1999 at 20:05:02:

In Reply to: [Bragging Just Bragging](#) posted by E. Ross Helton on July 09, 1999 at 20:01:29:

Hi Neal;

This posting is pure bragging. My Grandma would've said, "Better be careful, bragging can get you into a mess!"

Well, Grandma I think this one is worth the chance.

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Thanks Neal! It is your brag too! HURRAY!!! RAH! RAH! and all that. There is my fifteen minutes and I'm enjoying it. Thanks to other like Erwin and my son Jesse who also have played a big part in this.

All of you take a bow and let yourself be thanked most heartily from me!!!

Make it a good day! (for it is!)

Ross

Sorry Neal messed up the other posting

Ross

- [Rtrek on ZDNET's web software](#)

library install on unix

Posted by [Vadim Zaliva](#) on July 09, 1999 at 17:02:06:

Hi!

I am using linux on my desktop.

How could I install library with pilot-xfer package?

I've seen libtxt.zip. Do I have to install

all these files into my memo area?

Is it ok to have them into separate category, like "forthlib"?

Or maybe it is good idea to combine all of them into

one huge single memo? Please help with advice!

Also, I am having problem with "include".
I've typed "hello word" word example
in memopad but interpreter does not
find it when I am trying to include. Yes, I've restarted
interpreter, and yes, memo starts with "\ hello".

I am using Pilot V and Quartus Forth 1.2.1U build 1999.03.06 2:18:37pm

Sincerely,
Vadim

Re: library install on unix

Posted by [Neal Bridges](#) on July 09, 1999 at 18:19:33:

In Reply to: [library install on unix](#) posted by Vadim Zaliva on July 09, 1999 at 17:02:06:

> I am using linux on my desktop.
> How could I install library with pilot-xfer package?
> I've seen libtxt.zip. Do I have to install
> all these files into my memo area?

If you have access to the Palm Desktop software on a Windows machine, the simplest, fastest, and easiest way is to open the provided library.MPA file and copy the memos over. If you don't, you'll need to bring in each .txt in libtxt.zip into a separate memo on your Palm. While this takes a few minutes, the library code is very stable, and so it isn't something you'll need to repeat.

> Is it ok to have them into separate category, like "forthlib"?
> Or maybe it is good idea to combine all of them into
> one huge single memo? Please help with advice!

You can certainly place them all in a separate category if you wish; however it's not required to do so. You can't make them into one large memo for two reasons: first, memos have a 4K limit in size, and second, Quartus Forth searches for each file by name.

> Also, I am having problem with "include".
> I've typed "hello word" word example
> in memopad but interpreter does not
> find it when I am trying to include. Yes, I've restarted
> interpreter, and yes, memo starts with "\ hello".

It's important that the very first character be a backslash, with no spaces before it, and there must be only one space after it and before the 'h'. At that point,

include hello

should work fine.

> I am using Pilot V and Quartus Forth 1.2.1U build 1999.03.06 2:18:37pm

No problem with your setup -- let me know how it goes, either here or in mail; glad to help.

Neal

Re: library install on unix

Posted by [Vadim Zaliva](#) on July 09, 1999 at 18:29:16:

In Reply to: [Re: library install on unix](#) posted by Neal Bridges on July 09, 1999 at 18:19:33:

> If you have access to the Palm Desktop software on a Windows machine, the
> simplest, fastest, and easiest way is to open the provided library.MPA file
and
> copy the memos over. If you don't, you'll need to bring in each .txt in
> libtxt.zip into a separate memo on your Palm. While this takes a few minutes,
> the library code is very stable, and so it isn't something you'll need to
> repeat.

I am still having problems.

Here is what I did:

1. I've unpacked libtxt.zip
2. I've installed all files to my pilot with command:

```
install-memo -c forth /dev/pilot *.txt
```

It installed files alright. They all in my memopad now.

However they contain some weird characters, looking like small square. At least one is at the end of the first line of each file. The hex code seems to be 0xDF.

3. To test if forth could fine files, I've typed in the console window:

```
needs asm68k
```

```
and I've got:
```

```
needs asm68k Loading asm68k v1.21...
```

```
Exception in file: asm68k
```

```
#? undefined word
```

(here # denotes this small square symbol).

What I am doing wrong?

Vadim

Re: library install on unix

Posted by [Neal Bridges](#) on July 09, 1999 at 18:36:02:

In Reply to: [Re: library install on unix](#) posted by Vadim Zaliva on July 09, 1999 at 18:29:16:

> > If you have access to the Palm Desktop software on a Windows machine, the
> > simplest, fastest, and easiest way is to open the provided library.MPA file
> > and
> > copy the memos over. If you don't, you'll need to bring in each .txt in
> > libtxt.zip into a separate memo on your Palm. While this takes a few
minutes,
> > the library code is very stable, and so it isn't something you'll need to
> > repeat.

> I am still having problems.

> Here is what I did:

> 1. I've unpacked libtxt.zip

> 2. I've installed all files to my pilot with command:

> install-memo -c forth /dev/pilot *.txt

> It installed files alright. They all in my memopad now.

> However they contain some weird characters, looking

> like small square. At least one is at the end of the first line

> of each file. The hex code seems to be 0xDF.

More likely it's 0x0D. Those .txt files have both a carriage return (0x0d) and a linefeed (0x0a) at the end of each line, which is the standard for text files generated under Windows. Under Unix, line-ends are just 0x0a (linefeed), and "install-memo" isn't stripping the extra character. I can create another libtxt.zip with the 0x0d characters removed; I'll do just that for you and post it in the file area. I'll let you know when it's there.

> 3. To test if forth could fine files, I've typed in the console window:

> needs asm68k

> and I've got:

> needs asm68k Loading asm68k v1.21...

> Exception in file: asm68k

> #? undefined word

> (here # denotes this small square symbol).

> What I am doing wrong?

So far it looks like it's working fine, except for those end-of-line characters.

Neal

Re: library install on unix

Posted by [Vadim Zaliva](#) on July 09, 1999 at 18:46:25:

In Reply to: [Re: library install on unix](#) posted by Neal Bridges on July 09, 1999 at 18:36:02:

> More likely it's 0x0D. Those .txt files have both a carriage return (0x0d)

Yes, this was a problem.

I already converted files and now it works fine.

Does this forth include screen editor?

I just thought that such editor could be written in forth, and executed within interpreter. This could produce nice development/debugging env. with no need to jump to memopad all the time.

Also, since it just another forth module, it will be completely optional, and to save space, people could opt to use memopad and before.

Does this idea ever occur to anybody? If nobody works on that I could try to write something.

But if somebody more experienced in Forth willing to implement this idea and I will be just glad.

Thanks for help!

Sincerely,

Vadim

P.S. This linefeed issue on Unix perhaps should go to FAQ. I've used "unzip -a -aa libtxt.zip" command to unpack it with linefeed correction.

Re: library install on unix

Posted by [Neal Bridges](#) on July 09, 1999 at 19:01:21:

In Reply to: [Re: library install on unix](#) posted by Vadim Zaliva on July 09, 1999 at 18:46:25:

> > More likely it's 0x0D. Those .txt files have both a carriage return (0x0d)

> Yes, this was a problem.

> I already converted files and now it works fine.

Great -- for the convenience of others who may run into this, I've just put *ulibtxt.zip* in the Quartus Forth Library file area.

> Does this forth include screen editor?
> I just though that such editor could be written in
> forth, and executed within interpreter. This could
> produce nice developement/debugging env. with no
> need to jump to memopad all the time.

Check out the app at the link below -- it lets you edit memos while staying in Quartus Forth.

> P.S. This linefeed issue on Unix perhaps should go to FAQ.
> I've used "unzip -a -aa libtxt.zip" command to unpack
> it with linefeed correction.

Thanks -- you're right, I'll add it to the documentation update already underway.

Neal

- [PopUp Note!](#)

Writing Forth Code in a DOC Editor

Posted by [Phil Howlett](#) on July 09, 1999 at 00:59:52:

Hi

I'm using Q-Edit to write some fourth code instead of Memopad.

How do I run the code?

This is the output I get:

```
needs docinc ok
docneeds myfile
nim? control sctructure mismatch
```

Cheers,
Phil.

Re: Writing Forth Code in a DOC Editor

Posted by [Erwin Schomburg](#) on July 09, 1999 at 01:37:45:

In Reply to: [Writing Forth Code in a DOC Editor](#) posted by Phil Howlett on July 09, 1999 at 00:59:52:

> Hi

> I'm using Q-Edit to write some fourth code instead of Memopad.

> How do I run the code?

> This is the output I get:

> needs docinc ok

> docneeds myfile

> nim? control structure mismatch

> Cheers,

> Phil.

Well, I assume that you have a logical error in the source contained in myfile, unmatched IF-ELSE-THEN or something like that. A snippet of your code contained in myfile around the "nim" word would be more helpful for diagnosis of your problem than an output snippet that clearly states that myfile is taken on by Quartus. Another issue, in case there is no "nim" in your source, I don't know the format that Q-Edit generates, but be also aware that docinc needs the file to be either uncompressed or in fully compressed original doc format.

/Erwin

Interlog failure this morning -- please resend any mail

Posted by [Neal Bridges](#) on July 08, 1999 at 14:00:35:

Hi folks. My wonderful service provider, Interlog, went down for several solid hours this morning. I have reason to believe any mail sent to me this AM has been lost -- please resend anything from last night/this morning. Sorry for the inconvenience.

Neal

RsrcEdit Newbie

Posted by [Robb Bates](#) on July 07, 1999 at 17:13:03:

I'm a newbie to Forth. I love the simplicity about it. It's kinda like chess or GO. Very simple rules, but yet so complex.

Anyway, Is there a tutorial or some documentation on how to use Rsrcedit with Quartus Forth? Maybe I'm missing something basic here. Forgive me, I am a newbie.

Maybe some simple source code with a button or menu.

Thanks,
Robb

Re: RsrcEdit Newbie

Posted by [Neal Bridges](#) on July 07, 1999 at 17:39:00:

In Reply to: [RsrcEdit Newbie](#) posted by Robb Bates on July 07, 1999 at 17:13:03:

> I'm a newbie to Forth. I love the simplicity about it. It's kinda like chess
> or GO. Very simple rules, but yet so complex.

> Anyway, Is there a tutorial or some documentation on how to use Rsrcedit with
> Quartus Forth? Maybe I'm missing something basic here. Forgive me, I am a
> newbie.

> Maybe some simple source code with a button or menu.

There is -- look in the Quartus Forth File Area for "Tutorial-v1.02.zip".

Neal

Status Update -- version 2

Posted by [Neal Bridges](#) on July 07, 1999 at 10:37:28:

In response to the queries as to what's in version 2: there's a stronger optimization, a larger codespace, and a number of other improvements. I'm restructuring to make further expansion easy, as well as revisting all kernel code for efficiency. I'm also extending the floating-point support.

I'm open to suggestions -- if you've got a feature in mind, let me know, and I'll think about whether it's practical to include it at this stage.

Neal

Re: Status Update -- version 2

Posted by [Frank Zehner](#) on July 08, 1999 at 17:40:48:

In Reply to: [Status Update -- version 2](#) posted by Neal Bridges on July 07, 1999 at 10:37:28:

I'm thinking of register Quartus Forth. Will a update be available for users of version 1 and how much will it cost?

Re: Status Update -- version 2

Posted by [Neal Bridges](#) on July 08, 1999 at 19:47:07:

In Reply to: [Re: Status Update -- version 2](#) posted by Frank Zehner on July 08, 1999 at 17:40:48:

> I'm thinking of register Quartus Forth. Will a update be available for users of
> version 1 and how much will it cost?

Yes, and not much -- \$9.95 to upgrade to version 2. The full version 2 will be \$79.95.

Neal

Re: Status Update -- version 2

Posted by [Erwin Schomburg](#) on July 07, 1999 at 16:50:18:

In Reply to: [Status Update -- version 2](#) posted by Neal Bridges on July 07, 1999 at 10:37:28:

> In response to the queries as to what's in version 2: there's a stronger
> optimization, a larger codespace, and a number of other improvements. I'm
> restructuring to make further expansion easy, as well as revisting all kernel
> code for efficiency. I'm also extending the floating-point support.

> I'm open to suggestions -- if you've got a feature in mind, let me know, and
> I'll think about whether it's practical to include it at this stage.

> Neal

I think you already mentioned launchcode support. If not, that would be my

wish/suggestion.

/Erwin

Re: Status Update -- version 2

Posted by [Neal Bridges](#) on July 07, 1999 at 17:37:52:

In Reply to: [Re: Status Update -- version 2](#) posted by Erwin Schomburg on July 07, 1999 at 16:50:18:

> I think you already mentioned launchcode support. If not, that would be my
> wish/suggestion.

Thanks Erwin -- forgot to mention that.

Neal

Re: Status Update -- version 2

Posted by [E. Ross Helton](#) on July 07, 1999 at 10:52:12:

In Reply to: [Status Update -- version 2](#) posted by Neal Bridges on July 07, 1999 at 10:37:28:

Hi Neal;

Was going to be funny and say how about making up for the programmers' mistakes.

Then seriously thought about, will there be more error checking capabilities in V2? For instance, in some programming languages there is an error check that pops up when you don't do a complete statement or an incorrect one(during the actual input stage). The 'Safe' does a good job, but was looking for something more instant.

Probably this isn't in the scope of what can be done, but thought I would ask

Anyway, you do a good job and it will be fine whatever you get to us.

> In response to the queries as to what's in version 2: there's a stronger
> optimization, a larger codespace, and a number of other improvements. I'm
> restructuring to make further expansion easy, as well as revisiting all kernel
> code for efficiency. I'm also extending the floating-point support.

> I'm open to suggestions -- if you've got a feature in mind, let me know, and
> I'll think about whether it's practical to include it at this stage.

> Neal

make it a good day!

Ross

ActiveKey stability

Posted by [Erwin Schomburg](#) on July 07, 1999 at 02:59:26:

Not to let the impression stand that ActiveKey by Ron Doerfler is somewhat bug-ridden (see thread below) or (beware!) the result of sloppy programming, the weird interactions I experienced were a combination of other people's fancy registration schemes, localized OS idiosyncrasies and void between my ears (for not cleaning the preferences between test runs). Ron was very active to sort out all these issues and allowed me to peek at his code, so I think his version 1.3 is stable and no danger to (Memo-)data integrity (never was, for that).

An amazing observation is the Source-to-Code ratio under Quartus when an app's complexity grows, where e.g. my stuff at 9k Source (excluding lib code) goes to about 10k in the .prc, ActiveKey.prc is about 28k out of some 45k of source. This is a fine example to see how clever usage of word granularity, when using Quartus, pays back big scale.

/Erwin

Re: ActiveKey stability

Posted by [Ron Doerfler](#) on July 07, 1999 at 23:23:15:

In Reply to: [ActiveKey stability](#) posted by Erwin Schomburg on July 07, 1999 at 02:59:26:

I would also like to publicly thank Erwin for his efforts to track down the conflicts. He spent a good deal of his time communicating his findings back and forth with me, and I am very grateful--I don't know how long it would have taken me to find the source of the IrLink problem, for example.

Thanks, Erwin!

Ron

> Not to let the impression stand that ActiveKey by Ron Doerfler is somewhat
> bug-ridden (see thread below) or (beware!) the result of sloppy programming, the
> weird interactions I experienced were a combination of other people's fancy
> registration schemes, localized OS idiosyncrasies and void between my ears
> (for

> not cleaning the preferences between test runs). Ron was very active to sort out
> all these issues and allowed me to peek at his code, so I think his version 1.3
> is stable and no danger to (Memo-)data integrity (never was, for that).
> An amazing observation is the Source-to-Code ratio under Quartus when
> an app's complexity grows, where e.g. my stuff at 9k Source (excluding lib code)
> goes to about 10k in the .prc, ActiveKey.prc is about 28k out of some 45k of
> source. This is a fine example to see how clever usage of word granularity,
when
> using Quartus, pays back big scale.
> /Erwin

more Kudos

Posted by [E. Ross Helton](#) on July 08, 1999 at 13:38:21:

In Reply to: [Re: ActiveKey stability](#) posted by Ron Doerfler on July 07, 1999 at 23:23:15:

Hi;

Like Ron, I want to add my Kudos to Erwin. I have noticed he has been very helpful to different people in the discussion group here. He has personally given me some good thoughts on questions I have asked. Of course the Grand Puba is Neal, but that goes without saying.

Make it a good day!

Ross

> I would also like to publicly thank Erwin for his efforts
> to track down the conflicts. He spent a good deal of his time
> communicating his findings back and forth with me, and I
> am very grateful--I don't know how long it would have taken
> me to find the source of the IrLink problem, for example.

> Thanks, Erwin!

> Ron

Dynamic memory allocation

Posted by [Marc](#) on July 06, 1999 at 19:27:15:

I used this simple code :

```
variable buffer@  
  
: buffer buffer@ @ ;  
: buffer-init here buffer@ ! 100 cells allot ;  
  
: go  
...  
...  
buffer-init  
...  
...  
buffer s" salut" bcopy  
...  
;
```

Which works ok in QF interpreter but crash when made into a PRC. I suspect the crash is at the allot line.

Is this possible ? I am developing a small application that must read information from a memo. Thus I am copying the memo my own buffer. Problem is that the executable is big because I use the following code

```
create buffer 100 cells allot
```

instead. My idea was to spare precious memory and allocate some when the application is running only, not permanently.

Did I miss something is Palm and/or Forth and/or Quartus philosophy ?

Thanks for any advice

Re: Dynamic memory allocation

Posted by [Neal Bridges](#) on July 06, 1999 at 19:42:02:

In Reply to: [Dynamic memory allocation](#) posted by Marc on July 06, 1999 at 19:27:15:

> I used this simple code :

[snip]

> Which works ok in QF interpreter but crash when made into a PRC. I suspect
> the crash is at the allot line.

> Is this possible ? I am developing a small application that must read
> information from a memo. Thus I am copying the memo my own buffer. Problem is

> that the executable is big because I use the following code
> create buffer 100 cells allot
> instead. My idea was to spare precious memory and allocate some when the
> application is running only, not permanently.
> Did I miss something is Palm and/or Forth and/or Quartus philosophy ?
ALLOT is only for use during compile-time. Use **ALLOCATE** from the
memory library module to allocate your buffer at run-time.

Neal

Re: Dynamic memory allocation

Posted by [Carl Jacobsen](#) on July 07, 1999 at 01:57:09:

In Reply to: [Re: Dynamic memory allocation](#) posted by Neal Bridges on July 06, 1999 at 19:42:02:

> > ... My idea was to spare precious memory and allocate some when the
> > application is running only, not permanently.
>
> ALLOT is only for use during compile-time. Use **ALLOCATE** from the
> *memory* library module to allocate your buffer at run-time.
> Neal

Hi Neal,
I'd glanced through *memory* some time back and was a little puzzled,
now I'm very curious: **ALLOCATE** uses (eventually) **>rel** to
convert a 32bit Palm OS address into a 16bit Quartus address; presumably
this only works if the address in question is within Quartus's 64K chunk
of memory, yes? Does your wrapper around MemHandleNew do something to
coerce the OS into preferentially allocating space near Quartus first?
Is there something obvious I'm missing from the big picture? It seems,
on first pass, that if some sort of influence were not in force over the
system's choice of memory allocations, that this scheme for getting a
chunk of memory to access with a 16bit pointer would be bound to suffer
very high rates of random failures...

Curious,
-- Carl

Re: Dynamic memory allocation

Posted by [Neal Bridges](#) on July 07, 1999 at 09:31:10:

In Reply to: [Re: Dynamic memory allocation](#) posted by Carl Jacobsen on July 07, 1999 at 01:57:09:

> Hi Neal,
> I'd glanced through *memory* some time back and was a little puzzled,
> now I'm very curious: **ALLOCATE** uses (eventually) **>rel** to
> convert a 32bit Palm OS address into a 16bit Quartus address; presumably
> this only works if the address in question is within Quartus's 64K chunk
> of memory, yes? Does your wrapper around MemHandleNew do something to
> coerce the OS into preferentially allocating space near Quartus first?
> Is there something obvious I'm missing from the big picture? It seems,
> on first pass, that if some sort of influence were not in force over the
> system's choice of memory allocations, that this scheme for getting a
> chunk of memory to access with a 16bit pointer would be bound to suffer
> very high rates of random failures...

The PalmOS allocates dynamic RAM in the lower part of memory first; as long as your total allocations don't exceed 64K (including the application's data-space) you'll be fine. The application's code-space size doesn't affect this at all, though.

Alternatively, you can use *Mem.txt* and (**ALLOCATE**), which returns a 32-bit address.

Re: Dynamic memory allocation

Posted by [Erwin Schomburg](#) on July 07, 1999 at 03:47:39:

In Reply to: [Re: Dynamic memory allocation](#) posted by Carl Jacobsen on July 07, 1999 at 01:57:09:

> > > ... My idea was to spare precious memory and allocate some when the
> > > application is running only, not permanently.

> >
> > ALLOT is only for use during compile-time. Use **ALLOCATE** from the
> > *memory* library module to allocate your buffer at run-time.

> > Neal

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> on first pass, that if some sort of influence were not in force over the
> system's choice of memory allocations, that this scheme for getting a
> chunk of memory to access with a 16bit pointer would be bound to suffer
> very high rates of random failures...

> Curious,
> -- Carl

I dare to answer this, as my discussions with Neal led to "mem" and the current implementations of "doc" and "docinc". If you look at current "Memory", you will find that the sanity of your 16bit pointer is checked by the INRANGE? word.

If you intend to ALLOT a lot of space besides ALLOCATEing buffers, you should do all your ALLOTments first before ALLOCATEing stuff, as INRANGE? only checks at invocation of ALLOCATE, subsequent ALLOTs may move the relative pointer out of scope (segment). Else use (ALLOCATE), giving you 32bit pointers, from "mem", otherwise you will indeed be in danger to loose the correct relation to the upper 16 bits of your buffer pointer and have your application crash/trash the machine (and not just your app).

't was a compromise Neal made, between adhering to the standard, then all data pointers need to be cell size (16bit), and allow you to be on the safe side and use double cell pointers obtainable from (ALLOCATE).

/Erwin

Re: Dynamic memory allocation

Posted by [Neal Bridges](#) on July 07, 1999 at 09:33:15:

In Reply to: [Re: Dynamic memory allocation](#) posted by Erwin Schomburg on July 07, 1999 at 03:47:39:

> If you intend to ALLOT a lot of space besides ALLOCATEing buffers, you should do
> all your ALLOTments first before ALLOCATEing stuff, as INRANGE? only checks at
> invocation of ALLOCATE, subsequent ALLOTs may move the relative pointer out of
> scope (segment).

Good point, Erwin. Use ALLOT at compile-time, ALLOCATE at run-time.

Neal

Re: Dynamic memory allocation

Posted by Erwin on July 07, 1999 at 04:25:06:

In Reply to: [Re: Dynamic memory allocation](#) posted by Erwin Schomburg on July 07, 1999 at 03:47:39:

> > > > ... My idea was to spare precious memory and allocate some when the
> > > > application is running only, not permanently.

> > >

> > > ALLOT is only for use during compile-time. Use **ALLOCATE** from the
> > > *memory* library module to allocate your buffer at run-time.

> > > Neal

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> implementations of "doc" and "docinc". If you look at current "Memory", you
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> all your ALLOTments first before ALLOCATEing stuff, as INRANGE? only checks at
> invocation of ALLOCATE, subsequent ALLOTs may move the relative pointer out of
> scope (segment). Else use (ALLOCATE), giving you 32bit pointers, from "mem",
> otherwise you will indeed be in danger to loose the correct relation to the
> upper 16 bits of your buffer pointer and have your application crash/trash the
> machine (and not just your app).

> 't was a compromise Neal made, between adhering to the standard, then all data
> pointers need to be cell size (16bit), and allow you to be on the safe side
and

> use double cell pointers obtainable from (ALLOCATE).

> /Erwin

Errr, you can of course use data pointers of any flavour in your

implementations, what I was meaning is that the standard says that ALLOCATE shall return cell-sized pointers, because other related and subsequently used (standard) words may rely on this. For use of non-standard but, in the case of Quartus for Palm OS, safe(r) (ALLOCATE), you need to take care of your pointer arithmetics yourself and your source code using this is not portable without intervention.

/Erwin

RsrcEdit - Registered Version?

Posted by [Barry Ekstrand](#) on July 05, 1999 at 22:44:01:

I registered RsrcEdit going on 2 weeks ago, and haven't received anything other than the confirmation e-mail from PalmGear HQ. I'm assuming there is no registered version floating around, but wanted to make sure since I never received a note or anything from IndiVideo. Does anyone know if IndiVideo keeps up with notification of registered users for updates?

Barry Ekstrand

Re: RsrcEdit - Registered Version?

Posted by [Carl Jacobsen](#) on July 05, 1999 at 23:19:55:

In Reply to: [RsrcEdit - Registered Version?](#) posted by Barry Ekstrand on July 05, 1999 at 22:44:01:

> I registered RsrcEdit going on 2 weeks ago, and haven't received anything
> other than the confirmation e-mail from PalmGear HQ. I'm assuming there
> is no registered version floating around, but wanted to make sure since I
> never received a note or anything from IndiVideo...

I registered just under three weeks ago, with the same experience. Wasn't really expecting a registered version, since there are no nags or disabled features in the standard release of the program. I think this one is a case of sending Roger some money just because it's the right thing to do :-). I would presume that he's building a mailing list out of the registration info that PilotGear sends him, and that eventually we may get email notifications when new versions come out.

Roger's been tremendously helpful to me; I find his program indispensable, so much so that I took the time to send him a laundry list of things that I thought could be fixed or improved, and, well, darned if he didn't go fix them all, a couple weeks later... Just try to get *that* kind of response out of, say, Microsoft...

By the by, your posting prompted me to revisit his page, and wouldn't you know it, RsrcEdit v1.002 was posted today :-). Still yet more rough edges cleaned up -- way to go, Roger!

-- Carl

"new toys == happy carl"

- [RsrcEdit Home Page](#)

Re: RsrcEdit - Registered Version?

Posted by [Barry Ekstrand](#) on July 06, 1999 at 10:45:59:

In Reply to: [Re: RsrcEdit - Registered Version?](#) posted by Carl Jacobsen on July 05, 1999 at 23:19:55:

> I think this one is a case
> of sending Roger some money just because it's the right thing to do

No question that it is the right thing to do, and the warm fuzzy feeling is all I'm looking for (although a note telling me when a new version is available is always appreciated!). I did want to check because I registered at a time when Kenny was out of town and PalmGear did have some difficulties while he was away; I just wanted to verify all was as it should be. Thanks to you and Erwin both for the info.

Regards,

Barry Ekstrand

Re: RsrcEdit - Registered Version?

Posted by [Erwin Schomburg](#) on July 05, 1999 at 22:58:10:

In Reply to: [RsrcEdit - Registered Version?](#) posted by Barry Ekstrand on July 05, 1999 at 22:44:01:

> I registered RsrcEdit going on 2 weeks ago, and haven't received anything other than the confirmation e-mail from PalmGear HQ. I'm assuming there is no registered version floating around, but wanted to make sure since I never received a note or anything from IndiVideo. Does anyone know if IndiVideo keeps up with notification of registered users for updates?

> Barry Ekstrand

No, you won't get anything AFAIK, except a good feeling to have supported a tool that you find useful. And RsrcEdit is up another notch (1.002) as of yesterday.

/Erwin

Can NOT hot-sync YearRsrc.prc

Posted by [Joe Soderquist](#) on July 05, 1999 at 20:15:17:

Hello, I'm going through installing the Year application using sample tutorial, but can't get the YearRsrc.prc to hotsync. I've got a Palm III on the linux platform and using:
pilot-xfer --install YearRsrc.prc
Year.PRC loaded and ran without a flaw. I haven't had any problems in the past using pilot-xfer. I've downloaded the trial distribution a couple of times with the same results.
It goes without saying, "I'm a newbie".

Re: Can NOT hot-sync YearRsrc.prc

Posted by [Neal Bridges](#) on July 05, 1999 at 23:07:10:

In Reply to: [Can NOT hot-sync YearRsrc.prc](#) posted by Joe Soderquist on July 05, 1999 at 20:15:17:

> Hello, I'm going through installing the Year application using
> sample tutorial, but can't get the YearRsrc.prc to hotsync.
> I've got a Palm III on the linux platform and using:
> pilot-xfer --install YearRsrc.prc
> Year.PRC loaded and ran without a flaw. I haven't had any problems
> in the past using pilot-xfer. I've downloaded the trial
> distribution a couple of times with the same results.

> It goes without saying, "I'm a newbie".

What happens when you try to install it? What error message are you getting?

Neal

Re: Can NOT hot-sync YearRsrc.prc

Posted by [Joe Soderquist](#) on July 06, 1999 at 21:52:56:

In Reply to: [Re: Can NOT hot-sync YearRsrc.prc](#) posted by Neal Bridges on July 05, 1999 at 23:07:10:

> > Hello, I'm going through installing the Year application using
> > sample tutorial, but can't get the YearRsrc.prc to hotsync.

> > I've got a Palm III on the linux platform and using:
> > pilot-xfer --install YearRsrc.prc
> > Year.PRC loaded and ran without a flaw. I haven't had any problems
> > in the past using pilot-xfer. I've downloaded the trial
> > distribution a couple of times with the same results.

> > It goes without saying, "I'm a newbie".

> What happens when you try to install it? What error message are you getting?
> Neal

Neal and Erwin,

Thank you for your prompt reply. I thought I was doing something obviously stupid, but when the experts weren't sure, I tried HotSyncing it on the Win95 side of my box and it worked. The rest of the demo went as advertised.

Sorry for wasting your time. I'll figure out to get the linux side working and reply to this thread with the solution so other linux followers can use it if they have trouble.

By the way Neal, I ordered Quartus Forth yesterday and just received the registration info...can't wait to build the stand-alone PRC. I agree with the other "Wow!"'s. One fun and powerful SDK.

Re: Can NOT hot-sync YearRsrc.prc

Posted by [E. Ross Helton](#) on July 07, 1999 at 10:46:22:

In Reply to: [Re: Can NOT hot-sync YearRsrc.prc](#) posted by Joe Soderquist on July 06, 1999 at 21:52:56:

Hi Joe;

Was the hotsync from Linux to the Palm or the other way around. If it was from Linux to the Palm it didn't work, maybe it was a capital letter thing. Either all have to be or none.

> > > Hello, I'm going through installing the Year application using
> > > sample tutorial, but can't get the YearRsrc.prc to hotsync.
> > > I've got a Palm III on the linux platform and using:

Make it a good day!

Ross

Re: Can NOT hot-sync YearRsrc.prc

Posted by [Neal Bridges](#) on July 06, 1999 at 21:55:03:

In Reply to: [Re: Can NOT hot-sync YearRsrc.prc](#) posted by Joe Soderquist on July 06, 1999 at 21:52:56:

> By the way Neal, I ordered Quartus Forth yesterday and just received
> the registration info...can't wait to build the stand-alone PRC.
> I agree with the other "Wow!"'s. One fun and powerful SDK.

Good to hear!

Neal

Re: Can NOT hot-sync YearRsrc.prc

Posted by [Erwin Schomburg](#) on July 05, 1999 at 23:05:09:

In Reply to: [Can NOT hot-sync YearRsrc.prc](#) posted by Joe Soderquist on July 05, 1999 at 20:15:17:

> Hello, I'm going through installing the Year application using
> sample tutorial, but can't get the YearRsrc.prc to hotsync.
> I've got a Palm III on the linux platform and using:
> pilot-xfer --install YearRsrc.prc
> Year.PRC loaded and ran without a flaw. I haven't had any problems
> in the past using pilot-xfer. I've downloaded the trial
> distribution a couple of times with the same results.

> It goes without saying, "I'm a newbie".

A .prc needs to be explicitly told to backup (be hotsynced) by setting the backup bit. If its Quartus-generated, the backup bit should be set by default, else you need to tell your hotsync machinery to do it, but I don't know how for pilot-xfer, sorry.

/Erwin

Re: Can NOT hot-sync YearRsrc.prc

Posted by Joe Soderquist on July 10, 1999 at 03:00:22:

In Reply to: [Re: Can NOT hot-sync YearRsrc.prc](#) posted by Erwin Schomburg on July 05, 1999 at 23:05:09:

> > Hello, I'm going through installing the Year application using
> > sample tutorial, but can't get the YearRsrc.prc to hotsync.
> > I've got a Palm III on the linux platform and using:
> > pilot-xfer --install YearRsrc.prc
> > Year.PRC loaded and ran without a flaw. I haven't had any problems
> > in the past using pilot-xfer. I've downloaded the trial
> > distribution a couple of times with the same results.

> > It goes without saying, "I'm a newbie".

> A .prc needs to be explicitly told to backup (be hotsynced) by setting the
backup
> bit. If its Quartus-generated, the backup bit should be set by default, else
you
> need to tell your hotsync machinery to do it, but I don't know how for
> pilot-xfer, sorry.

> /Erwin

The following is a procedure that allowed me to run the the Year and
Duco example programs in a Linux environment using pilot-xfer. I got
the program text and libraries loaded, but had a problem loading the
resource files (YearRsrc.prc, DucoRsrc.prc).

The following shows the output of the resource file that came with
the distribution (notice the difference in the output after the
script), this worked fine syncing it in the Win95 world, but I try to
avoid it:

using the command: pilot-file -l YearRsrc.prc

```
entries
index size type id
0 0 code 1
1 8 code 0
2 144 tAIB 1000
3 102 MBAR 2000
4 114 tFRM 1001
5 129 Talt 3000
6 549 tSTR 3001
```

The following is an illustration of a script that built a
YearRsrc.prc that successfully installed the YearRsrc.prc file on my
Linux box. The syntax is different, but the change that made it work
for me is the "-r" flag to pila.

```
##### Start of Script #####
```

```
:
#@echo off
#rem Requires ASDK1a1 or later.

#rem Create Year.res and type####.bin files:
echo Running pilrc...
/usr2/apps/pilrcsrc/pilrc -r YearRsrc.res Year.rcp

#rem Create Year.asm from Year.rcp:
echo " appl \"YearResources\",'p4ap'" >YearRsrc.asm
echo " res 'WBMP',\$7ffe,\"IconBig.bmp\" >>YearRsrc.asm

cat YearRsrc.res >>YearRsrc.asm

#rem Assemble YearRsrc.asm into YearRsrc.prc:
/usr2/apps/pila/pila -r -t Year YearRsrc.asm
```

End of Script

After building a new YearRsrc.prc:

```
using the command: pilot-file -l YearRsrc.prc
entries
index size type id
0 190 WBMP 32766
1 102 MBAR 2000
2 114 tFRM 1001
3 129 Talt 3000
4 549 tSTR 3001
```

Notice there isn't any code types. I really don't know what this means. The help message to Pila is:

```
> pila -h
Pila 1.0 Beta 3 Fluff 7
```

Usage: pila [-cldrs] [-t TYPE] infile.ext

Options: -c Show full constant expansions for DC directives
-l Produce listing file (infile.lis)
-d Debugging output
-r Resources only, don't generate code or data
-s Include debugging symbols in output
-t TYPE Specify the PRC type, e.g., appl

I hope this helps.



Re: Can NOT hot-sync YearRsrc.prc

Posted by [Neal Bridges](#) on July 10, 1999 at 12:02:23:

In Reply to: [Re: Can NOT hot-sync YearRsrc.prc](#) posted by Joe Soderquist on July 10, 1999 at 03:00:22:

> The following is a procedure that allowed me to run the the Year and
> Duco example programs in a Linux environment using pilot-xfer. I got
> the program text and libraries loaded, but had a problem loading the
> resource files (YearRsrc.prc, DucoRsrc.prc).

[snipped procedure]

Joe, that's appreciated. I'll see if that method of generating the resources works for Win95 also, and if so I'll build it into the docs.

Thanks for doing the leg-work -- funny that pilot-xfer trips up on the version with code resources in it.

Neal

Status update

Posted by [Neal Bridges](#) on July 02, 1999 at 22:53:28:

Hi, folks. It's been quite for a day or so, which is odd for a weekday. Thought I'd post a status update.

I'm still working on Quartus Forth version 2, which is coming along nicely. I'm simultaneously building Quartus daVinci Forth for the Royal daVinci, to be in beta soon; one project leverages off the other.

This is also another call for websites -- I'm putting that page of links together, so if you've got one to add, shout.

Let me know how it's going out there!

Neal

Re: Status update

Posted by [Serg Koren](#) on July 03, 1999 at 09:21:09:

In Reply to: [Status update](#) posted by Neal Bridges on July 02, 1999 at 22:53:28:

> Hi, folks. It's been quite for a day or so, which is odd for a weekday.
> Thought I'd post a status update.

> I'm still working on Quartus Forth version 2, which is coming along nicely.

Any hints of what 2 will include? a major rev number change implies lots of new goodies ;-) (apart from all the optimizations you've mentioned earlier).

I've started porting my 3d graphics library to Quartus from WinCE (which I'm still developing). Right now I'm defining my own primitives for basic things like rectangles and things in 2d and the matrix math needed for 3d. One thing I've had to do is come up with a one-dimensional (to distinguish it from 1D) array to a two-dimensional one. I haven't been able to find any references to two-d arrays in ANS FORTH (but I might be looking in the wrong spots).

Once done I still would like to package the code into a shared lib or at least have the capability within Q to encrypt the source and run it encrypted.

Ch

ANS Forth 2d array code [was Re: Status update]

Posted by [Carl Jacobsen](#) on July 03, 1999 at 17:39:55:

In Reply to: [Re: Status update](#) posted by Serg Koren on July 03, 1999 at 09:21:09:

> ... One thing
> I've had to do is come up with a one-dimensional (to distinguish it from 1D)
> array to a two-dimensional one. I haven't been able to find any references to
> two-d arrays in ANS FORTH (but I might be looking in the wrong spots).

Here's a [URL](#) for a

DejaNews posting I happened across a few weeks back, with one take on just what you're looking for, if I understand correctly.

At the time, I was I was actually looking for pointers to the [Forth Scientific Library](#),

as I was seeking their array code (not for anything specific yet, just thought it would be handy to have around. If you follow the above link, and go into "The Library", it's down at the end, in the "Auxiliary code" section, under the heading "FSL auxiliary code by Skip Carter" (several files, one for each of of several Forth interpreters -- isn't this sorta odd, given that it's for a *standard* Forth? Hmm...). Anyways, I tweaked up the Gforth version to a) compile on Quartus, b) contain only the array code (the original is all the glue needed for each particular Forth), and c) look pretty on the Pilot's screen. It *compiles*, but I haven't tried using it for *anything* yet, so I don't yet know if I've screwed it up (which is why I'm not just posting it here, where any mistakes would propagate and be archived for succeeding generations :-). If you want a copy of what I've got,

drop me a line (then you can post a *tested* version); if Neal wants it to check it over and put it up on the site, well, that'd be really cool (but then, this thread started with mention of what *he's* got his hands full with right now, so I wouldn't want to slow him down).

> Ch

By the way, looks kinda like your posting got clipped off...

-- Carl-who's-also-curious-about-what-awaits-us-in-QuartusV2
(a.k.a. "Beneath the Planet of Quartus")

- [Julian V. Noble's ANS 1D/2D Array code](#)

Re: ANS Forth 2d array code [was Re: Status update]

Posted by [Serg Koren](#) on July 03, 1999 at 22:48:41:

In Reply to: [ANS Forth 2d array code \[was Re: Status update\]](#) posted by Carl Jacobsen on July 03, 1999 at 17:39:55:

Thanks for the pointer I'll take a look, although I don't really need it right now since I wrote my own. It basically takes 2 numbers and indexes into a single dimension array as if it were a two dimensional one given the height and width of the virtual two dimensional array. Nothing fancy, pretty standard code actually for things like BASIC versions with only one dimensional arrays.

> > Ch

> By the way, looks kinda like your posting got clipped off...

Nothing important, just saying "Cheers, Serg"

Cheers,
S

Re: Status update

Posted by [Bob Cunningham](#) on July 02, 1999 at 23:53:09:

In Reply to: [Status update](#) posted by Neal Bridges on July 02, 1999 at 22:53:28:

> Let me know how it's going out there!

I've been getting serious about getting Quartus to multitask/multithread! There are two routes I'm pursuing, neither of which requires Neal to modify

Quartus Forth (but that IS the third route...).

First is a cooperative multithreading package. I haven't found any in ANSI Forth, but I'm still looking. I have several for C and C++, but none look "easy" for a Forth newbie like me to port. The notion of Forth libraries and code shared between threads becomes simpler if libraries are viewed as services that run as independent immortal intercommunicating threads. Nice concept, but it leads to an explosion in the number of threads. But if I find a light, efficient thread implementation, it may be possible (but probably not - too many stacks to manage).

Second is to build independent Quartus apps that use shared memory (or any lightweight IPC), and obtain access to the multitasking AMX RTOS kernel within PalmOS. An AMX license costs \$5K, but I'm working on them to give it away for free to Palm users (electronic docs and license only - no code or support).

The first method could be fairly elegant, allowing the mechanism to be used for both interpreted and binary Quartus applications. The second method could support interpreted Forth only if the entire Quartus application were multitasked.

I'm also still looking for code to manipulate the IR port at levels below IrDA. First, I'd like to have the IR port act like a regular RS-232 port (and use whatever basic serial IR standards exist). Second, I'd like to have access to the IR receiver transistor and transmitter LED states (on/off).

Related to this is a second issue for which I'm still seeking clarification: It seems that the PalmOS 3.0/IR/2MB Upgrade Card has a second UART on it to drive the IR, while all other IR-capable Palms use the single Dragonball UART for both tasks. If this is true, then it should be possible for the upgraded Palms to support simultaneous full duplex communication on both the IR and RS-232 ports. So far I have found only hints, though I hope to find confirmation of both the hardware and software capability.

Put it all together, and what do you get? Data streaming in and out at high speed on two ports while the GUI is simultaneously interacting with the user and computations are being made and displayed. I'd say four tasks/threads would do it quite nicely. PalmOS has a native restriction of having only a single UI-capable app active at any given time, so true multi-windowing would be a bit harder (and probably useless on the Palm).

Did you ever want to see the batteries in a Palm get sucked dry in 10 minutes?

-BobC

Re: Status update

Posted by [Neal Bridges](#) on July 03, 1999 at 08:04:16:

In Reply to: [Re: Status update](#) posted by Bob Cunningham on July 02, 1999 at 23:53:09:

>Second is to build independent Quartus apps that use shared memory (or any
>lightweight IPC), and obtain access to the multitasking AMX RTOS kernel within
>PalmOS. An AMX license costs \$5K, but I'm working on them to give it away for
>free to Palm users (electronic docs and license only - no code or support).

My understanding is that the ROM is compiled to support only as many AMX RTOS
tasks as the Palm OS itself needs, with no spares to be used by the user.

> I'm also still looking for code to manipulate the IR port at levels below
> IrDA. First, I'd like to have the IR port act like a regular RS-232 port (and
> use whatever basic serial IR standards exist). Second, I'd like to have
access
> to the IR receiver transistor and transmitter LED states (on/off).

The transmit/receive can be controlled directly through the processor registers.
Also, you can send RS-232 straight through the port very simply, as it's
attached directly to the UART. Search pilot.programmer -- if nothing shows let
me know, I've got some code kicking around to open the IR port that way.

> Related to this is a second issue for which I'm still seeking clarification:
> It seems that the PalmOS 3.0/IR/2MB Upgrade Card has a second UART on it to
> drive the IR, while all other IR-capable Palms use the single Dragonball UART
> for both tasks. If this is true, then it should be possible for the upgraded
> Palms to support simultaneous full duplex communication on both the IR and RS-
> 232 ports. So far I have found only hints, though I hope to find confirmation
> of both the hardware and software capability.

I've heard about the dual UARTs as well. The Palm OS treats the two like one
device; you'd need to work them directly from your own code to get any sort of
duplexing happening.

Neal

Re: Status update

Posted by [Bob Cunningham](#) on July 04, 1999 at 08:25:45:

In Reply to: [Re: Status update](#) posted by Neal Bridges on July 03, 1999 at
08:04:16:

> My understanding is that the ROM is compiled to support only as many AMX RTOS
> tasks as the Palm OS itself needs, with no spares to be used by the user.

Yes! But if you load the PalmOS IR Enhancements, it includes a new AMX that

adds at least one more process slot. If I'm not using the high-level IR, then I should be able to kill the IR enhancement task (if it is running) and substitute my own for it. I can restart the IR task by resetting the Palm (if I'm lazy) or programmatically (if I figure out how).

> The transmit/receive can be controlled directly through the processor registers.

> Also, you can send RS-232 straight through the port very simply, as it's attached directly to the UART. Search pilot.programmer -- if nothing shows let

> me know, I've got some code kicking around to open the IR port that way.

From what I've learned so far, most RS-232 to IR converters don't use a 100% duty cycle for each on bit, and often not for each off bit either. The most common (so far) is 3/16 on time for each 1 bit. Other schemes split each RS-232 bit into a static one bit and a varying data bit, so a 9600 baud data rate would be a 19200 IR bit rate. This seems to do little more than undo the NRZ of RS-232, and allow the receiver to be completely edge driven.

And yes, any code you have will be a great help!

> I've heard about the dual UARTs as well. The Palm OS treats the two like one device; you'd need to work them directly from your own code to get any sort of

> duplexing happening.

The software doesn't know if it has an upgrade board or not until well into the boot process, and applications don't know if they will be running with one either. So the OS must contain code for both cases, but hides it from the user API.

The Dragonball has one UART on it, and the PalmOS hardware header files do contain a description of the 68681 DUART. HotSync is hardwired to the Dragonball UART on all Palm versions. But do the newer Palms also contain a 68681, like the Upgrade board does?

I'm still trying to get it straightened out. I'd also like to use the AMX/PalmOS support for buffered serial I/O, so I won't have to write my own serial drivers on top of everything else (I don't mind doing setup and teardown myself). I just hope the buffered I/O code will work with more than one UART active at a time. If it is part of AMX, I suspect all will be well. If it is part of PalmOS, maybe not.

-BobC

Timer problem

Posted by [Jim Deakin](#) on June 30, 1999 at 10:35:06:

I've run into a funny. I was trying to make a pacemaker word so I tried out the ms and beep words. I used

```
needs facility
: pace begin
beep
200 ms
key?
until
;
```

which worked ok, then I tried other values for the ms call. Both 300 and 400 worked ok on my PPPro, but the values 338 and 339 makes it stop altogether, and needs the paperclip to cure it. I recall you saying that the timer works in 10ms increments, but it's a bit drastic if it crashes when its parameters aren't exact. Is that how it is?

Jim

Re: Timer problem

Posted by [Neal Bridges](#) on June 30, 1999 at 11:06:12:

In Reply to: [Timer problem](#) posted by Jim Deakin on June 30, 1999 at 10:35:06:

```
> I've run into a funny. I was trying to make a pacemaker word so I tried
> out the ms and beep words. I used
> needs facility
> : pace begin
> beep
> 200 ms
> key?
> until
> ;
```

```
> which worked ok, then I tried other values for the ms call. Both 300 and 400
> worked ok on my PPPro, but the values 338 and 339 makes it stop altogether,
> and needs the paperclip to cure it. I recall you saying that the timer works
> in 10ms increments, but it's a bit drastic if it crashes when its parameters
> aren't exact. Is that how it is?
```

I'll check. I've never passed anything but an even number to SysTaskDelay -- it should handle it fine. Curious. I'll let you know; thanks for the heads-up.

Neal

Re: Timer problem

Posted by [Neal Bridges](#) on June 30, 1999 at 11:45:39:

In Reply to: [Re: Timer problem](#) posted by Neal Bridges on June 30, 1999 at 11:06:12:

```
> > I've run into a funny. I was trying to make a pacemaker word so I tried
> > out the ms and beep words. I used
> > needs facility
> > : pace begin
> > beep
> > 200 ms
> > key?
> > until
> > ;
```

```
> > which worked ok, then I tried other values for the ms call. Both 300 and 400
> > worked ok on my PPPro, but the values 338 and 339 makes it stop altogether,
> > and needs the paperclip to cure it. I recall you saying that the timer works
> > in 10ms increments, but it's a bit drastic if it crashes when its parameters
> > aren't exact. Is that how it is?
```

```
> I'll check. I've never passed anything but an even number to SysTaskDelay --
it
> should handle it fine. Curious. I'll let you know; thanks for the heads-up.
```

Found it -- there's a bug in MS for values that are not even multiples of 10. Here's a fix:

```
: MS 10 / 0 SysTaskDelay drop ;
```

Neal

Today's hint :-)

Posted by [Carl Jacobsen](#) on June 30, 1999 at 02:48:07:

Using a smattering of `.S` throughout your code to figure out where something is going wrong works really well, but don't try it inside of `<# ... #>`, because it will really mess with your mind, and then you'll kick yourself repeatedly once you figure out that you fixed the original problem half an hour ago, and everything would work just fine now if you stopped trying so hard to fix code that is no longer broken...

Not that I have any *personal* experience with this, mind you... :-)

But, Quartus is really cool! You can program on the couch, you can program while soaking in the tub, you can program while walking in from the parking

lot to the office, you can program... well, you get the idea :-)

'night, folks,

-- Carl

The truth about tables

Posted by [Trevor Steele](#) on June 29, 1999 at 16:56:12:

Having enquired some time ago about the mysteries of tables in the Palm OS I received some sound advice from Ron Doerfler (thanks Ron) which led me to an excellent tutorial on tables by Andrew Howlett at

http://www.iosphere.net/~howlett/pilot/GNU_Pilot.html

Although written for C programmers the advice is applicable to Forth users. I have also discovered some further information possibly useful to those who may be having trouble with tables.

When following the above tutorial and setting the rows and columns to usable make sure the truth flag is properly formed. Mine wasn't and led to my initial problems with the table not displaying. I know Neal I should have read the manual :-).

Secondly make sure that the row heights are set within the application. I ended up with some silly figures as default row heights leading to some strange looking tables :-).

Lastly the table rows seem to need to be set selectable if ekey is to transmit a tblSelectEvent or a tblEnterEvent.

I have now reached the stage of having my tables in my application displayed and am now so convinced that forth is the way forward on the Palm system I have since registered my copy of Quartus. However there are still a few problems to solve.

I have been trying to set up a TblSetCustomDrawProcedure for my tables and I am having problems getting the drawing procedure to be picked up by the above API. In the absence of any other info I had set up a word defining the drawing procedure (called DrawCell) and tried to pass it to the above API using ['] DrawCell xt>abs. It doesn't seem to work so if anyone can advise me on the correct I would be most grateful.

Thanks in anticipation.

Trevor

Re: The truth about tables

Posted by [Neal Bridges](#) on June 29, 1999 at 20:25:22:

In Reply to: [The truth about tables](#) posted by Trevor Steele on June 29, 1999 at 16:56:12:

> I have now reached the stage of having my tables in my application displayed
> and am now so convinced that forth is the way forward on the Palm system I
have
> since registered my copy of Quartus.

Much appreciated, thanks! :)

> However there are still a few problems to
> solve.

> I have been trying to set up a TblSetCustomDrawProcedure for my tables and I
am
> having problems getting the drawing procedure to be picked up by the above
API.
> In the absence of any other info I had set up a word defining the drawing
> procedure (called DrawCell) and tried to pass it to the above API using ['
> DrawCell xt>abs. It doesn't seem to work so if anyone can advise me on the
> correct I would be most grateful.

I don't have any table code that uses TblSetCustomDrawProcedure -- a
whittled-down code segment showing the problem would help.

Neal

Re: The truth about tables

Posted by [Trevor Steele](#) on June 30, 1999 at 05:17:27:

In Reply to: [Re: The truth about tables](#) posted by Neal Bridges on June 29, 1999
at 20:25:22:

> > I have now reached the stage of having my tables in my application
displayed
> > and am now so convinced that forth is the way forward on the Palm system I
> have
> > since registered my copy of Quartus.

> Much appreciated, thanks! :)

> > However there are still a few problems to
> > solve.

> > I have been trying to set up a TblSetCustomDrawProcedure for my tables and
I

```
> am
> > having problems getting the drawing procedure to be picked up by the above
> API.
> > In the absence of any other info I had set up a word defining the drawing
> > procedure ( called DrawCell ) and tried to pass it to the above API using
['']
> > DrawCell xt>abs. It doesn't seem to work so if anyone can advise me on the
> > correct I would be most grateful.

> I don't have any table code that uses TblSetCustomDrawProcedure -- a
> whittled-down code segment showing the problem would help.

> Neal
```

Thanks for the incredibly fast response. I have set out below the test code which refuses to work. I am trying to produce a table which the user will be able to edit values in. If I set the tblItemStyle to numeric I can print out the stored tblItemInt but cannot edit it. If I set it to text item I can edit it but can't seem to print out stored values. That's why I was thinking of setting up a custom draw procedure to give me more freedom.

My code makes some broad assumptions which I have documented as they may be entirely incorrect! Any suggestions would be most welcome.

```
\ tsttable 99.06.25 16:55 TS
\ test code to try out palm
\ table resources.
```

```
needs resources
needs Forms
needs events
```

```
(ID) p4ap (ID) TRSS use-resources
```

```
1000 constant platform
1001 constant elevform
```

```
variable col
variable row
variable cellbounds
variable ptbl
```

```
: drawcell ( &bounds. col row &table. -- )
\ test cell draw procedure to draw an "a" in
\ each cell. This is based on the prototype
\ suggested in the palm SDK documentation. I
\ am assuming that the various arguments will
\ be passed to this routine on the stack.
```

```
>rel ptbl ! row ! col !
>rel cellbounds !
cellbounds cell+ @ @
cellbounds @ @
s" a" swap >abs windrawchars ;
```

```
: ptbl1 ( -- ptr. )
7000 GetObjectPtr ;
```

```
: show-table ( -- )
elevform ShowForm
10 0 do
1 >byte 0 i ptbl1 TblSetItemStyle
1 >byte 1 i ptbl1 TblSetItemStyle
1 >byte 2 i ptbl1 TblSetItemStyle
1 >byte 3 i ptbl1 TblSetItemStyle
12 i ptbl1 TblSetRowHeight
true i ptbl1 TblSetRowUsable
true i ptbl1 TblSetRowSelectable
i ptbl1 TblMarkRowInvalid
loop
4 0 do
\ The next line attampts to define the
\ Custom draw procedure.
['] drawcell xt>abs i ptbl1
TblSetCustomDrawProcedure
true i ptbl1 TblSetColumnUsable
loop
FrmGetActiveForm
\ Program seems to crash when it trys the
\ FrmDrawForm in the next line. I think it's
\ going somewhere in memory that it's not
\ supposed to.
FrmDrawForm ;

: go ( -- )
page show-table
\ table has 10 rows and 4 columns
begin
ekey drop
again ;
```

Many thanks

Trevor

Floating point: NaN?

Posted by [Carl Jacobsen](#) on June 28, 1999 at 18:54:36:

I am unfamiliar with the Motorola Fast Floating Point (FFP) format that Quartus uses, beyond what is discussed on the floats.htm manual page; does the format offer support for NaN?

I've got a need to store an indication of whether or not a float has been initialized yet, and I can represent this with either a particular value in the float, or a separate true/false cell. At the moment, I'm using an arbitrary negative value in the float, which works fine because

my program doesn't need negative numbers :-), but it would make the code a lot more general if I could use NaN or some other such "impossible" number.

Ideas?
-- Carl

Re: Floating point: NaN?

Posted by [Neal Bridges](#) on June 28, 1999 at 21:24:06:

In Reply to: [Floating point: NaN?](#) posted by Carl Jacobsen on June 28, 1999 at 18:54:36:

> I am unfamiliar with the Motorola Fast Floating Point (FFP) format that
> Quartus uses, beyond what is discussed on the floats.htm manual page;
> does the format offer support for NaN?

> I've got a need to store an indication of whether or not a float has
> been initialized yet, and I can represent this with either a particular
> value in the float, or a separate true/false cell. At the moment, I'm
> using an arbitrary negative value in the float, which works fine because
> my program doesn't need negative numbers :-), but it would make the code
> a lot more general if I could use NaN or some other such "impossible"
> number.

>
> Ideas?

Negative zero should do the trick. Let me know if you need the specific bit-pattern -- should be easy to figure out from the manual.

Neal

Re: Floating point: NaN?

Posted by [Carl Jacobsen](#) on June 29, 1999 at 22:58:32:

In Reply to: [Re: Floating point: NaN?](#) posted by Neal Bridges on June 28, 1999 at 21:24:06:

> Negative zero should do the trick. Let me know if you need the specific
> bit-pattern -- should be easy to figure out from the manual.

Thanks Neal, that works great! I was concerned that F= might do something other than just a bit-for-bit comparison (which could lead to astonishing results), so I built a word for testing against the impossible value, which fiddles with things to get the float onto the data stack, where D= really

should be just a 32-bit compare:

```
\ Provides:
\   FCONSTANT NoF  ( "no float" )
\ and
\   =NoF ( -- flag ) ( F: r -- )

FVARIABLE NoFtmp
  \ used to build NoF and by NoF=

0 NoFtmp ! 128 NoFtmp CELL+ !
  \ Puts "-0E" in NoFtmp. Trust me.

NoFtmp F@ FCONSTANT NoF
  \ NoF (No Float), like NaN
NoFtmp 2@ 2CONSTANT NoFd
  \ copy of NoF that goes on data
  \ stack rather than float stack

: =NoF ( -- flag ) ( F: r -- )
  NoFtmp DUP F! 2@ NoFd D= ;
```

Thanks again,
-- Carl

Re: Floating point: NaN?

Posted by [Neal Bridges](#) on June 29, 1999 at 23:10:20:

In Reply to: [Re: Floating point: NaN?](#) posted by Carl Jacobsen on June 29, 1999 at 22:58:32:

> > Negative zero should do the trick. Let me know if you need the specific
> > bit-pattern -- should be easy to figure out from the manual.

> Thanks Neal, that works great!

Glad to hear it!

Neal

Serial Manager help

Posted by [AndrewJ](#) on June 28, 1999 at 11:53:53:

I've been playing with the functions in `serial.txt` and am yet to get my Palm V to successfully talk bidirectionally to HyperTerminal on my PC. I can send strings fine from the Palm to PC but how do I receive strings? The calls are clearly different from the C API but can anyone provide a snippet that shows how to, say, print a string on the Palm that I typed on the PC?

A.

Re: Serial Manager help

Posted by [Neal Bridges](#) on June 28, 1999 at 12:38:12:

In Reply to: [Serial Manager help](#) posted by AndrewJ on June 28, 1999 at 11:53:53:

> I've been playing with the functions in `serial.txt` and am yet to get my Palm V
> to successfully talk bidirectionally to HyperTerminal on my PC. I can send
> strings fine from the Palm to PC but how do I receive strings? The calls are
> clearly different from the C API but can anyone provide a snippet that shows
how
> to, say, print a string on the Palm that I typed on the PC?

From `serial.txt`, use `SerSetRecvBuff` to establish your receive buffer, and `SerRecvCheck` to see if any data has come in.

If you need a code example, let me know.

Neal

Re: Serial Manager help

Posted by [AndrewJ](#) on June 28, 1999 at 15:26:37:

In Reply to: [Re: Serial Manager help](#) posted by Neal Bridges on June 28, 1999 at 12:38:12:

> > I've been playing with the functions in `serial.txt` and am yet to get my Palm V
> > to successfully talk bidirectionally to HyperTerminal on my PC. I can send
> > strings fine from the Palm to PC but how do I receive strings? The calls
are
> > clearly different from the C API but can anyone provide a snippet that shows

> how
> > to, say, print a string on the Palm that I typed on the PC?
> From *serial.txt*, use `SerSetRecvBuff` to establish your
> receive buffer, and `SerRecvCheck` to see if any data has come in.
> If you need a code example, let me know.

Hmm. OK, I do the following sort of thing (and you'll have to bear with me because I'm still a Forth newbie)...

```
64 constant BUFSIZE
create rxbuf BUFSIZE chars allot
InitSerLib drop \ forget about handling errors for now
rxbuf BUFSIZE serSetRecvBuff drop
9600 0 serOpen drop
```

Now I type a string "abc" on the PC and then on the Palm...

```
serRecvCheck .s \ returns <3> 3 0 0 (as expected)
2drop rxbuf swap type
```

and I get three zero bytes. What am I missing? Where's my data?

If you do have a well-written code fragment for serial I/O I'd appreciate it, especially showing error handling for the serial functions.

A.

Re: Serial Manager help

Posted by [Neal Bridges](#) on June 28, 1999 at 16:01:46:

In Reply to: [Re: Serial Manager help](#) posted by AndrewJ on June 28, 1999 at 15:26:37:

> Hmm. OK, I do the following sort of thing (and you'll have to bear with me
> because I'm still a Forth newbie)...

>

```
> 64 constant BUFSIZE
> create rxbuf BUFSIZE chars allot
> InitSerLib drop \ forget about handling errors for now
> rxbuf BUFSIZE serSetRecvBuff drop
> 9600 0 serOpen drop
>
```

> Now I type a string "abc" on the PC and then on the Palm...

>

```
> serRecvCheck .s \ returns <3> 3 0 0 (as expected)
> 2drop rxbuf swap type
>
```

> and I get three zero bytes. What am I missing? Where's my data?

I have found I need to expressly set the baud-rate via SerSetSettings, like this:

```
9600. SerOpen .s
SerSettings: mysettings
mysettings SerGetSettings .s
9600. mysettings SerSet.baud 2!
mysettings SerSetSettings .s
```

Also, you do need to call SerClearErr should an error occur. I call it each time I call SerRecvCheck. I recall that in the Palm OS, serial errors prevent further data from being received, unless the error is first cleared. Make sure your parity and stop-bit settings are correct on both ends.

Neal

Re: Serial Manager help

Posted by [AndrewJ](#) on June 30, 1999 at 17:01:59:

In Reply to: [Re: Serial Manager help](#) posted by Neal Bridges on June 28, 1999 at 16:01:46:

```
> I have found I need to expressly set the baud-rate via SerSetSettings, like
> this:
```

>

```
> 9600. SerOpen .s
> SerSettings: mysettings
> mysettings SerGetSettings .s
> 9600. mysettings SerSet.baud 2!
> mysettings SerSetSettings .s
>
```

```
> Also, you do need to call SerClearErr should an error occur. I call it each
> time I call SerRecvCheck. I recall that in the Palm OS, serial errors prevent
> further data from being received, unless the error is first cleared. Make
sure
> your parity and stop-bit settings are correct on both ends.
```

Hmm, I tried this but still get no decent response. *serRecvCheck* tells me I have the right number of characters but I still can't find them. Has someone got a fragment of code that shows this working? Someone must have tried this. This is driving me nuts.

A.

Re: Serial Manager help

Posted by [Neal Bridges](#) on June 30, 1999 at 19:39:50:

In Reply to: [Re: Serial Manager help](#) posted by AndrewJ on June 30, 1999 at 17:01:59:

> Hmm, I tried this but still get no decent response. *serRecvCheck*
> tells
> me I have the right number of characters but I still can't find them. Has
> someone got a fragment of code that shows this working? Someone must have
> tried
> this. This is driving me nuts.

I took a look at your earlier code -- you're doing a *SerRecvBuff* before you do
your *SerOpen*. Do it after instead.

Neal

Re: Serial Manager help

Posted by [Steve Hanel](#) on July 14, 1999 at 17:36:32:

In Reply to: [Re: Serial Manager help](#) posted by Neal Bridges on June 30, 1999 at 19:39:50:

> > Hmm, I tried this but still get no decent response. *serRecvCheck*
> > tells
> > me I have the right number of characters but I still can't find them. Has
> > someone got a fragment of code that shows this working? Someone must have
> > tried
> > this. This is driving me nuts.

> I took a look at your earlier code -- you're doing a *SerRecvBuff* before you do
> your *SerOpen*. Do it after instead.

> Neal

Greetings,

I figured that I would try to see if I could get this working, but I am seeing
the same thing. I am using a Palm III if that makes any difference.

I made all the mods you suggested, but still see zeroes in the buffer yet the
count is correct.

Anyone else having problems with this? I notice that there is a warning in serial.txt saying 'warning: bug in OS 2.0' just before the definition of serSetRecvWaitA. Does this mean Palm III too?

Steve

Re: Serial Manager help

Posted by [Neal Bridges](#) on July 14, 1999 at 18:01:41:

In Reply to: [Re: Serial Manager help](#) posted by Steve Hanel on July 14, 1999 at 17:36:32:

> > > Hmm, I tried this but still get no decent response. *serRecvCheck*
> > tells
> > > me I have the right number of characters but I still can't find them. Has
> > > someone got a fragment of code that shows this working? Someone must have
> > tried
> > > this. This is driving me nuts.

> > I took a look at your earlier code -- you're doing a SerRecvBuff before you
> > do
> > your SerOpen. Do it after instead.

> I figured that I would try to see if I could get this working, but I am seeing
> the same thing. I am using a Palm III if that makes any difference.

Hi Steve -- wondered where you'd gone. I've never tried to use SerRecvWaitA. Here's a routine from my files -- I apologize for the state of the code, but it should illustrate the structure:

```
\ term

needs serial

: test-send s" Hello" SerSend ;

create buf 128 allot
variable obuf

: terminal
  0. set-timeout
  begin
    buf 128 SerSetRecvBuff
    SerRecvCheck drop 2dup or if
      buf nip swap type
    else 2drop then
    SerClearErr
  0. (ekey) ?dup if ekey>char
    if
```

```
        obuf c! obuf 1 SerSend drop
    else drop
    then
then
again ;
```

```
initserlib .s
9600. seropen .s
```

```
sersettings: mysettings
temp sergetsettings .s
```

```
9600. mysettings serset.baud 2!
temp sersetsettings .s
```

```
test-send
.( Starting terminal now) cr
terminal
```

```
serclose .s
```

With the above routine, I can interact with a terminal program on the PC using the Palm III in its cradle. The code is far from optimized, just something I threw together to see it work.

As you can see, after establishing the receive buffer with SerSetRecvBuff, I do a SerRecvCheck to see if any data has arrived from the PC, and if so I display it. Likewise, I check to see if a Graffiti character is available, and if one is, I send it out the serial port. The call to SerClearErr ensures the error flag is always reset -- a proper implementation would only call this when required.

Let me know if you need me to shed any further light on the code -- it's just a sketch, but it does work and hopefully can get you over the early hurdles.

Neal

Re: Serial Manager help

Posted by [Vadim Zaliva](#) on July 15, 1999 at 17:16:40:

In Reply to: [Re: Serial Manager help](#) posted by Neal Bridges on July 14, 1999 at 18:01:41:

```
> Hi Steve -- wondered where you'd gone. I've never tried to use SerRecvWaitA.
> Here's a routine from my files -- I apologize for the state of the code, but >
> it
> should illustrate the structure:
>
>
\ term
```

```

>
> needs serial
>
> : test-send s" Hello" SerSend ;
>
> create buf 128 allot
> variable obuf
>
> : terminal
>   0. set-timeout
>   begin
>     buf 128 SerSetRecvBuff
>     SerRecvCheck drop 2dup or if
>       buf nip swap type
>     else 2drop then
>       SerClearErr
>     0. (ekey) ?dup if ekey>char
>       if
>         obuf c! obuf 1 SerSend drop
>       else drop
>     then
>   then
> again ;
>
> initserlib .s
> 9600. seropen .s
>
> sersettings: mysettings
> temp sergetsettings .s
>
> 9600. mysettings serset.baud 2!
> temp sersetsettings .s
>
> test-send
> .( Starting terminal now) cr
> terminal
>
> serclose .s
>

```

> With the above routine, I can interact with a terminal program on the PC using
 > the Palm III in its cradle. The code is far from optimized, just something I
 > threw together to see it work.

I've tried this code.

It does not compile because 'temp' is undefined.

I think it should be replaced with 'mysettings'.

After such replacement it crash my pilot after started.

Vadim

Re: Serial Manager help -- bug in serial.txt

Posted by [Neal Bridges](#) on July 15, 1999 at 18:20:19:

In Reply to: [Re: Serial Manager help](#) posted by Vadim Zaliva on July 15, 1999 at 17:16:40:

Hi -- found a bug in *serial.txt*. Change **serSetRecvBuffA** so it looks like this:

```
: serSetRecvBuffA
( &addr. len. -- err )
  swap 2swap 43025 serSysTrap4n ;
```

The length of the receive buffer was previously being passed as a double-cell integer, which wasn't right -- only the high-cell was being used, and it was always zero, resulting in a buffer length of zero. The 'swap' puts the low cell first, while still leaving four cells for **serSysTrap4n** to clean up after the call.

Another point about your code -- you should either move your **serSetRecvBuff** call up above your **BEGIN** loop, or discard the result it returns; otherwise your stack will quickly overflow as the loop runs. Moving it above the loop is recommended; it only needs to be run once.

Neal

Re: Serial Manager help -- bug in serial.txt

Posted by [Vadim Zaliva](#) on July 15, 1999 at 21:13:58:

In Reply to: [Re: Serial Manager help -- bug in serial.txt](#) posted by Neal Bridges on July 15, 1999 at 18:20:19:

> Hi -- found a bug in *serial.txt*. Change **serSetRecvBuffA** so it
> looks like this:

>

```
> : serSetRecvBuffA
> ( &addr. len. -- err )
>   swap 2swap 43025 serSysTrap4n ;
>
```

> The length of the receive buffer was previously being passed as a double-cell
> integer, which wasn't right -- only the high-cell was being used, and it was
> always zero, resulting in a buffer length of zero. The 'swap' puts the low

```
cell
> first, while still leaving four cells for serSysTrap4n to clean up
after
> the call.

it helped. Now it works fine now.

> Another point about your code -- you should either move your
> serSetRecvBuff call up above your BEGIN loop, or discard the
> result it returns; otherwise your stack will quickly overflow as the loop
runs.
> Moving it above the loop is recommended; it only needs to be run once.
```

It was stolen from your 'terminal' example.
I was also unsure about it.

Anyway, now everything works great.
Thanks for help!

Vadim

Re: Serial Manager help -- bug in serial.txt

Posted by [Vadim Zaliva](#) on July 16, 1999 at 17:28:29:

In Reply to: [Re: Serial Manager help -- bug in serial.txt](#) posted by Vadim Zaliva
on July 15, 1999 at 21:13:58:

I put small utility I wrote to
ftp link at the end of this message (2 .txt files).
It dumps all incoming bytes from serial
port to screen as hex dump.

Tap screen to exit.
Type any char to reset offset counter.

Hope it will be helpful to somebody.
Also this is my first code in quartus forth
and I will be glad to hear remarks
of more experience forth programmers, if anything
wrong with it.

Sincerely,
Vadim

Re: Serial Manager help -- bug in serial.txt

Posted by [Vadim Zaliva](#) on July 16, 1999 at 17:30:06:

In Reply to: [Re: Serial Manager help -- bug in serial.txt](#) posted by Vadim Zaliva on July 16, 1999 at 17:28:29:

Oops, forgot URL:

`ftp://ftp.crocodile.org/pub/pilot/forth/`

Vadim

Re: Serial Manager help -- bug in serial.txt

Posted by [Steve Hanel](#) on July 21, 1999 at 18:50:46:

In Reply to: [Re: Serial Manager help -- bug in serial.txt](#) posted by Vadim Zaliva on July 16, 1999 at 17:30:06:

Vadim,

I finally got around to looking at your code. Good work. It solved a lot of the problems that I was having.

I even found a problem in serial.txt! I started playing around with serRecvWait and found out that the refNum should be 43022 (instead of 43023). I'll send a note directly to Neal.

Steve Hanel

> Oops, forgot URL:

> `ftp://ftp.crocodile.org/pub/pilot/forth/`

> Vadim

Re: Serial Manager help

Posted by [Neal Bridges](#) on July 15, 1999 at 17:27:41:

In Reply to: [Re: Serial Manager help](#) posted by Vadim Zaliva on July 15, 1999 at 17:16:40:

> > Hi Steve -- wondered where you'd gone. I've never tried to use SerRecvWaitA.

> > Here's a routine from my files -- I apologize for the state of the code, but
>
> it
> > should illustrate the structure:

[code snipped]

> I've tried this code.
> It does not compile because 'temp' is undefined.
> I think it should be replaced with 'mysettings'.
> After such replacement it crash my pilot after started.

Sorry 'bout that, thought my last-minute cleanup was OK. I just got your code in the mail, I'll run it and see where the problem lies.

Neal

Re: Serial Manager help

Posted by [Neal Bridges](#) on July 14, 1999 at 18:05:35:

In Reply to: [Re: Serial Manager help](#) posted by Neal Bridges on July 14, 1999 at 18:01:41:

> Here's a routine from my files --

By the way if you're adventuresome enough to actually run the code I provided in the previous message, bear in mind that it never gets down to the 'serclose' line, and so if you abort or exit Quartus Forth the serial port will still be hanging open draining your batteries. A proper implementation will watch for application exit and close the serial port; remember while of playing around with the code I provided to be sure and do a soft-reset afterwards, to close the port.

Neal

Re: Serial Manager help

Posted by [Steve Hanel](#) on July 14, 1999 at 18:48:20:

In Reply to: [Re: Serial Manager help](#) posted by Neal Bridges on July 14, 1999 at 18:05:35:

> > Here's a routine from my files --

> By the way if you're adventuresome enough to actually run the code I provided in
> the previous message, bear in mind that it never gets down to the 'serclose'

> line, and so if you abort or exit Quartus Forth the serial port will still be
> hanging open draining your batteries. A proper implementation will watch for
> application exit and close the serial port; remember while of playing around
> with the code I provided to be sure and do a soft-reset afterwards, to close
the
> port.

> Neal

Neal,

Thanks for the code, I'll take a good look at it.

By the way, I am not the guy that started this thread, but it intrigued me
enough to give it a try.

Forth is kinda funny. I used it a lot during the Z80 days, then thought that
I would never use it again. Threw away all my books. Then I got a Palm.

Steve

Got a Quartus Forth apps page? Send me your link.

Posted by [Neal Bridges](#) on June 26, 1999 at 22:14:02:

I'm building a page of links to your Quartus Forth apps -- if you've got a
Quartus Forth page or apps written with it, send along the links and I'll put'em
in.

Neal

Re: Got a Quartus Forth apps page? Send me your link.

Posted by [Barry Ekstrand](#) on June 28, 1999 at 00:41:56:

In Reply to: [Got a Quartus Forth apps page? Send me your link.](#) posted by Neal
Bridges on June 26, 1999 at 22:14:02:

Here is a link to the LoanPayment zip file on my web page. It was written in
Quartus Forth with lots of help from many on this forum - thanks again to all.

Barry Ekstrand

- [LoanPayment.zip](#)

Re: Got a Quartus Forth apps page? Send me your link.

Posted by [Carl Jacobsen](#) on June 27, 1999 at 20:59:28:

In Reply to: [Got a Quartus Forth apps page? Send me your link.](#) posted by Neal Bridges on June 26, 1999 at 22:14:02:

> I'm building a page of links to your Quartus Forth apps -- if you've got a
> Quartus Forth page or apps written with it, send along the links and I'll
> put'em in.

I haven't got a "real" page for work with Quartus yet (that'll likely change in the future), but you can certainly link to PilotGear's page for PhoneDecode if you want (heck, that's what I did from my own "What's on my Pilot?" page).

-- Carl

- [PhoneDecode](#)

Re: Got a Quartus Forth apps page? Send me your link.

Posted by [Serg Koren](#) on June 26, 1999 at 22:16:22:

In Reply to: [Got a Quartus Forth apps page? Send me your link.](#) posted by Neal Bridges on June 26, 1999 at 22:14:02:

> I'm building a page of links to your Quartus Forth apps -- if you've got a
> Quartus Forth page or apps written with it, send along the links and I'll
put'em
> in.

> Neal

You could set up a Quartus Web Ring :-)

Re: Got a Quartus Forth apps page? Send me your link.

Posted by [Neal Bridges](#) on June 26, 1999 at 22:26:37:

In Reply to: [Re: Got a Quartus Forth apps page? Send me your link.](#) posted by Serg Koren on June 26, 1999 at 22:16:22:

> You could set up a Quartus Web Ring :-)

Not a bad thought -- I'm not keen on administering it, but I like the idea.

Neal

Re: Got a Quartus Forth apps page? Send me your link.

Posted by [Erwin Schomburg](#) on June 27, 1999 at 00:29:23:

In Reply to: [Re: Got a Quartus Forth apps page? Send me your link.](#) posted by Neal Bridges on June 26, 1999 at 22:26:37:

> > You could set up a Quartus Web Ring :-)

> Not a bad thought -- I'm not keen on administering it, but I like the idea.

> Neal

I would hate to set up the links, I like the idea of a focal point (Neal's original Quatus site) with a link page much better.

/Erwin

Re: Got a Quartus Forth apps page? Send me your link.

Posted by [Erwin Schomburg](#) on June 27, 1999 at 05:31:55:

In Reply to: [Re: Got a Quartus Forth apps page? Send me your link.](#) posted by Erwin Schomburg on June 27, 1999 at 00:29:23:

> > > You could set up a Quartus Web Ring :-)

> > Not a bad thought -- I'm not keen on administering it, but I like the idea.
> > Neal
> I would hate to set up the links, I like the idea of a focal point (Neal's
> original Quatus site) with a link page much better.
> /Erwin

Fingers still asleep, sorry, have to write QUARTUS fifty times now.....
And the link is below:

- [Erwin's Quartus Apps and HowTo](#)

Re: Got a Quartus Forth apps page? Send me your link.

Posted by [E. Ross Helton](#) on June 27, 1999 at 14:08:33:

In Reply to: [Re: Got a Quartus Forth apps page? Send me your link.](#) posted by
Erwin Schomburg on June 27, 1999 at 05:31:55:

HI Neal;

> > I would hate to set up the links, I like the idea of a focal point (Neal's
> > original Quatus site) with a link page much better.

Here is my site

Quartus Discussion Forum threads started before July 12, 1999.

[Return to the Quartus Discussion Forum](#)

Floating Point Redux

Posted by [Carl Jacobsen](#) on June 25, 1999 at 13:06:31:

Well, I've been playing around with Quartus' floating point routines this morning (my intentions to use fixed-point worked just great right up until I decided I needed to be able to do english<->metric conversions) and I must say, I'm quite impressed, Neal, your floating point routines seem to hang together quite well, in terms of accuracy.

I did run into one thing that confused me:

```
needs float-ext ok
```

```
5E-1 F. 0.50000003 ok
1E0 2E0 F/ F. 0.50000003 ok
```

I'm not complaining, I'm genuinely perplexed -- the accuracy seems to be great in my other tests, and I thought that 1/2, being a power of two, would be precisely representable in floating point...?

-- Carl

Re: Floating Point Redux

Posted by [Neal Bridges](#) on June 25, 1999 at 14:59:15:

In Reply to: [Floating Point Redux](#) posted by Carl Jacobsen on June 25, 1999 at 13:06:31:

> Well, I've been playing around with Quartus' floating point routines
> this morning (my intentions to use fixed-point worked just great right
> up until I decided I needed to be able to do english<->metric
> conversions) and I must say, I'm quite impressed, Neal, your floating
> point routines seem to hang together quite well, in terms of accuracy.

> I did run into one thing that confused me:

>

```
> needs float-ext ok
>
> 5E-1 F. 0.50000003 ok
> 1E0 2E0 F/ F. 0.50000003 ok
>
```

> I'm not complaining, I'm genuinely perplexed -- the accuracy seems to
> be great in my other tests, and I thought that 1/2, being a power of
> two, would be precisely representable in floating point...?

In fact it is precisely representable. The precision is about 6 places. F.
displays 8 places, beyond the actual precision of the float, and there's a
slight accumulated error (not in the number, just in the displayed output)
from
the successive powers-of-ten division used to generate the displayed digits.

```
5E-1 fdup f+ fs. 0.10000000E1 ok
```

Neal

Socket programming (again)

Posted by [Janna Hart](#) on June 25, 1999 at 07:43:01:

I've been fooling with this without much luck, so I was hoping that if I
whined
enough someone might take pity and create a module to simplify access to the
tcp/ip stack.

IR bit fiddling

Posted by [Brent DeWitt](#) on June 24, 1999 at 22:59:53:

I would like to create a program on the Palm which would receive and store
characters and graphics from an HP 48 series calculator via IR. The HP
transmits at 32 kHz carrier and very slowly byte rate(80 char/sec). I know it
can be done somehow. OmniRemote can "learn" a character from the 48 and
transmit it to the HP 82240 printer via IR.

I'm assuming that this will take assembly code for the IR part, since I can
find no SysTrap words that look usefull. Is this true?

Thanks!

Re: IR bit fiddling

Posted by [Neal Bridges](#) on June 24, 1999 at 23:28:30:

In Reply to: [IR bit fiddling](#) posted by Brent DeWitt on June 24, 1999 at 22:59:53:

> I would like to create a program on the Palm which would receive and store
> characters and graphics from an HP 48 series calculator via IR. The HP
> transmits at 32 kHz carrier and very slowly byte rate(80 char/sec). I know
it

> can be done somehow. OmniRemote can "learn" a character from the 48 and
> transmit it to the HP 82240 printer via IR.

> I'm assuming that this will take assembly code for the IR part, since I can
> find no SysTrap words that look usefull. Is this true?

I saw a good description of the technique a few months back in
pilot.programmer

-- that'd be a good place to start your search. It'll take some assembler,
certainly.

Neal

Re: IR bit fiddling

Posted by [Brent DeWitt](#) on June 28, 1999 at 17:01:55:

In Reply to: [Re: IR bit fiddling](#) posted by Neal Bridges on June 24, 1999 at 23:28:30:

> > I would like to create a program on the Palm which would receive and
store

> > characters and graphics from an HP 48 series calculator via IR. The HP
> > transmits at 32 kHz carrier and very slowly byte rate(80 char/sec). I
know
it

> > can be done somehow. OmniRemote can "learn" a character from the 48 and
> > transmit it to the HP 82240 printer via IR.

> > I'm assuming that this will take assembly code for the IR part, since I
can

> > find no SysTrap words that look usefull. Is this true?

> I saw a good description of the technique a few months back in
pilot.programmer

> -- that'd be a good place to start your search. It'll take some assembler,

> certainly.

If pilot.programmer is a usenet group, I can't find it via Netcom. Sorry to be dense.

> Neal

Re: IR bit fiddling

Posted by [Neal Bridges](#) on June 28, 1999 at 17:43:42:

In Reply to: [Re: IR bit fiddling](#) posted by Brent DeWitt on June 28, 1999 at 17:01:55:

> If pilot.programmer is a usenet group, I can't find it via Netcom. Sorry to be dense.

You're not being dense, I should have been more specific. pilot.programmer is a UseNet group available via www.dejanews.com, or directly from the news server news.massena.com.

Neal

Codespace?

Posted by [Dennis Misener](#) on June 24, 1999 at 19:30:52:

What is the significance of "codespace"? How are dictionaries distributed across "dataspace" and "codespace"? I trust QF architecture is somewhat different from the the standard FIG and F83 models as a result of generating native code.

Just curious.

Re: Codespace?

Posted by [Neal Bridges](#) on June 24, 1999 at 21:25:52:

In Reply to: [Codespace?](#) posted by Dennis Misener on June 24, 1999 at 19:30:52:

> What is the significance of "codespace"? How are dictionaries
> distributed across "dataspace" and "codespace"? I trust QF architecture
> is somewhat different from the the standard FIG and F83 models as a result
> of generating native code.

Codespace and dataspace are conceptually distinct, but not necessarily actually distinct -- they can interleave and/or overlap, depends on the implementation.

In the case of Quartus Forth, codespace and dataspace are completely independant spaces. Dataspace varies from between 12K on the older Pilots to as much as 32K on the newer Palms; max codespace in a stand-alone app is 64K, though I'll raise that bar as soon as anybody needs it raised.

Neal

SPT1500 interface works!

Posted by [Dennis Misener](#) on June 24, 1999 at 19:21:19:

Thanks Neal for your patience.

If anyone questions the level of support that comes with QF, point them in my direction. I'm sure you could have coded the darn thing in less time that you spent iterating with me.

For those that are interested... Quartus can call C based code libraries. This was successfully demonstrated by using Quartus to drive the SPT1500 (symbol technology barcode scanner hardware) using their supplied resident library.

Re: SPT1500 interface works!

Posted by [Carl Jacobsen](#) on June 24, 1999 at 20:16:44:

In Reply to: [SPT1500 interface works!](#) posted by Dennis Misener on June 24, 1999 at 19:21:19:

> Thanks Neal for your patience.

>

> If anyone questions the level of support that comes with QF, point them
> in my direction. I'm sure you could have coded the darn thing in less time
> that you spent iterating with me.

Indeed, Neal has an unusually strong combination of talent and patience...

("The force is unusually strong with this one..." :-)

(well, let's just hope that we don't have to get Neal a scuba tank and a
black cape, three episodes, er, major revisions down the line :-)

> For those that are interested... Quartus can call C based code libraries.
> This was successfully demonstrated by using Quartus to drive the SPT1500
> (symbol technology barcode scanner hardware) using their supplied resident
> library.

I'm glad to hear of your success, having watched the saga on here on the
forum. I have little use for the SPT1500, myself, but I'm wondering how
hard it would be now to apply the same techniques to connect Quartus to
MathLib, something that has been discussed here from time to time.

[Uh, just in case that sounded otherwise, I'm not trying to push anyone
into actually *doing* the interface; I'm just hoping that having the
techniques published will make it feasible for someone (maybe even me) to
do it at some point.]

-- Carl

- [MathLib](#)

Re: SPT1500 interface works!

Posted by [Neal Bridges](#) on June 25, 1999 at 10:55:11:

In Reply to: [Re: SPT1500 interface works!](#) posted by Carl Jacobsen on June 24, 1999 at 20:16:44:

> Indeed, Neal has an unusually strong combination of talent and patience...

> ("The force is unusually strong with this one..." :-)

> (well, let's just hope that we don't have to get Neal a scuba tank and a
> black cape, three episodes, er, major revisions down the line :-)

At least you're not envisioning me as Yoda. :)

> > For those that are interested... Quartus can call C based code libraries.
> > This was successfully demonstrated by using Quartus to drive the SPT1500
> > (symbol technology barcode scanner hardware) using their supplied
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> > library.

> I'm glad to hear of your success, having watched the saga on here on the
> forum. I have little use for the SPT1500, myself, but I'm wondering how
> hard it would be now to apply the same techniques to connect Quartus to
> MathLib, something that has been discussed here from time to time.

> [Uh, just in case that sounded otherwise, I'm not trying to push anyone
> into actually *doing* the interface; I'm just hoping that having the
> techniques published will make it feasible for someone (maybe even me) to
> do it at some point.]

The challenge with MathLib is in converting the floating-point formats, as
Quartus Forth uses a fast single-precision representation; after that it's
straightforward to use.

Neal

Re: R2D2

Posted by [E. Ross Helton](#) on June 25, 1999 at 13:19:57:

In Reply to: [Re: SPT1500 interface works!](#) posted by Neal Bridges on June 25,
1999 at 10:55:11:

Hi Neal;

Maybe it was really good you aren't thought of as R2D2 or C3P0 or maybe Ya Ya
Bink or whatever his name is.

Being you're on the Palm so much R2D2 might be apt?

> > (well, let's just hope that we don't have to get Neal a scuba tank and a
> > black cape, three episodes, er, major revisions down the line :-)

> At least you're not envisioning me as Yoda. :)

Make it a good day!

Ross

Re: R2D2

Posted by [Neal Bridges](#) on June 25, 1999 at 15:00:41:

In Reply to: [Re: R2D2](#) posted by E. Ross Helton on June 25, 1999 at 13:19:57:

> Maybe it was really good you aren't thought of as R2D2 or C3P0 or maybe Ya
Ya

> Bink or whatever his name is.

> Being you're on the Palm so much R2D2 might be apt?

I'm taller than that.

Neal

Re: R2D2

Posted by [E. Ross Helton](#) on June 25, 1999 at 23:11:43:

In Reply to: [Re: R2D2](#) posted by Neal Bridges on June 25, 1999 at 15:00:41:

Hi Neal;

BEEp BEEP !!

> > Maybe it was really good you aren't thought of as R2D2 or C3P0 or maybe
Ya

> > Bink or whatever his name is.

> > Being you're on the Palm so much R2D2 might be apt?

> I'm taller than that.

Make it a good day!

Ross

Kudos to Steve Donahue

Posted by [Kobi](#) on June 24, 1999 at 17:51:00:

I have found a document named "On-Board Development Tutorial" by Steven Donahue in Quartus FORTH File Area. Highly recommended for beginners like me, with no experience both in Forth and in Palm programming! This doc was really helpful.

Wow! I wrote an application and it even worked!

Thanks, Steven! I wonder if you have time and intention to continue this tutorial - it stops at the most intriguing moment :)

First Palm App--ActiveKey

Posted by [Ron Doerfler](#) on June 24, 1999 at 02:46:10:

Hi everyone,

Well, I finally get the chance to announce my first Quartus Forth app (and my first Palm app), which has been submitted to PalmPilotGear and should be posted in the next day or so.

Meanwhile, if you're interested, visit the www.eddiesoft.com link below and select the Products link. My app is called ActiveKey, and it's a *touchpad* memo editor for those who find Graffiti and the tiny keyboard too slow, too error-prone, or just not much fun.

The program was written entirely on-board using RsrcEdit (which I've registered) to create the forms. The only work done on my PC was testing it against Debug ROMs and documentation.

I want to thank Neal for the support he's given me in looking over my early versions and offering suggestions. What a guy!

Ron

- [EddieSoft](#)

Re: First Palm App--ActiveKey

Posted by [Erwin Schomburg](#) on June 24, 1999 at 07:28:37:

In Reply to: [First Palm App--ActiveKey](#) posted by Ron Doerfler on June 24, 1999 at 02:46:10:

> Hi everyone,

> Well, I finally get the chance to announce my first Quartus
> Forth app (and my first Palm app), which has been submitted
> to PalmPilotGear and should be posted in the next day or so.

> Meanwhile, if you're interested, visit the www.eddiesoft.com
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> ActiveKey, and it's a *touchpad* memo editor for those who
> find Graffiti and the tiny keyboard too slow, too error-prone,
> or just not much fun.

> The program was written entirely on-board using RsrcEdit (which
> I've registered) to create the forms. The only work done on
> my PC was testing it against Debug ROMs and documentation.

> I want to thank Neal for the support he's given me in looking
> over my early versions and offering suggestions. What a guy!

> Ron

Well knowing that (and how) Forth programming is sometimes close to the bare bones, I have taken to run fellow enthusiasts apps on Emulator under Gremlins.

Unless there is a very good explanation why it should not be able to run through

a million Gremlin cycle, I found apps to be trashing my real system sooner or later if this test is not passed. So my question is if there *is* a logical explanation why Emulator execution dies around the 1000th Gremlin under ActiveKey and can only be revived by a reset?

/Erwin

Re: First Palm App--ActiveKey

Posted by [Ron Doerfler](#) on June 24, 1999 at 11:12:30:

In Reply to: [Re: First Palm App--ActiveKey](#) posted by Erwin Schomburg on June 24, 1999 at 07:28:37:

Hi Erwin,

```
> Well knowing that (and how) Forth programming is sometimes close to the
> bare
> bones, I have taken to run fellow enthusiasts apps on Emulator under
> Gremlins.
> Unless there is a very good explanation why it should not be able to run
> through
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> or
> later if this test is not passed. So my question is if there *is* a logical
> explanation why Emulator execution dies around the 1000th Gremlin under
> ActiveKey and can only be revived by a reset?

> /Erwin
```

Gremlins can't be run on ActiveKey, it turns out, because it apparently can't recognize that the Graffiti area is disabled at the beginning of my program. When it sees the field that is the initial memo list, for example, it starts inserting characters into the field (and even brings up the keyboard at times) even though there is no way a user can input text, as the Graffiti area is disabled through the EvtEnableGraffiti system call. Since in List Mode I use that field as a list of memo titles, one per line, mapped to their memo indexes in memory, then the system crashes after Gremlins start adding text and carriage returns to it. Also, in Edit Mode as well, entering text without going through the key entry routines of mine also will cause crashes.

So Gremlins will crash. You can try to enter characters like Gremlins does into the List Mode field--you will see that it can't be done.

Thanks for taking the time to look at it. I will be taking up this issue with 3Com on their Palm developer forum shortly.

Ron

Re: First Palm App--ActiveKey

Posted by Erwin on June 24, 1999 at 16:31:51:

In Reply to: [Re: First Palm App--ActiveKey](#) posted by Ron Doerfler on June 24, 1999 at 11:12:30:

> Gremlins can't be run on ActiveKey, it turns out, because
> it apparently can't recognize that the Graffiti area is disabled
> at the beginning of my program. When it sees the field that
> is the initial memo list, for example, it starts inserting
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> at times) even though there is no way a user can input text,
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> can't be done.

> Thanks for taking the time to look at it. I will be taking
> up this issue with 3Com on their Palm developer forum
> shortly.

> Ron

Interesting. Thanks for the explanation.

/Erwin

Re: First Palm App--ActiveKey

Posted by Erwin on June 25, 1999 at 09:24:07:

In Reply to: [Re: First Palm App--ActiveKey](#) posted by Erwin on June 24, 1999 at 16:31:51:

> > Gremlins can't be run on ActiveKey, it turns out, because
> > it apparently can't recognize that the Graffiti area is disabled
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> > up this issue with 3Com on their Palm developer forum
> > shortly.

> > Ron

> Interesting. Thanks for the explanation.

> /Erwin

Follow up: It crashes my real PIIIx with an "invalid handle" fatal, no matter
what I try to do after its started up.

/Erwin

Re: First Palm App--ActiveKey

Posted by [Neal Bridges](#) on June 26, 1999 at 00:10:47:

In Reply to: [Re: First Palm App--ActiveKey](#) posted by Erwin on June 25, 1999
at 09:24:07:

> Follow up: It crashes my real PIIIx with an "invalid handle" fatal, no
matter
> what I try to do after its started up.

It runs on my real IIIx no problem -- perhaps you have a software conflict of
some kind.

Neal

Re: First Palm App--ActiveKey

Posted by Erwin on June 26, 1999 at 00:21:20:

In Reply to: [Re: First Palm App--ActiveKey](#) posted by Neal Bridges on June 26, 1999 at 00:10:47:

> > Follow up: It crashes my real PIIIx with an "invalid handle" fatal, no matter

> > what I try to do after its started up.

> It runs on my real IIIx no problem -- perhaps you have a software conflict of

> some kind.

> Neal

For sure. But its the new kid in town that gets blamed if it does not want to play with the others.

/Erwin

Re: First Palm App--ActiveKey

Posted by [Neal Bridges](#) on June 26, 1999 at 00:38:29:

In Reply to: [Re: First Palm App--ActiveKey](#) posted by Erwin on June 26, 1999 at 00:21:20:

> For sure. But its the new kid in town that gets blamed if it does not want to

> play with the others.

Right, but blame assignment notwithstanding, I'd be curious to know what it's conflicting with.

Neal

Re: First Palm App--ActiveKey

Posted by Erwin on June 26, 1999 at 05:32:00:

In Reply to: [Re: First Palm App--ActiveKey](#) posted by Neal Bridges on June 26, 1999 at 00:38:29:

> > For sure. But its the new kid in town that gets blamed if it does not want to play with the others.

> Right, but blame assignment notwithstanding, I'd be curious to know what it's conflicting with.

> Neal

Give me some time, I'm investigating, but to no avail so far.

/Erwin

Re: First Palm App--ActiveKey

Posted by Erwin on June 26, 1999 at 11:15:49:

In Reply to: [Re: First Palm App--ActiveKey](#) posted by Erwin on June 26, 1999 at 05:32:00:

> > > For sure. But its the new kid in town that gets blamed if it does not want to play with the others.

> > Right, but blame assignment notwithstanding, I'd be curious to know what it's conflicting with.

> > Neal

> Give me some time, I'm investigating, but to no avail so far.

> /Erwin

Got it: IRLink uses a database with creator memo, type DATA, to hide their registration scheme. ActiveKey accesses (tries to...) a database with creator memo, type DATA and hopes this will be the one containing them memos, without checking the name of the beast. Boink.

/Erwin

Re: First Palm App--ActiveKey

Posted by [Neal Bridges](#) on June 26, 1999 at 11:36:11:

In Reply to: [Re: First Palm App--ActiveKey](#) posted by Erwin on June 26, 1999 at 11:15:49:

> Got it: IRLink uses a database with creator memo, type DATA, to hide their
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> memo, type DATA and hopes this will be the one containing them memos,
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> checking the name of the beast. Boink.

That's way down the low end of the 'clever' scale as regards IRLink. However
--
should be easy for Ron to have ActiveKey open the MemoPad database by name
instead of by creator/type.

Neal

Re: First Palm App--ActiveKey

Posted by Erwin on June 26, 1999 at 13:23:15:

In Reply to: [Re: First Palm App--ActiveKey](#) posted by Neal Bridges on June 26, 1999 at 11:36:11:

> > Got it: IRLink uses a database with creator memo, type DATA, to hide
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> instead of by creator/type.

> Neal

Well, it took a good deal of creative imagination to track this one, after I could exclude Hack and/or TrapWeaver interference. §&!@@! them. 't was a lot easier to find and (have) plug(ged) the holes in some other recent publications.

/Erwin

Re: First Palm App--ActiveKey

Posted by [Ron Doerfler](#) on June 27, 1999 at 18:50:32:

In Reply to: [Re: First Palm App--ActiveKey](#) posted by Erwin on June 26, 1999 at 13:23:15:

Hi Erwin and Neal,

Been out of town--just saw your posts (remotely). I'm really surprised about IRLink! However, I will change my code to call the database by name when I get back (tomorrow) and create version 1.1.

Thanks for finding the conflict, Erwin--I can understand how it took awhile to find it. For some reason it hasn't been posted on PalmPilotGear yet, so I'm calling them tomorrow, and I expect to be able to slip version 1.1 in before 1.0 ever gets publicized.

I really appreciate the support I get here.

Ron

> > > Got it: IRLink uses a database with creator memo, type DATA, to hide their
> > > registration scheme. ActiveKey accesses (tries to...) a database with
> creator
> > > memo, type DATA and hopes this will be the one containing them memos,
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> easier to find and (have) plug(ged) the holes in some other recent publications.

> /Erwin

Scanned Graphics

Posted by [E. Ross Helton](#) on June 23, 1999 at 19:30:13:

Hi;

How would a person get some scanned graphics into a form that could be displayed on the Pilot?

These would be very close to simple line drawings, no color.

What product would a person use to get them into the correct form?

Make it a good day!

Ross

Re: Scanned Graphics

Posted by [Neal Bridges](#) on June 23, 1999 at 20:26:06:

In Reply to: [Scanned Graphics](#) posted by E. Ross Helton on June 23, 1999 at 19:30:13:

> How would a person get some scanned graphics into a form that could be displayed
> on the Pilot?

> These would be very close to simple line drawings, no color.

> What product would a person use to get them into the correct form?

For starters, they need to be black and white images, no grayscale or colour. Then they need to be sized small enough for the Palm screen. At that point I

suggest you use the utilities that ship with TealPaint to convert them to TealPaint images, and then use RsrcEdit's facilities to import them into your resource database as bitmaps.

Neal

adding new records to a database

Posted by [Bill Stein](#) on June 22, 1999 at 23:43:20:

What's the difference between adding a new record with DmNewRecord, and using DmNewHandle followed by DmAttach record? Still trying to understand all (well some) of the Dm calls. I know this isn't a Forth question, but I appreciate any help you can give.

BTW, I installed hackmaster, and in switching between Quartus and the memo pad, Quartus restats each time, is this correct?

Thanks

Bill Stein

Editing source within Quartus [was Re: adding new records to a database]

Posted by [Carl Jacobsen](#) on June 24, 1999 at 19:53:23:

In Reply to: [adding new records to a database](#) posted by Bill Stein on June 22, 1999 at 23:43:20:

> BTW, I installed hackmaster, and in switching between Quartus and the memo
> pad, Quartus restats each time, is this correct?

I'm guessing that you actually mean that you're using the SwitchHack hack, (great hack, BTW) running under HackMaster, to switch between apps, right?

First answer is, no, every time you leave and re-enter Quartus, it re-inits the environment. Neal did this on purpose, because many things in the environment may be affected by other apps, and thus there's no way to guarantee that everything in the environment is exactly the same when you return as when you left.

Second answer is, there is a hack, by Bozidar Benc, called *PopUp Note*,

which allows you to edit memos from within other programs. And yes, it works with Quartus (Neal made a few tweaks to Quartus to ensure this).

Good for working out minor changes; you can pop it up, make a change, issue your "include memoname" command again, and try out your changes, without the overhead of quitting and restarting Quartus.

In practice, I find that I do this for minor changes, but I quit out to the "real" memopad for most work -- mostly for the additional screen real estate.

-- Carl

- [PopUp Note](#)

Re: adding new records to a database

Posted by [Neal Bridges](#) on June 23, 1999 at 02:51:39:

In Reply to: [adding new records to a database](#) posted by Bill Stein on June 22, 1999 at 23:43:20:

> What's the difference between adding a new record with DmNewRecord, and using
> DmNewHandle followed by DmAttach record? Still trying to understand all
(well
> some) of the Dm calls. I know this isn't a Forth question, but I appreciate any
> help you can give.

Have you had a look at the SDK docs? There's a section on the Dm* calls that covers a lot of this sort of question. Perhaps if this is something it doesn't cover, but that's where I would look first for the answer.

> BTW, I installed hackmaster, and in switching between Quartus and the memo pad,
> Quartus restats each time, is this correct?

Yes. Quartus Forth starts clean each time, though it does re-read the startup.quartus memo. If you wish to have things persist, include them from within the startup.quartus memo.

Neal

Quartus Programmer Needed For Personality Test

Posted by [David fauvre](#) on June 22, 1999 at 23:30:23:

I need a Quartus Programmer to create a simple Personality Test. There are 9 choices of personality descriptoins, the user ranks their top three picks in order of preference. Once this is done the program will display the personality types chosen and information.

I am an expert in this field and would greatly like to find someone to write this program. The test is completed and all info ready to be emailed out.

Will trade individual consultation on personality typing or pay for w

Questions re. registering Quartus Forth

Posted by [Kobi](#) on June 22, 1999 at 15:01:21:

I am considering purchasing a license for Quartus Forth. I'd like to ask two questions before I make my decision (not that this is going to make any difference - I will buy it anyway :)

1. Regarding a phrase on the "Registering Quartus Forth" web page (<http://www.interlog.com/~nbridges/manual/register.htm>) : "Registered users also receive 60 days of technical support via e-mail":

What kind of support do registered users get besides the generous and prompt help provided on this message board by Neal Bridges and others for both registered and non-regirsered users alike?

2. The WEB page mentions nothing about future releases. Does purchasing a license for the registered version entitle me to getting free "upgrades"?

Thank you,
Kobi.

Re: Questions re. registering Quartus Forth

Posted by [E. Ross Helton](#) on June 22, 1999 at 16:26:01:

In Reply to: [Questions re. registering Quartus Forth](#) posted by Kobi on June 22, 1999 at 15:01:21:

Dear Kobi;

I can attest to the fact that Neal is more than fair with his support of his products. Very few products have the support which Quartus Forth has. Neal doesn't just give advise he will actually look at your code and give you hints if need be.

I know that this is not the only testimony that could be given about this.

Register with confidence. It will be one of the best investments, that you ever have made.

> What kind of support do registered users get besides the generous and prompt
> help provided on this message board by Neal Bridges and others for both
> registered and non-regirsered users alike?

Make it a good day!

Ross

Re: Questions re. registering Quartus Forth

Posted by [Neal Bridges](#) on June 22, 1999 at 15:33:59:

In Reply to: [Questions re. registering Quartus Forth](#) posted by Kobi on June 22, 1999 at 15:01:21:

> I am considering purchasing a license for Quartus Forth. I'd like
> to ask two questions before I make my decision (not that this is going to
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:)

> 1. Regarding a phrase on the "Registering Quartus Forth" web page
> (<http://www.interlog.com/~nbridges/manual/register.htm>) : "Registered
> users also receive 60 days of technical support via e-mail":

> What kind of support do registered users get besides the generous and
prompt

> help provided on this message board by Neal Bridges and others for both
> registered and non-registered users alike?

That clause is there so that I'm not beholden by law to provide support for, say, Quartus Forth version 1.2.1 in perpetuity. Certainly I have not and will not refuse to support registered users (in fact I support non-registered users as well) -- it's just there to give me a way to twilight the product, for instance in favour of a new version.

I'll work directly with registered users on specific problems; presently I have a few such efforts underway.

> 2. The WEB page mentions nothing about future releases. Does
> purchasing a license for the registered version entitle me to getting
> free "upgrades"?

I've sent out all the upgrades so far free-of-charge, and will continue to do so until the release of version 2, which be available at a nominal cost to current registered users.

> Thank you,

Anytime!

Neal

Re: Questions re. registering Quartus Forth

Posted by [Rick Appling](#) on June 22, 1999 at 21:37:12:

In Reply to: [Re: Questions re. registering Quartus Forth](#) posted by Neal Bridges on June 22, 1999 at 15:33:59:

> > I am considering purchasing a license for Quartus Forth. I'd like
> > to ask two questions before I make my decision

I also have a question about registering. I was wondering if a manual is provided?

Also I had asked about about a problem I was having working with the serial port. I tried following your suggestions but the results were the same, my palm would crash as soon as I would try to open the serial port. But also in your reply there were things that I had not ran into before, such as 38400. which I now assume is a double integer. So I thought it might be a good idea to catch up on where Forth has gone to. I haven't done any Forth programming

since the early 80's. I have been just too busy to make much progress.

Re: Questions re. registering Quartus Forth

Posted by [Neal Bridges](#) on June 23, 1999 at 02:49:51:

In Reply to: [Re: Questions re. registering Quartus Forth](#) posted by Rick
Applying on June 22, 1999 at 21:37:12:

> I also have a question about registering. I was wondering if a manual is
> provided?

Yes -- the manual is available online on the Quartus Forth page. You can
peruse
it before registration.

> Also I had asked about about a problem I was having working with the serial
> port. I tried following your suggestions but the results were the same, my
> palm would crash as soon as I would try to open the serial port. But also
in
> your reply there were things that I had not ran into before, such as 38400.
> which I now assume is a double integer. So I thought it might be a good
idea
> to catch up on where Forth has gone to. I haven't done any Forth
programming
> since the early 80's. I have been just too busy to make much progress.

I don't recall your problem, but the Palm OS is not very forgiving of invalid
values. In fact 38400. is a double-cell integer (so indicated by the .) and
that's what the serial open call requires; if you passed only a single-cell
integer the OS would receive a random value as the baud rate and proceed to
give
a Fatal Exception.

If you have some code you'd like me to look at, send it along!

Neal

Novice Requests Advice

Posted by [Mark Woodworth](#) on June 22, 1999 at 00:14:04:

First, let me applaud Neal for Quartus. It is everything that always excited me about Forth! Bravo.

I was a little dismayed, however, looking over the sample applications, in that they required a desktop hosted resource compiler and assembler to get the resources. I am really attached to the idea of developing completely on the Palm itself.

Can Quartus coupled with RsrcEdit get me to an all-Palm development environment? Or are the desktop tools so much easier to work with that I should use them for initial form layout and such?

Mark

Re: Novice Requests Advice

Posted by [Neal Bridges](#) on June 22, 1999 at 00:37:35:

In Reply to: [Novice Requests Advice](#) posted by Mark Woodworth on June 22, 1999 at 00:14:04:

> First, let me applaud Neal for Quartus. It is everything that always excited
> me about Forth! Bravo.

By the way -- thanks for your kind words!

Neal

Re: Novice Requests Advice

Posted by [Neal Bridges](#) on June 22, 1999 at 00:32:27:

In Reply to: [Novice Requests Advice](#) posted by Mark Woodworth on June 22, 1999 at 00:14:04:

> First, let me applaud Neal for Quartus. It is everything that always excited
> me about Forth! Bravo.

> I was a little dismayed, however, looking over the sample applications, in
> that they required a desktop hosted resource compiler and assembler to get

> the resources. I am really attached to the idea of developing completely on
> the Palm itself.

I shall have to freshen the documentation to emphasize RsrcEdit.

> Can Quartus coupled with RsrcEdit get me to an all-Palm development
> environment? Or are the desktop tools so much easier to work with that
> I should use them for initial form layout and such?

Yes indeed! -- RsrcEdit lets you have an all-Palm solution; in fact that's
what

I do. All my sample applications (and the commercial ones) I've written using
Quartus Forth were created entirely on-board a Palm using Quartus Forth, with
RsrcEdit to generate the GUI.

Neal

Re: Novice Requests Advice

Posted by [Erwin Schomburg](#) on June 22, 1999 at 01:15:32:

In Reply to: [Re: Novice Requests Advice](#) posted by Neal Bridges on June 22,
1999 at 00:32:27:

> > First, let me applaud Neal for Quartus. It is everything that always
excited

> > me about Forth! Bravo.

> > I was a little dismayed, however, looking over the sample applications,
in

> > that they required a desktop hosted resource compiler and assembler to
get

> > the resources. I am really attached to the idea of developing completely
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> > the Palm itself.

> I shall have to freshen the documentation to emphasize RsrcEdit.

> > Can Quartus coupled with RsrcEdit get me to an all-Palm development
> > environment? Or are the desktop tools so much easier to work with that

> > I should use them for initial form layout and such?

> Yes indeed! -- RsrcEdit lets you have an all-Palm solution; in fact that's
what

> I do. All my sample applications (and the commercial ones) I've written
using

> Quartus Forth were created entirely on-board a Palm using Quartus Forth,
with

> RsrcEdit to generate the GUI.

> Neal

Admittedly my collection is a very subjective one, but feel free to look up my

notes regarding a complete Quartus design environment under the link given below.

Hint to Neal: Feel free to point to this until your documentation is again current.

/Erwin

- [Erwin's assorted ramblings on Quartus](#)

Re: Novice Requests Advice

Posted by [Mark Woodworth](#) on June 22, 1999 at 00:44:17:

In Reply to: [Re: Novice Requests Advice](#) posted by Neal Bridges on June 22, 1999 at 00:32:27:

Thanks again, Neal, for a great product and AMAZINGLY fast answers!

Mark.

Releases of Rtrek and Rconvert

Posted by [E. Ross Helton](#) on June 21, 1999 at 15:27:18:

Hi;

Just updated and re-released Rtrek and Rconvert. They both now have much improved user interfaces. This is thanks to Neal, Erwin, my son Jesse Helton.

I think you will enjoy them.

Make it a good day!

Ross

You get to them by clicking on Palm Pilot and PC software on the page.

- [What The Tech Heard](#)

Re: Releases of Rtrek and Rconvert

Posted by [Neal Bridges](#) on June 21, 1999 at 18:10:23:

In Reply to: [Releases of Rtrek and Rconvert](#) posted by E. Ross Helton on June 21, 1999 at 15:27:18:

> Just updated and re-released Rtrek and Rconvert. They both now have much
> improved user interfaces. This is thanks to Neal, Erwin, my son Jesse
Helton.

Glad to help. Good work! I get real buzz out of seeing apps created with
Quartus Forth.

Neal

New QF Palm App Posted

Posted by [Barry Ekstrand](#) on June 21, 1999 at 13:52:34:

Hi all,

I finished my first Quartus Forth app, a loan payment calculator program
named
LoanPayment (unique, huh? Well, my first choice turned out to have already
been
taken, and it WAS midnight....). I have posted it as a Char-Ware (charitable
shareware) program on my website at <http://members.aol.com/EkstrandBB> and at
PilotGear HQ. All proceeds from registration (\$5 fee) are donated to the
Juvenile Diabetes Foundation; PilotGear handles the registration (if they
ever
get their site working right!!) and distributes the proceeds for me to JDF. I
posted an evaluation copy which is fully functional but has a "nag box"
registration reminder that pops up every third time the Calculate button is
pressed. I figure that is pretty benign but hopefully will encourage
registration by those that want to use it and support the effort to find a
cure
for Juvenile Diabetes.

A big note of thanks is in order to all who have helped me in learning Forth
and Palm OS programming to this point. I am really encouraged by the number
of
downloads and e-mail feedback from folks who have tried it out since posting
it
Saturday night. This is a small step for a real programmer, but it feels like
a big one to this novice with a desire to merge a hobby with a desire to

support JDF. Any comments about the app will, as always, be appreciated.

Regards,

Barry Ekstrand

Re: New QF Palm App Posted

Posted by [Neal Bridges](#) on June 21, 1999 at 17:44:33:

In Reply to: [New QF Palm App Posted](#) posted by Barry Ekstrand on June 21, 1999 at 13:52:34:

> Hi all,

> I finished my first Quartus Forth app, a loan payment calculator program named

> LoanPayment

[snip]

Good job. By the way I tested it under Palm OS version 1 (the original) and it ticks along nicely.

Neal

Re: New QF Palm App Posted

Posted by [Barry Marks](#) on June 21, 1999 at 16:43:31:

In Reply to: [New QF Palm App Posted](#) posted by Barry Ekstrand on June 21, 1999 at 13:52:34:

I thought I'd add a little encouraging news since you chose to send the procedes to the JDF. I saw on CNN News a few weeks ago that there have been some major breakthroughs in diabetes, and juvenine diabetes in particular, that promise to eliminate the effects of diabetes in the next 5 to 10 years. But that depends on further research, meaning money. So any money donated to this cause is very likely to make a big difference.

I'll be registering it for that reason even though I have no need for a loan calculator. I hope everyone else will do the same.

Barry

Off-topic - Diabetes (Was:New QF Palm App Posted)

Posted by [Barry Ekstrand](#) on June 22, 1999 at 12:20:05:

In Reply to: [Re: New QF Palm App Posted](#) posted by Barry Marks on June 21, 1999 at 16:43:31:

Barry and all others,

> I'll be registering it for that reason even though I have no need for a
> loan
> calculator. I hope everyone else will do the same.
> Barry

As the parent of a 4-year old stricken with Juvenile Diabetes, I really appreciate the support. This disease is much more serious and difficult to deal with than I ever imagined prior to her diagnosis. My wife and I are encouraged by the medical research that is going on and believe that better control of the disease and a cure are coming as a result. Unfortunately, JD is not one of the 'politically correct' diseases to support, even though the effect on the economies of the world is much greater than many that are supported. The bottom line is that governments give only token support to JD medical research, so it is up to individuals to make it happen. This is why I am dedicating my time to the Char-Ware effort as well as support to JDF's Walk To The Cure each year.

I realize this isn't really a topic for this forum, but I want all to know that your assistance in helping me to learn to program in Forth for the Palm device is targeted at something more important than just my own enjoyment of learning it. The donations that result from registering my output will support the fight against this insidious disease, and could be the funding that results in the cure being found. Thanks again to all for your support.

Regards,

Barry Ekstrand

Good Advice for New Forth Programmers

Posted by [Neal Bridges](#) on June 17, 1999 at 22:21:50:

Andrew Haley posted this advice on comp.lang.forth -- it's worthy of reposting here for those of you who don't read that group.

In article <7k8lln\$q3c\$1@korai.cygnus.co.uk>, aph@cygnus.remove.co.uk (Andrew Haley) wrote:

> Robert W. Cunningham (rcunning@acm.org) wrote:

> : Here I am, making slow but steady progress trying to learn Forth and
> : to make sense of a bunch of words and stack diagrams. I find I'm
> : spending far too much time fixing stupid mistakes, and too little
> : time learning Forth.

> : I'd love to have a debugger that would "understand" stack diagrams,
> : use them to "name" items taken from or placed on the stack, and
> : ensure the description of an item to be taken from a stack is
> : compatible with the description of the item placed there.

> I can see why you might want such a thing, but I don't think that it
> would help you to write good code.

> I have worked on (i.e. tried to debug) a number of systems which were
> written by Forth newcomers who were using powerful debuggers to
> develop their code. What tends to happen in such cases is that you
> end up with long definitions which have many items on the stack and
> are difficult to debug.

> May I make a suggestion? Try writing all of your code using
> definitions one, or at most two lines long. Produce a stack digram
for

> each word showing its inputs and its outputs. If you ever need an
> "intermediate" stack diagram to see what's going on, split your word
> at that point into two words. By doing this, you may test each half
> of the word on the command line, checking the stack each time. Do not
> use PICK and ROLL.

> Once you get the hang of writing code in this way you can relax these
> rules, but it's much better to get used to this style first.

> Andrew.

Re: Good Advice for New Forth Programmers

Posted by [Bob Cunningham](#) on June 18, 1999 at 00:31:13:

In Reply to: [Good Advice for New Forth Programmers](#) posted by Neal Bridges on June 17, 1999 at 22:21:50:

```
> In article <7k8lln$q3c$1@korai.cygnus.co.uk>,
> aph@cygnus.remove.co.uk (Andrew Haley) wrote:
> > May I make a suggestion? Try writing all of your code using
> > definitions one, or at most two lines long. Produce a stack digram
> > for
> > each word showing its inputs and its outputs. If you ever need an
> > "intermediate" stack diagram to see what's going on, split your word
> > at that point into two words. By doing this, you may test each half
> > of the word on the command line, checking the stack each time. Do not
> > use PICK and ROLL.
> >
> > Once you get the hang of writing code in this way you can relax these
> > rules, but it's much better to get used to this style first.
```

Actually, that's part of my problem. I'm breaking my code into sub-atomic fragments that factor naturally and mesh well. But I find there are two "flavors" for factoring that I'll call Vertical and Horizontal. The simplest example of Vertical Factoring would be converting the guts of a loop (or any iteration or recursion) into a word. The equivalent examples for Horizontal Factoring would be breaking a step-by-step algorithm into separate words for each step.

When debugging H-words, .S does fine, since the stack stays fairly shallow. But for V-words, I find the stack depth grows quite quickly, and I have great trouble finding some problems (such as an error in my stack diagram, or pushing one cell when I needed two). The dilemma that prompted my post concerns debugging several complex equations that are largely implemented in fixed-point, but occasionally require floating point operations and intermediate storage (to preserve precision, sort of like what */ does). By the time things crash, I can't tell which line of code placed a specific value on the stack (generally due to conditionals, or more directly to the lack of an execution trace buffer).

I keep making dumb, dumb, dumb coding errors, typos, and outright brain farts.

A tool to catch the more common ones (data size/type confusion and word type agreement on the stack) would be a godsend. It might be little more than treating the entire stack as a set of temporary variables, each with a specific

type, one writer and one reader. The reader must use what the writer wrote the way the writer wrote it, or a descriptive error message will be generated: "A floating point value written by the word DTRT was read as a single cell value by word DTWT." You know, to keep me honest.

Yes, I'm trying to do too much Forth too quickly with too little knowledge. I'm in a rush. If this project could be done in "C" (or almost any other language), I'd have compiler syntax checking, static type checking, function argument agreement checking, and free checking with a \$1000 balance. The debugger would give me complete stack traces, snapshots of all variables, profiling, breakpoints, watch points, error trapping, execution tracing, single-stepping, and a partridge in a pear tree.

Forth is *the* language for this project. But a few more support tools sure would be nice!

Maybe I'm just spoiled. Or sloppy. Either way, I feel I'm wasting time using my eyeballs to find errors that are not too difficult to detect automatically.

Someday, when I know a little more about Forth and its innards, I'll make a stab at implementing my own tools. But that day ain't today! Hence my plea for some smart tools.

-BobC

Re: Good Advice for New Forth Programmers

Posted by [Neal Bridges](#) on June 18, 1999 at 00:45:06:

In Reply to: [Re: Good Advice for New Forth Programmers](#) posted by Bob Cunningham on June 18, 1999 at 00:31:13:

> By the time things
> crash, I can't tell which line of code placed a specific value on the stack
> (generally due to conditionals, or more directly to the lack of an
execution
> trace buffer).

Factor well, and when you encounter a problem, insert breakpoints (using ABORT") to indicate progress through your code.

> I keep making dumb, dumb, dumb coding errors, typos, and outright brain farts.

> A tool to catch the more common ones (data size/type confusion and word type
> agreement on the stack) would be a godsend. It might be little more than
> treating the entire stack as a set of temporary variables, each with a
specific
> type, one writer and one reader. The reader must use what the writer wrote
the
> way the writer wrote it, or a descriptive error message will be generated:
"A
> floating point value written by the word DTRT was read as a single cell
value
> by word DTWT." You know, to keep me honest.

The example you give is flawed, as the floating-point stack is an independent
stack from the data stack -- a float cannot accidentally be read as an
integer.

Within Forth, data types are up to the developer. There's no type-checking in
Forth, though you can implement such yourself with sentinel values on the
stack.
Should you do so, I'd recommend you do it with conditional code that can be
commented-out at final build.

> Yes, I'm trying to do too much Forth too quickly with too little knowledge.
> I'm in a rush. If this project could be done in "C" (or almost any other
> language), I'd have compiler syntax checking, static type checking,
function
> argument agreement checking, and free checking with a \$1000 balance. The
> debugger would give me complete stack traces, snapshots of all variables,
> profiling, breakpoints, watch points, error trapping, execution tracing,
single-
> stepping, and a partridge in a pear tree.

These are not things that experienced Forth programmers use or need. The
philosophy is to build incrementally, testing each new short, well-factored
word
as it's written, with subsequent definitions building on top of a well-tested
base. Build in small increments, and test as you build -- *tester.txt*
lets you build functional and unit tests directly into your source.

> Forth is **the** language for this project. But a few more support tools sure
> would be nice!

I believe you've pegged your own problem. Learning to use Forth well takes a
little time. It's not just another language, but in fact a different way of
thinking about problems. Once you begin to understand the new method, it'll
click into place.

> Maybe I'm just spoiled. Or sloppy. Either way, I feel I'm wasting time
using
> my eyeballs to find errors that are not too difficult to detect

automatically.

Use of breakpoints, diagnostic messages, stack displays, and the occasional sentinel value should do the trick.

> Someday, when I know a little more about Forth and its innards, I'll make a
> stab at implementing my own tools. But that day ain't today! Hence my plea
> for some smart tools.

By that time, I daresay you'll no longer feel the need for the tools. In the
meantime, if you'd like to show me some of your problem sources, I'd be happy
to
show you how I'd go about tracing the bugs.

Neal

Re: Good Advice for New Forth Programmers - Factoring

Posted by [Mark Bec kman](#) on June 18, 1999 at 12:20:20:

In Reply to: [Re: Good Advice for New Forth Programmers](#) posted by Neal Bridges
on June 18, 1999 at 00:45:06:

If you can find it I would recommend "Thinking Forth". Its not so much a book
about programming in Forth but a book about the programming philosophy of
Forth.

(my copy disappeared from my office years ago [*GRRRRRR*]).

The rule of thumb about when to factor I got from the book is this:
Describe what your word does.

If you need to use the (English) words "AND" or "OR" in the description it
should probably be factored into at least 2 words.

I've used this rule with some success with other programming languages as
well
as Forth.

Have Fun.

Mark

Restart Snippet

Posted by [E. Ross Helton](#) on June 17, 1999 at 17:32:29:

Hi Neal;

Just wanted to thank you for all your good work. Right now I especially want to thank you for the 'Restart' snippet. It works great in the two programs on which I am presently working.

Of course, it only does its best work in the executable program. In Quartus it just restarts Quartus. However in the compiled executable, it does a great job.

By the way, that contest which was mentioned earlier has a taker at PilotGear. I saw a program which is supposed to work on the Palm V.

Make it a good day!
Ross

Terminal i/o

Posted by [Bill Stein](#) on June 17, 1999 at 14:02:17:

I have just begun to get familiar with the Palm and Quartus. I fairly quickly found KEYZ so that I can use my desktop PC, cabled to the Palm to send characters to the Palm. This is the beginning of having a familiar i/o console to Forth. Has anyone considered having Quartus echo its output to the serial port so that with my terminal emulator I could see the output on the PC's terminal emulator window. (My age is showing, I find myself squinting at the Palm's small and dim screen.) Probably a heap of work, if not impossible if you wanted graphics.

Thanks

Bill

Re: Terminal i/o

Posted by [Neal Bridges](#) on June 17, 1999 at 15:23:07:

In Reply to: [Terminal i/o](#) posted by Bill Stein on June 17, 1999 at 14:02:17:

> I have just begun to get familiar with the Palm and Quartus. I fairly quickly
> found KEYZ so that I can use my desktop PC, cabled to the Palm to send
> characters to the Palm. This is the beginning of having a familiar i/o
console
> to Forth. Has anyone considered having Quartus echo its output to the
serial
> port so that with my terminal emulator I could see the output on the PC's
> terminal emulator window. (My age is showing, I find myself squinting at
the
> Palm's small and dim screen.) Probably a heap of work, if not impossible if
you
> wanted graphics.

It's not what you're asking for, but there are times I find working on the
emulator in double-size mode easier on my eyes, also.

Neal

Programing contest

Posted by [Mark Beckman](#) on June 17, 1999 at 09:23:06:

I received this announcement last night and half expected to see a new post
on
PalmPilot Gear HQ this morning written by Neal.
In any case I figured this would make a good demo of the speed of developing
under Quartus forth (actually the speed of Neal but nobody outside of this
community would know that).

News Title: Free PalmV TaleLight/Flashlight contest

Full Details at:

<http://www.palmpilotgear.com/news/shownews.cfm?resID=8324>

News Article: Win a PalmV SuperBright blue/white TaleLight/Flashlight
module by being one of the first three authors (only one TaleLight per
author) to post a freeware app or hack at Pilotgear HQ. The app should
turn on the PalmV and TaleLight (open the serial port) when pressing a
hardware button (contrast button would be best). email gmayhak@aol.com
to claim your PV TaleLight when you've posted the app.

Good Luck!

Gary

Re: Programing contest

Posted by [Neal Bridges](#) on June 17, 1999 at 09:56:09:

In Reply to: [Programing contest](#) posted by Mark Beckman on June 17, 1999 at 09:23:06:

> I received this announcement last night and half expected to see a new post on
> PalmPilot Gear HQ this morning written by Neal.
> In any case I figured this would make a good demo of the speed of developing
> under Quartus forth (actually the speed of Neal but nobody outside of this
> community would know that).

Thanks Mark. Truth is I have no use for a TaleLight/Flashlight module.

Neal

Re: Programing contest

Posted by [Mark Beckman](#) on June 17, 1999 at 11:54:38:

In Reply to: [Re: Programing contest](#) posted by Neal Bridges on June 17, 1999 at 09:56:09:

> Thanks Mark. Truth is I have no use for a TaleLight/Flashlight module. Actually I saw it as an opportunity to advertize. I didn't think you needed the Talelight because I don't remember you having a Palm V.

In the past I have noticed that you have responded to programing oportunities very quickly, StreakHack and the inverted backlight hack come to mind. The fact that those are in assembly and not Forth makes that quick response even more amazing.

Have Fun

Mark

Re: Programing contest

Posted by [Neal Bridges](#) on June 17, 1999 at 12:12:37:

In Reply to: [Re: Programing contest](#) posted by Mark Beckman on June 17, 1999 at 11:54:38:

> > Thanks Mark. Truth is I have no use for a TaleLight/Flashlight module.
> Actually I saw it as an opportunity to advertize. I didn't think you needed the
> Talelight because I don't remember you having a Palm V.

> In the past I have noticed that you have responded to programing oportunities
> very quickly, StreakHack and the inverted backlight hack come to mind. The
> fact that those are in assembly and not Forth makes that quick responce even
> more amazing.

I suspect my advantage comes of using Forth programming methodologies even when programming assembler. It's a powerful philosophy.

Neal

OOPS for Quartus?

Posted by [Dennis Misener](#) on June 17, 1999 at 09:08:19:

Anyone have a lead on a small but effective ANS compatible object oriented add-in for Quartus.

I was thinking of borrowing the FP-C version, but being basically lazy I thought it better to check before porting.

Re: OOPS for Quartus?

Posted by [Neal Bridges](#) on June 17, 1999 at 09:54:36:

In Reply to: [OOPS for Quartus?](#) posted by Dennis Misener on June 17, 1999 at 09:08:19:

> Anyone have a lead on a small but effective ANS compatible object oriented
> add-in for Quartus.

> I was thinking of borrowing the FP-C version, but being basically lazy I
> thought it better to check before porting.

Serg Koren asked me to look at an OO module for PocketForth -- I've done that,
and converted it. I'll post it soon. Don't know if it's what you want, but it
might be worth a look.

There are several others in existence. www.forth.org might be a good place to
start.

Neal

Re: OOPS for Quartus?

Posted by [Serg Koren](#) on June 17, 1999 at 10:40:43:

In Reply to: [Re: OOPS for Quartus?](#) posted by Neal Bridges on June 17, 1999 at
09:54:36:

> > Anyone have a lead on a small but effective ANS compatible object
oriented
> > add-in for Quartus.

> > I was thinking of borrowing the FP-C version, but being basically lazy I
> > thought it better to check before porting.

> Serg Koren asked me to look at an OO module for PocketForth -- I've done
that,
> and converted it. I'll post it soon. Don't know if it's what you want, but
it
> might be worth a look.

> There are several others in existence. www.forth.org might be a good place
to
> start.

> Neal

Hi Neal,

Gee, I wasn't expecting you to do it for me just take a look and see if it
was
do-able. Thank you. Oh well, now I'll have to find another project to work
on...I think I'll tackle a 3D graphics library...(no this one I'll write from
scratch.)

S

Graphics [was Re: OOPS for Quartus?]

Posted by [Carl Jacobsen](#) on June 18, 1999 at 13:49:41:

In Reply to: [Re: OOPS for Quartus?](#) posted by Serg Koren on June 17, 1999 at 10:40:43:

> Gee, I wasn't expecting you to do it for me just take a look and see if it was
> do-able. Thank you. Oh well, now I'll have to find another project to work
> on...I think I'll tackle a 3D graphics library...(no this one I'll write
from
> scratch.)

Oh cool! If you could get OpenGL ported, then maybe we could finally get Quake up and running!

What? Oh, okay, I'll shut up now,
-- Carl :-)

Re: 3DGraphics & shared libraries

Posted by [Serg Koren](#) on June 18, 1999 at 18:33:27:

In Reply to: [Graphics \[was Re: OOPS for Quartus?\]](#) posted by Carl Jacobsen on June 18, 1999 at 13:49:41:

> > Gee, I wasn't expecting you to do it for me just take a look and see if it was
> > do-able. Thank you. Oh well, now I'll have to find another project to work
> > on...I think I'll tackle a 3D graphics library...(no this one I'll write
from
> > scratch.)

> Oh cool! If you could get OpenGL ported, then maybe we could finally
> get Quake up and running!

> What? Oh, okay, I'll shut up now,
> -- Carl :-)

Um, no actually just a basic 3D set of functions to do simple things like orthogonal, perspective, hidden-line removal, and maybe bodies of rotation type stuff. I've written one in NSbasic (for WinCE) and porting it to Quartus should't be too difficult. I'm just waiting (and trying to figure out) for Neal and his team to come up with how to do shared libraries in Quartus, or

at

least how to encrypt source code, or maybe I'll break down and just make a shared library using Metrowerks, but then you'd still have the problem of how to call it from within Quartus.

S

Re: 3DGraphics & shared libraries

Posted by [Neal Bridges](#) on June 18, 1999 at 20:56:24:

In Reply to: [Re: 3DGraphics & shared libraries](#) posted by Serg Koren on June 18, 1999 at 18:33:27:

> > > Gee, I wasn't expecting you to do it for me just take a look and see if it

> was

> > > do-able. Thank you. Oh well, now I'll have to find another project to work

> > > on...I think I'll tackle a 3D graphics library...(no this one I'll write

> from

> > > scratch.)

> > Oh cool! If you could get OpenGL ported, then maybe we could finally get Quake up and running!

> > What? Oh, okay, I'll shut up now,

> > -- Carl :-)

> Um, no actually just a basic 3D set of functions to do simple things like orthogonal, perspective, hidden-line removal, and maybe bodies of rotation type

> stuff. I've written one in NSbasic (for WinCE) and porting it to Quartus should't be too difficult. I'm just waiting (and trying to figure out) for Neal and his team to come up with how to do shared libraries in Quartus, or at

> least how to encrypt source code, or maybe I'll break down and just make a shared library using Metrowerks, but then you'd still have the problem of how

> to call it from within Quartus.

Sounds promising, Serg. I suggest you proceed. Write the code in Forth; we'll find a way to distribute it. I don't actually have a team, but I'll see what my cat thinks :)

You can open shared libraries now -- witness the serial manager functions. With

Dennis I'm working to get a specific piece of code (actually a PRC wrapper for a shared library) running for which I don't have test hardware, which is slowing us up a bit, but the actual library part isn't the issue. (By the way, Dennis -- didn't hear back from you after the last msg. I sent -- how's it going)?

Neal

Shared libraries - still no joy

Posted by [Dennis Misener](#) on June 18, 1999 at 23:19:04:

In Reply to: [Re: 3DGraphics & shared libraries](#) posted by Neal Bridges on June 18, 1999 at 20:56:24:

I missed your last message... I sent the last one from the office and your reply ended up there. I was out today so didn't catch it until I caught up here in the forum.

I've made the requested changes... bottom line -- no joy. I've just emailed you the latest source and PRC files. Hope you can figure out what to try next.

I haven't have this level of grief with code for quite some time. The real problem is the lack of information. I can't identify which memory block the exception error is being generated from. It's almost like the Symbol runtime is mangling memory. The problem with that conjecture is that the same runtime is used by CASL with no ill effects.

I'm quite sure I've isolated QF's global area and the one used by DYSLIB C code (please double check me on this -- I don't have anyone who understands FORTH enough to do a walkthru -- even though the code is close to trivial).

Is there anyway I can get more information that the very non-informative exception message? The line number for the Palm OS source which is not supplied isn't a whole lot of help... argh.

I can't use the emulator with debug roms or the like since the scanner hardware would be a little hard to "fake". Anything else up your sleeve.

> Dennis I'm working to get a specific piece of code (actually a PRC
> wrapper for a shared library) running for which I don't have test hardware,
> which is slowing us up a bit, but the actual library part isn't the issue.
> (By the way, Dennis -- didn't hear back from you after the last msg.
> I sent -- how's it going)?

Re: Shared libraries - still no joy

Posted by [Neal Bridges](#) on June 19, 1999 at 00:18:58:

In Reply to: [Shared libraries - still no joy](#) posted by Dennis Misener on June 18, 1999 at 23:19:04:

> I can't use the emulator with debug roms or the like since the scanner
> hardware would be a little hard to "fake". Anything else up your sleeve.

I'm working with your code right now to see what's up; I've written you in email

. So far I'm able to call the dispatch code and be told I don't have a symbol device (error -2); no problem there, and no corruption. Anyway, all is in the email; I'll look for your response there and we'll take it forward.

Neal

Re: OOPS for Quartus?

Posted by [Neal Bridges](#) on June 17, 1999 at 11:41:04:

In Reply to: [Re: OOPS for Quartus?](#) posted by Serg Koren on June 17, 1999 at 10:40:43:

> Hi Neal,
> Gee, I wasn't expecting you to do it for me just take a look and see if it was
> do-able. Thank you. Oh well, now I'll have to find another project to work
> on...I think I'll tackle a 3D graphics library...(no this one I'll write
from
> scratch.)

In order to find out if it was do-able, I had to try and do it -- turned out not
to be too tough. There were a number of definitions of words that already exist
in Quartus Forth (but don't in PocketForth), and a few other things to change
(R
becomes I, for instance). After that, I had to add a ;m word to
end method definitions (the original code used ;).

Overall, not a tough port. How good an OO package it is, I can't say; I'll

post it shortly and you can try it for yourself.

Neal

Re: OOPS for Quartus?

Posted by [Neal Bridges](#) on June 17, 1999 at 12:14:04:

In Reply to: [Re: OOPS for Quartus?](#) posted by Neal Bridges on June 17, 1999 at 11:41:04:

> Overall, not a tough port. How good an OO package it is, I can't say; I'll
> post it shortly and you can try it for yourself.

And having so said, it's in the Quartus Forth File Area -- *oop.zip*.

Neal

- [File Area](#)

Re: OOPS for Quartus?

Posted by [Ingo Mathyl](#) on June 17, 1999 at 17:05:42:

In Reply to: [Re: OOPS for Quartus?](#) posted by Neal Bridges on June 17, 1999 at 12:14:04:

Hi,

here is a really nice "mini-oo" by Bernd Paysan.
It's ANS-Forth code and I use it in QUARTUS without
changes. It's only one screen and I find it very useful.

\ Mini-OOF 12apr98py

needs core-ext

```
: method ( m v -- m' v )  
Create over , swap cell+ swap  
DOES> ( ... o -- ... )  
@ over @ + @ execute ;
```

```
: var ( m v size -- m v' )  
Create over , +  
DOES> ( o -- addr ) @ + ;
```

```
: class ( class -- class methods vars )
```

```

dup 2@ ;

: end-class ( class methods vars -- )
create , dup , here >r
2 cells
?do ['] noop , 1 cells +loop
cell+ dup cell+ swap @
2 cells - r> swap move ;

: defines ( xt class -- )
' >body @ + ! ;

: new ( class -- o )
here >r dup @ allot r@ ! R> ;

: :: ( class "name" -- )
' >body @ + @ compile, ;
Create object 1 cells , 2 cells ,

```

\ oop-test -----

```

needs facility
needs mini-oof
needs zstrings

: cell 1 cells ;

object class
cell var x
cell var y
end-class position

position class
cell var text
cell var len
method init
method draw
end-class button

:noname ( &object --)
>r r@ x @ r@ y @ at-xy
r@ text @ r> len @ type ;
button defines draw

:noname ( x y addr u &object -- )
>r r@ len ! r@ text ! r@ y ! r> x !
; button defines init

button new constant button1
: mb s" my button" ;

page

5 5 mb button1 init

```

button1 draw

Re: OOPS for Quartus?

Posted by [Neal Bridges](#) on June 18, 1999 at 10:42:45:

In Reply to: [Re: OOPS for Quartus?](#) posted by Ingo Mathyl on June 17, 1999 at 17:05:42:

> Hi,
> here is a really nice "mini-ooop" by Bernd Paysan.
> It's ANS-Forth code and I use it in QUARTUS whitout
> changes. It's only one screen and I find it very usefull.

Thanks for posting that, Ingo. I didn't know anyone was using Bernd's code in production apps. What uses have you put it to?

Neal

Re: OOPS for Quartus?

Posted by E. Ross Helton on June 17, 1999 at 18:24:54:

In Reply to: [Re: OOPS for Quartus?](#) posted by Ingo Mathyl on June 17, 1999 at 17:05:42:

Hi Neal,

I guess I might as well jump in and ask. What is the OOPS supposed to do?
Does
it mean 'oops' I missed or forgot something? If that is true where and how in
the real world do we use it? Is it like 'Safe' which you got me started on?

Sorry to seem so out of it, but sometimes some things seem to be stated here
and
it is assumed everyone knows what is happening.

Don't want to be a pest, just looking for help!

make it a good day!

Ross

Re: OOPS for Quartus?

Posted by [Derek Bell](#) on June 26, 1999 at 17:39:33:

In Reply to: [Re: OOPS for Quartus?](#) posted by E. Ross Helton on June 17, 1999 at 18:24:54:

> I guess I might as well jump in and ask. What is the OOPS supposed to do?

It stands for Object Oriented Programming System. It means that data structures

are more closely linked to their subroutines (or methods) than in traditional structured programming - these objects can have new objects based on them.

For instance, you might be writing an air-traffic control simulation that has a

generic class for Aircraft, a class derived from it for Airliner, another for Helicopter, etc. Features that are common to different types of aircraft would

be in the Aircraft class, like position.

A lot of newer programming languages, like Java, use some form of OOP. (I suppose C++ isn't really a *new* language - it's been around in one form in another for 20 years.)

> Sorry to seem so out of it, but sometimes some things seem to be stated >here and it is assumed everyone knows what is happening.

No problem - I know the feeling, it's happened to me mostly offline!

Re: OOPS for Quartus?

Posted by [Neal Bridges](#) on June 17, 1999 at 22:01:57:

In Reply to: [Re: OOPS for Quartus?](#) posted by E. Ross Helton on June 17, 1999 at 18:24:54:

> I guess I might as well jump in and ask. What is the OOPS supposed to do? Does

> it mean 'oops' I missed or forgot something? If that is true where and how in

> the real world do we use it? Is it like 'Safe' which you got me started on?

> Sorry to seem so out of it, but sometimes some things seem to be stated here

and

> it is assumed everyone knows what is happening.

> Don't want to be a pest, just looking for help!

No problem. OOP is an acronym for Object Oriented Programming. If you've never heard of it, at its fundamentals it is a way to group data structures and subroutines to create 'object classes' -- these classes are then used to define sub-classes, etc. It's another way of looking at programming, sometimes useful.

Neal

Support of serial and infrared functions

Posted by [Gus Calabrese](#) on June 16, 1999 at 23:24:51:

I made a quick scan of the manual and did not see mention of support for serial communications or infrared communications. Does such support exist?

Thanks

Re: Support of serial and infrared functions

Posted by [Neal Bridges](#) on June 16, 1999 at 23:31:50:

In Reply to: [Support of serial and infrared functions](#) posted by Gus Calabrese on June 16, 1999 at 23:24:51:

> I made a quick scan of the manual and did not see mention of support for serial communications or infrared communications. Does such support exist?

Yes -- *serial.txt* is in the File Area. The IR works via the same hardware. I haven't done any work with IR myself, but I'll be happy to help if you've got a project in mind.

Neal

Re: Support of serial and infrared functions

Posted by [Jim Meaeows](#) on July 12, 1999 at 01:17:01:

In Reply to: [Re: Support of serial and infrared functions](#) posted by Neal Bridges on June 16, 1999 at 23:31:50:

Neal,

I am currently working on a project in which I would definitely like to use the IR interface. You mentioned it works with the same hardware as the serial port. What modifications/additions to serial.txt would I need to make?

Thank, Jim

Re: Support of serial and infrared functions

Posted by [Neal Bridges](#) on July 13, 1999 at 18:24:39:

In Reply to: [Re: Support of serial and infrared functions](#) posted by Jim Meaeows on July 12, 1999 at 01:17:01:

> Neal,

> I am currently working on a project in which I would definitely like to use the IR interface. You mentioned it works with the same hardware as the serial port. What modifications/additions to serial.txt would I need to make?

Bah! I totally missed this posting earlier. Sorry, Jim. Let me scare something up for you.

Neal

Re: Support of serial and infrared functions

Posted by [Gus Calabrese](#) on June 19, 1999 at 07:52:15:

In Reply to: [Re: Support of serial and infrared functions](#) posted by Neal Bridges on June 16, 1999 at 23:31:50:

> > I made a quick scan of the manual and did not see mention of support for serial communications or infrared communications. Does such support exist?

> Yes -- *serial.txt* is in the File Area. The IR works via the same
> hardware. I haven't done any work with IR myself, but I'll be happy to help
if
> you've got a project in mind.
> Neal

I will check it out. Thanks for the info. Gus

2nd time unlucky

Posted by [Dennis Misener](#) on June 16, 1999 at 21:10:11:

It has just been one of those days!

Any idea of what could account for the following scenario?

Reset Palm
Start Quartus
Load and Run Application (which does a bye)
Works just fine.

Reset Palm
Start Quartus
exit Quartus immediately (i.e. BYE)
Start Quartus
Load and Run Application
Dies during first (and only) ShowForm with a Fatal Error -- Fatal Exception.

There is no uninitialized data the best of my knowledge. I'm now stripping
the code down to the minimum reproducible case... Just hoping someone
knows of a common cause.

P.S. Neal I've suppressed all funny C linkage code in this one!
Just straight up high level Quartus code.

Re: 2nd time unlucky -- False alarm

Posted by [Dennis Misener](#) on June 16, 1999 at 21:52:07:

In Reply to: [2nd time unlucky](#) posted by Dennis Misener on June 16, 1999 at 21:10:11:

Reduction worked! Problem turned out to be a home-rolled string length function (search for trailing null flavor). I keep forgetting ALLOT doesn't zero memory?

Argh..

> It has just been one of those days!

> Any idea of what could account for the following scenario?

> Reset Palm

> Start Quartus

> Load and Run Application (which does a bye)

> Works just fine.

> Reset Palm

> Start Quartus

> exit Quartus immediately (i.e. BYE)

> Start Quartus

> Load and Run Application

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> P.S. Neal I've suppressed all funny C linkage code in this one!

> Just straight up high level Quartus code.

Re: 2nd time unlucky -- False alarm

Posted by [Dennis Misener](#) on June 16, 1999 at 21:51:59:

In Reply to: [2nd time unlucky](#) posted by Dennis Misener on June 16, 1999 at 21:10:11:

Reduction worked! Problem turned out to be a home-rolled string length function (search for trailing

null flavor). I keep forgetting ALLOT doesn't zero memory?

Argh..

> It has just been one of those days!

> Any idea of what could account for the following scenario?

> Reset Palm

> Start Quartus

> Load and Run Application (which does a bye)

> Works just fine.

> Reset Palm

> Start Quartus

> exit Quartus immediately (i.e. BYE)

> Start Quartus

> Load and Run Application

> Dies during first (and only) ShowForm with a Fatal Error -- Fatal Exception.

> Ther is no unitialized data the best of my knowledge. I'm now stripping
> the code down to the minimum reproducible case... Just hoping someone
> knows of a common cause.

> P.S. Neal I've suppressed all funny C linkage code in this one!

> Just straight up high level Quartus code.

Re: 2nd time unlucky -- False alarm

Posted by [Neal Bridges](#) on June 16, 1999 at 22:42:20:

In Reply to: [Re: 2nd time unlucky -- False alarm](#) posted by Dennis Misener on June 16, 1999 at 21:51:59:

> Reduction worked! Problem turned out to be a
> home-rolled string length function (search for trailing
> null flavor). I keep forgetting ALLOT doesn't zero memory?

> Argh..

Glad you got it sorted. Try 0allot, which does zero memory -- it's in *toolkit.txt*.

Neal

Shared Libraries -- any inspiration?

Posted by [Dennis Misener](#) on June 16, 1999 at 23:57:10:

In Reply to: [Re: 2nd time unlucky -- False alarm](#) posted by Neal Bridges on June 16, 1999 at 22:42:20:

Will do.

Any luck with the SPT1500 memory problem? Hate to nag... but people are starting to press me. I tried researching additional shared library information but there isn't a whole lot out there. I can find very little about the A5 global memory.

Would it be any help to substitute something other than a SPT1500 library for the dispatch for testing purposes. Whats out there that would cause the same problem which you could reproduce without the scanner hardware. Is memopad "dispatchable"?

With my current saving of Quartus context ... how much memory do I really have to save (starting at address pointed to by A5) so I can restore it to its pre-dispatch state (I tried 256 bytes to know avail -- The one in the manual does would seem to indicate 150 bytes).

Know any good sources of memory maps for the Palm? The API's are documented but internals are another matter.

It is definitely tied to the dispatch call. Bypassing the code results in a completely working program (Not very useful but working :-}).

> Glad you got it sorted. Try 0allot, which does zero memory --
> it's in toolkit.txt
> Neal

Re: Shared Libraries -- any inspiration?

Posted by [Neal Bridges](#) on June 17, 1999 at 01:00:34:

In Reply to: [Shared Libraries -- any inspiration?](#) posted by Dennis Misener on June 16, 1999 at 23:57:10:

> Any luck with the SPT1500 memory problem? Hate to nag... but people
> are starting to press me. I tried researching additional shared library

> information but there isn't a whole lot out there. I can find very little
> about the A5 global memory.

Sorry for the delay Dennis; given your requirements I'll take a look at it
this
morning and see what leaps out. I can't think of any simple way to simulate
your hardware, so I'll stick to desk-checking and see what I can see.

Neal

Re: Shared Libraries -- any inspiration?

Posted by [Neal Bridges](#) on June 17, 1999 at 01:15:16:

In Reply to: [Re: Shared Libraries -- any inspiration?](#) posted by Neal Bridges
on June 17, 1999 at 01:00:34:

> > Any luck with the SPT1500 memory problem? Hate to nag... but people
> > are starting to press me. I tried researching additional shared library
> > information but there isn't a whole lot out there. I can find very little
> > about the A5 global memory.

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> morning and see what leaps out. I can't think of any simple way to simulate
> your hardware, so I'll stick to desk-checking and see what I can see.

To this end, can you re-transmit to me (via mail) the latest compiled PRCs
and
sources? I want to see where you're at, as I have a mixture of trial and
older
sources here at present.

Neal

Re: Shared Libraries -- any inspiration?

Posted by [Dennis Misener](#) on June 17, 1999 at 09:06:40:

In Reply to: [Re: Shared Libraries -- any inspiration?](#) posted by Neal Bridges
on June 17, 1999 at 01:15:16:

Just emailed... Let me know if it doesn't show up.

Thanks again.

> To this end, can you re-transmit to me (via mail) the latest compiled PRCs
> and sources? I want to see where you're at, as I have a mixture of trial
and
> older sources here at present.
>
> Neal

@ bug on Palm IIIx?

Posted by [Philip Odom](#) on June 16, 1999 at 16:28:27:

This is my first foray into Forth, so I'm sorry if I could have found this answer elsewhere, or if the error is really my fault.

I get a fatal exception when I execute the following on my Palm IIIx using Quartus:

```
300 constant mult
' mult @ @ .
```

I think this should define a constant called mult with a value of three hundred, put it's address on the stack, replace the address with the value it points to (twice), and print the result (which should be 300). Am I doing something wrong?

This example comes verbatim from "A Beginning Forth Tutorial" which is at
.

Re: @ bug on Palm IIIx?

Posted by [Dennis Misener](#) on June 16, 1999 at 20:16:26:

In Reply to: [@ bug on Palm IIIx?](#) posted by Philip Odom on June 16, 1999 at 16:28:27:

' (aka tick) returns the execute address of the word under the newer ANSI compliant forths. Under the older forths "tick" used to return PFA (the parameter field address). Since the parameter field used to contain the constant... that's why the old code worked.

Good news. You'd never want to get the contents of a constant that way anyways ... just 'mult .' does the trick.

You might want to download the current forth standard. It is available on the resource page. Not as easy going as the tutorial but better than

nothing.

```
> I get a fatal exception when I execute the following on my Palm IIIx using
> Quartus:
> 300 constant mult
> ' mult @ @ .
> This example comes verbatim from "A Beginning Forth Tutorial" which is at
> .
```

Re: @ bug on Palm IIIx?

Posted by [Neal Bridges](#) on June 16, 1999 at 20:31:25:

In Reply to: [Re: @ bug on Palm IIIx?](#) posted by Dennis Misener on June 16, 1999 at 20:16:26:

```
> ' (aka tick) returns the execute address of the word under the newer
> ANSI compliant forths. Under the older forths "tick" used to return
> PFA (the parameter field address). Since the parameter field used to
> contain the constant... that's why the old code worked.
```

```
> Good news. You'd never want to get the contents of a constant that way
> anyways ... just 'mult .' does the trick.
```

Quite correct. The way CONSTANTS are handled in Quartus Forth is entirely more modern, employing optimized native-code that automatically inlines itself as a literal when compiled. You don't need to know any of that to use them of course -- but it does invalidate some of the examples in the older tutorials that are out there.

Curiously I've always found with those older materials that there's a near-obsession with the actual structure of the Forth words -- the headers, the threading method used, how literals are stored, etc. None of that information actually helps you develop in Forth, and certainly it changes from implementation to implementation. If you come across examples that want to teach you what looks like internals, skip ahead to the useful stuff. :)

Neal

Return stack unravelling?

Posted by [Dennis Misener](#) on June 16, 1999 at 21:00:06:

In Reply to: [Re: @ bug on Palm IIIX?](#) posted by Neal Bridges on June 16, 1999 at 20:31:25:

How do you exit from the calling routine from ANS forth?
You used to be able to 'R> EXIT' in the old days.

A real worlds case:

```
0 value scanner
: ExitIfNoScanner
scanner
0=
if
R> \ now deprecated
exit
then ;

: ScannerInit ( - )
ExitIfNoScanner
... ;

: ScannerRead ( - )
ExitIfNoScanner
...
```

The best I can come up with is:

```
: ExitIfNoScanner
postpone scanner
postpone 0=
postpone if
postpone exit
postpone then ;
immediate
```

Not quite as nice. Just wondering

```
> Curiously I've always found with those older materials that there's a
> near-obsession with the actual structure of the Forth words -- the headers,
> the threading method used, how literals are stored, etc. None of that
> information actually helps you develop in Forth, and certainly it changes
> from implementation to implementation. If you come across examples that
> want to teach you what looks like internals, skip ahead to the useful
> stuff. :)
>
> Neal
```

Re: Return stack unravelling?

Posted by [Neal Bridges](#) on June 16, 1999 at 21:09:34:

In Reply to: [Return stack unravelling?](#) posted by Dennis Misener on June 16, 1999 at 21:00:06:

> How do you exit from the calling routine from ANS forth?
> You used to be able to 'R> EXIT' in the old days.

> A real worlds case:

> 0 value scanner

> : ExitIfNoScanner

> scanner

> 0=

> if

> R> \ now deprecated

> exit

> then ;

> : ScannerInit (-)

> ExitIfNoScanner

> ... ;

> : ScannerRead (-)

> ExitIfNoScanner

> ...

> The best I can come up with is:

> : ExitIfNoScanner

> postpone scanner

> postpone 0=

> postpone if

> postpone exit

> postpone then ;

> immediate

>

> Not quite as nice. Just wondering

If you feel a strong urge to commit this act, you can use

R> R> 2DROP EXIT

(return addresses are 32-bits, or two cells).

Neal

DaVinci Forth

Posted by [Bob Wada](#) on June 16, 1999 at 13:14:29:

Neal, do you have an estimated release date for the beta DaVinci Forth ?

-- Bob

Re: DaVinci Forth

Posted by [Neal Bridges](#) on June 16, 1999 at 14:12:34:

In Reply to: [DaVinci Forth](#) posted by Bob Wada on June 16, 1999 at 13:14:29:

> Neal, do you have an estimated release date for
> the beta DaVinci Forth ?

Two weeks hence, I think.

Neal

Another platform

Posted by [Barry Marks](#) on June 17, 1999 at 12:35:42:

In Reply to: [Re: DaVinci Forth](#) posted by Neal Bridges on June 16, 1999 at 14:12:34:

> > Neal, do you have an estimated release date for
> > the beta DaVinci Forth ?

> Two weeks hence, I think.

I was just reading the HP48 newsgroup and this post made me realize that that might be an excellent platform for Quartus.

There are a lot of programs being written for it by users. Some are in User RPL which is the built in language. That's modelled after Forth and Lisp but

is very safe and therefore very slow.

A lot of programs are written in SysRPL which is the Forth-like language that User-RPL was written in. It's also in ROM but without the names and therefore a compiler is needed to change words to addresses. It's not interactive.

A lot (more than you would expect) are written in asm (usually called ML by hp48 users) and there are excellent tools for this, both onboard and external.

I suspect that an interactive Forth would quickly become popular. The users are already used to the stack and Forth-like programming but they have to give up the interactive quality to get any speed.

There is a new calc announced; the HP49 that the developers (they're on the newsgroup) claim will run all the older programs if they're recompiled, so it wouldn't go out of date soon.

The user base on the HP48 is much smaller than on the Palm, but a lot of the users already do at least a little bit of programming on the 48.

I have no idea that this would interest you or even be worthwhile but I thought I'd mention it.

Barry

Re: Another platform

Posted by [Neal Bridges](#) on June 17, 1999 at 15:25:19:

In Reply to: [Another platform](#) posted by Barry Marks on June 17, 1999 at 12:35:42:

> > > Neal, do you have an estimated release date for
> > > the beta DaVinci Forth ?

> > Two weeks hence, I think.

> I was just reading the HP48 newsgroup and this post made me realize that that
> might be an excellent platform for Quartus.

I like the HP series of gadgets. I'd be surprised if someone hasn't already done a Forth for it.

Neal

Re: Another platform

Posted by [Barry Marks](#) on June 18, 1999 at 22:51:52:

In Reply to: [Re: Another platform](#) posted by Neal Bridges on June 17, 1999 at 15:25:19:

> > I was just reading the HP48 newsgroup and this post made me realize that that
> > might be an excellent platform for Quartus.
> I like the HP series of gadgets. I'd be surprised if someone hasn't already
> done a Forth for it.

I don't really think there is one. I just searched the HP48 Software archive and didn't find one and that's a pretty complete collection. I've also been following the HP48 for years on comp.sys.hp48 and on Compuserve. I've never heard of a Forth for the HP48. If there is one it's pretty obscure.

Barry

- [HP48 Software Archive](#)

Re: Another platform

Posted by [Mark Woodworth](#) on June 22, 1999 at 00:03:09:

In Reply to: [Re: Another platform](#) posted by Barry Marks on June 18, 1999 at 22:51:52:

> > > I was just reading the HP48 newsgroup and this post made me realize that that
> that
> > > might be an excellent platform for Quartus.

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> > done a Forth for it.

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> and didn't find one and that's a pretty complete collection. I've also been
> following the HP48 for years on comp.sys.hp48 and on Compuserve. I've never
> heard of a Forth for the HP48. If there is one it's pretty obscure.

> Barry

Well, the native language in the HP48 is so forth-like that I'm not surprised that there isn't anything called Forth there. The stack is more like an object stack of pointers into the heap, but it's a threaded interpreter.

Mark

Re: Another platform

Posted by [Neal Bridges](#) on June 22, 1999 at 00:23:52:

In Reply to: [Re: Another platform](#) posted by Mark Woodworth on June 22, 1999 at 00:03:09:

> Well, the native language in the HP48 is so forth-like that I'm not
> surprised that there isn't anything called Forth there. The stack is
> more like an object stack of pointers into the heap, but it's a threaded
> interpreter.

Perhaps of interest is that while Quartus Forth is a Standard Forth system, it isn't a threaded interpreter under the hood -- it generates and executes native 68000 code.

Threaded Forth implementations are not the fastest choice any longer. While on some pipelined CPUs a direct or indirect threaded call is actually faster than a native-code call, when consider that native-code implementations allow inlining and optimization, native-code wins the speed race hands-down.

Neal

Re: Another platform

Posted by [Mark Woodworth](#) on June 23, 1999 at 14:28:13:

In Reply to: [Re: Another platform](#) posted by Neal Bridges on June 22, 1999 at 00:23:52:

I think I have overstepped my knowledge. I really don't know what the execution

model is in the HP48. What I meant to say is that the HP48 is a stack based language in which programming involves adding definitions to a dictionary of words in terms of earlier words. The outer interpreter threads definitions: I don't know what the inner interpreter does.

Mark

Re: Another platform

Posted by [Barry Marks](#) on June 23, 1999 at 22:22:19:

In Reply to: [Re: Another platform](#) posted by Mark Woodworth on June 23, 1999 at 14:28:13:

> I think I have overstepped my knowledge. I really don't know what the execution
> model is in the HP48. What I meant to say is that the HP48 is a stack based
> language in which programming involves adding definitions to a dictionary
> of
> words in terms of earlier words. The outer interpreter threads definitions:
> I
> don't know what the inner interpreter does.

The HP48 has a hidden language that uses a threaded interpreter. This language is usually called SysRPL to distinguish it from the user language (User RPL). User RPL is written in SysRPL and uses the same interpreter.

I'm not really sure how all this works. I've done a little asm programming on the 48 and I've had to avoid interfering with the interpreter and that's about all I really know about it.

Unlike Forth, User RPL guarantees that nothing the user does will cause a crash. He might get an error message but nothing worse. The result is that every word checks every parameter every time as to type and range.

Also unlike forth, most words are designed to handle a lot of different data types. All this slows the language down a lot.

Barry

Re: Another platform

Posted by [Neal Bridges](#) on June 23, 1999 at 18:58:25:

In Reply to: [Re: Another platform](#) posted by Mark Woodworth on June 23, 1999 at 14:28:13:

> I think I have overstepped my knowledge. I really don't know what the execution
> model is in the HP48. What I meant to say is that the HP48 is a stack based
> language in which programming involves adding definitions to a dictionary
> of
> words in terms of earlier words. The outer interpreter threads definitions:
I
> don't know what the inner interpreter does.

Sorry if I seemed to be calling you out; I'm not familiar with the internals
of
the HP48 either :) Your message brought to mind the difference between the
new
and old implementation models, and prompted me to post some comments thereon.

In the older, traditional-model Forths (either direct- or indirect-threaded),
the 'inner interpreter' reads lists of code-addresses and executes each in
turn.

In native-code Forths such as Quartus Forth, the CPU itself is the 'inner
interpreter'.

Neal

Re: Another platform

Posted by [Erwin Schomburg](#) on June 17, 1999 at 13:01:57:

In Reply to: [Another platform](#) posted by Barry Marks on June 17, 1999 at
12:35:42:

> > > Neal, do you have an estimated release date for
> > > the beta DaVinci Forth ?

> > Two weeks hence, I think.

> I was just reading the HP48 newsgroup and this post made me realize that
that
> might be an excellent platform for Quartus.

> There are a lot of programs being written for it by users. Some are in User
> RPL which is the built in language. That's modelled after Forth and Lisp
but

> is very safe and therefore very slow.

> A lot of programs are written in SysRPL which is the Forth-like language that
> User-RPL was written in. It's also in ROM but without the names and therefore
> a compiler is needed to change words to addresses. It's not interactive.

> A lot (more than you would expect) are written in asm (usually called ML by
> hp48 users) and there are excellent tools for this, both onboard and external.

> I suspect that an interactive Forth would quickly become popular. The users
> are already used to the stack and Forth-like programming but they have to give
> up the interactive quality to get any speed.

> There is a new calc announced; the HP49 that the developers (they're on the
> newsgroup) claim will run all the older programs if they're recompiled, so it
> wouldn't go out of date soon.

> The user base on the HP48 is much smaller than on the Palm, but a lot of the
> users already do at least a little bit of programming on the 48.

> I have no idea that this would interest you or even be worthwhile but I thought
> I'd mention it.

> Barry

All very nicely evaluated, but methinks the majority in here is all in for Neal
to go looking for other grazing grounds *after* completion of Quartus 2.x for
the Palm Computing Platform. 8-)

/Erwin

Re: Another platform

Posted by [Neal Bridges](#) on June 17, 1999 at 15:26:05:

In Reply to: [Re: Another platform](#) posted by Erwin Schomburg on June 17, 1999
at 13:01:57:

> All very nicely evaluated, but methinks the majority in here is all in for
Neal
> to go looking for other grazing grounds *after* completion of Quartus 2.x

for
> the Palm Computing Platform. 8-)

I'm grazing in a number of fields as we speak. :) Work proceeds apace.

Neal

Passing an array of strings...

Posted by [Steve Gibson](#) on June 16, 1999 at 09:21:58:

I want to implement a dynamic list where list items can be added/deleted. I need to be able to update this list appropriately whenever such an action is taken.

The PalmOS LstSetListChoices function wants a pointer to an array of strings as one of the parameters passed to it, but I'm not sure how this would be implemented in Quartus. Any help/ideas greatly appreciated :)

-Steve

Backup without Conduit?

Posted by [Dennis Misener](#) on June 15, 1999 at 13:38:16:

Scenario:

My application scans a bunch of barcodes into a palm PDB file.

I want this file to be hotsync'd to the PC. The standard backup conduit should do this if I can set the Backup attribute.

How to do this in C is documented in "Palm Programming -- The Developer's guide" as:

```
LocalID theLocalID;  
Uint theCardNum;  
Uint theAttributes;
```

```
DmOpenDatabaseInfo(myDB, &theLocalID, NULL, NULL, &theCardNum, NULL);  
DmDatabaseINFO(theCardNum, theLocalID, NULL, &theAttributes, NULL,  
NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL);  
theAttributes |= dmHdrAttrBackup;  
DmSetDatabaseInfo(theCardNum, theLocalID, NULL, &theAttributes, NULL,  
NULL, NULL, NULL, NULL, NULL, NULL, NULL, NULL);
```

The same source also indicates that the backup bit ISN'T reset automatically after a backup.

Question:

How can I automatically delete the PDB and start storing a new batch of barcodes after a successful hotsync.

I really don't think I am upto conduit writing and I don't trust the clients to not delete the scanned barcodes before they are uploaded.

Any suggestions would be appreciated.

Re: Backup without Conduit?

Posted by [Neal Bridges](#) on June 15, 1999 at 14:11:22:

In Reply to: [Backup without Conduit?](#) posted by Dennis Misener on June 15, 1999 at 13:38:16:

> Question:

> How can I automatically delete the PDB and start storing a new
> batch of barcodes after a successful hotsync.

One of the items returned by DmDatabaseInfo is the timestamp of the last backup.

Check that against the current time, and delete accordingly.

Neal

Re: Backup without Conduit?

Posted by [Dennis Misener](#) on June 15, 1999 at 15:06:34:

In Reply to: [Re: Backup without Conduit?](#) posted by Neal Bridges on June 15, 1999 at 14:11:22:

Thanks... you are a lifesaver?

Any luck with the Quartus memory corruption problem I am having? I added the catch/throw and now when I switch away from the application it dies in the (bye) code now. My guess is the process

termination triggers the memory manager to cleanup and its unhappy about something. But since I don't allocate any memory at run time (that I know of) ... I don't know where to look.

Is my code for preserving/restoring the context area OK? If so then I would have thought Quartus would have been immuned from the dispatch handling code. Everything seems to work I have no way to exit the program!!

Kind of tacky to put up an alert screen which says:

Now Please reset Palm Pilot.
Place device screen side done
and insert paperclip into small
aperture labeled reset.

: -).

I've tried COLD/(BYE)/Restart (from the snippet library)... no backdoor out that works!!

> > Question:

> > How can I automatically delete the PDB and start storing a new
> > batch of barcodes after a successful hotsync.

> One of the items returned by DmDatabaseInfo is the timestamp of the last
> backup. Check that against the current time, and delete accordingly.

> Neal

Re: Backup without Conduit?

Posted by [Neal Bridges](#) on June 15, 1999 at 15:56:05:

In Reply to: [Re: Backup without Conduit?](#) posted by Dennis Misener on June 15, 1999 at 15:06:34:

> Is my code for preserving/restoring the context area OK?
> If so then I would have thought Quartus would have been
> immuned from the dispatch handling code. Everything seems
> to work I have no way to exit the program!!

I believe your code is allowing the beginning of the A5 segment to become corrupted, which will make the Palm OS cough up a hairball when it tries to close down the application. Still looking.

Neal

Make form come back

Posted by [E. Ross Helton](#) on June 15, 1999 at 13:00:59:

Hi Neal;

Have a program that I need to make the form regenerate in. What happens is that I have a simple form with three buttons at the bottom. The main part of the screen takes a text output. This works fine for the first iteration, but when I push one of the button the next lines over take the previous and sometimes jam up the top of the form.

I tried using 'page' and then 'ShowMain'(this the word for making my form show) what happens is that the screen clears, but the form doesn't come back. I can tap where the buttons are supposed to be and they work.

What am I doing wrong?

Make it a good day!

Ross

Re: Make form come back

Posted by [Neal Bridges](#) on June 15, 1999 at 14:07:03:

In Reply to: [Make form come back](#) posted by E. Ross Helton on June 15, 1999 at 13:00:59:

> Have a program that I need to make the form regenerate in. What happens is that
> I have a simple form with three buttons at the bottom. The main part of the
> screen takes a text output. This works fine for the first iteration, but
when
I
> push one of the button the next lines over take the previous and sometimes
jam
> up the top of the form.

> I tried using 'page' and then 'ShowMain'(this the word for making my form
show)
> what happens is that the screen clears, but the form doesn't come back. I
can

> tap where the buttons are supposed to be and they work.

> What am I doing wrong?

Put the code in my hands and I'll give you a diagnosis.

Neal

Re: Make form come back

Posted by [Erwin Schomburg](#) on June 15, 1999 at 13:42:29:

In Reply to: [Make form come back](#) posted by E. Ross Helton on June 15, 1999 at 13:00:59:

> Hi Neal;

> Have a program that I need to make the form regenerate in. What happens is that

> I have a simple form with three buttons at the bottom. The main part of the screen takes a text output. This works fine for the first iteration, but when

I

> push one of the button the next lines over take the previous and sometimes jam

> up the top of the form.

> I tried using 'page' and then 'ShowMain'(this the word for making my form show)

> what happens is that the screen clears, but the form doesn't come back. I can

> tap where the buttons are supposed to be and they work.

> What am I doing wrong?

> Make it a good day!

> Ross

Calling the wrong form I suppose. Use nnnn ShowForm (maybe from inside your ShowMain) to redraw an entire form, but take extreme care that nnnn really **is**

the id of the form you want.

/vanity mode

See various samples, not least my Quintominoes,

/vanity mode off

where forms including controls are frequently redrawn without losing title or

control buttons on the way.

May the Forth be with you!

/Erwin

/Erwin

Re: Make form come back

Posted by Erwin on June 15, 1999 at 13:51:56:

In Reply to: [Re: Make form come back](#) posted by Erwin Schomburg on June 15, 1999 at 13:42:29:

> > Hi Neal;

> > Have a program that I need to make the form regenerate in. What happens is
> that

> > I have a simple form with three buttons at the bottom. The main part of the
> > screen takes a text output. This works fine for the first iteration, but when

> I

> > push one of the button the next lines over take the previous and sometimes

jam

> > up the top of the form.

> > I tried using 'page' and then 'ShowMain'(this the word for making my form
> show)

> > what happens is that the screen clears, but the form doesn't come back. I can

> > tap where the buttons are supposed to be and they work.

> > What am I doing wrong?

> > Make it a good day!

> > Ross

> Calling the wrong form I suppose. Use nnnn ShowForm (maybe from inside your
> ShowMain) to redraw an entire form, but take extreme care that nnnn really
is

> the id of the form you want.

> /vanity mode

> See various samples, not least my Quintominoes,

> /vanity mode off

> where forms including controls are frequently redrawn without loosing title
or

> control buttons on the way.

> May the Forth be with you!

> /Erwin

OOps, I think ShowMain is inherent in the Kernel and brings up the (blank) default form, not one you specified. So I suppose you do not use a ShowMain you wrote/specified yourself? In that case disregard the "inside your ShowMain" above.

/Erwin

Re: Make form come back

Posted by [E. Ross Helton](#) on June 17, 1999 at 15:40:44:

In Reply to: [Re: Make form come back](#) posted by Erwin on June 15, 1999 at 13:51:56:

Hi Erwin;

You were correct about ShowMain. It does give a blank form, but what you said worked by having another name which is ShowForm. It did the trick. 1001 ShowForm.

The screen blanks and returns with the form as it should be and the new information which I wanted there

> OOps, I think ShowMain is inherent in the Kernel and brings up the (blank) default form, not one you specified. So I suppose you do not use a ShowMain you wrote/specified yourself? In that case disregard the "inside your ShowMain" above.

You are just too darn good for your own sake.

Thanks for the help. I had tried the ShowForm by itself, but I needed the nnnn to do the job.

Again thanks. I know that Neal wouldn't have given me the same, but we've really bogged him down.

Make it a good day!

Ross

Re: Make form come back

Posted by [Neal Bridges](#) on June 17, 1999 at 15:52:52:

In Reply to: [Re: Make form come back](#) posted by E. Ross Helton on June 17, 1999 at 15:40:44:

> Again thanks. I know that Neal wouldn't have given me the same, but we've
> really bogged him down.

I hope you mean I *would* have given you the same :) I saw that Erwin had stepped up, and I agreed with his advice, so it was more a matter of waiting to see how that panned out before chiming in. I'm never to bogged down to help out.

Glad it worked out!

Neal

Re: Make form come back

Posted by [E. Ross Helton](#) on June 17, 1999 at 18:29:55:

In Reply to: [Re: Make form come back](#) posted by Neal Bridges on June 17, 1999 at 15:52:52:

Hi Neal;

Red faced and humble pie are in order. Do you have some really tough grunt work that should take me centuries to finish? If you do, I desire to have it handed to me, for now watching my writing.

If you will make a list I will be there to get the work done!

Of course you would have given me that advise and probably more!

Anyway thanks to all who have helped?

> > Again thanks. I know that Neal wouldn't have given me the same, but we've
> > really bogged him down.

> I hope you mean I *would* have given you the same :) I saw that Erwin had
> stepped up, and I agreed with his advice, so it was more a matter of waiting

to
> see how that panned out before chiming in. I'm never to bogged down to help
> out.

Will have to frame this one to remind me that time isn't always on my side.
make it a good day!
Ross

Re: Make form come back

Posted by [Neal Bridges](#) on June 17, 1999 at 22:03:13:

In Reply to: [Re: Make form come back](#) posted by E. Ross Helton on June 17, 1999 at 18:29:55:

> Red faced and humble pie are in order. Do you have some really tough grunt
work
> that should take me centuries to finish? If you do, I desire to have it
handed
> to me, for now watching my writing.

Don't sweat the small stuff -- I knew it was a typo. :)

Neal

Re: Make form come back

Posted by [E. Ross Helton](#) on June 19, 1999 at 19:21:24:

In Reply to: [Re: Make form come back](#) posted by Neal Bridges on June 17, 1999 at 22:03:13:

Hi Neal;

That's gud, acause it's only the second mytake I be making. Good to node I ain't tutally purfect. Isn't it?

Make it a good day!

Ross

> Don't sweat the small stuff -- I knew it was a typo. :)

> Neal

RsrcEdit

Posted by [Carl Jacobsen](#) on June 15, 1999 at 02:07:47:

Hope I'm not stealing Roger's thunder, but I just visited PilotGear before turning in for the night, and noticed that RsrcEdit has shown up as a new \$15 shareware item. I'd have paid on the spot, but they don't have a "buy" button hooked up to it yet...

Gee, I suppose one of you East Coast people (heck, or somebody in Europe) will get there before me in the morning, and I won't get to be the very first :-)

-- Carl

- [RsrcEdit at PilotGear](#)

Re: RsrcEdit

Posted by [Erwin Schomburg](#) on June 15, 1999 at 03:58:22:

In Reply to: [RsrcEdit](#) posted by Carl Jacobsen on June 15, 1999 at 02:07:47:

> Hope I'm not stealing Roger's thunder, but I just visited PilotGear
> before turning in for the night, and noticed that RsrcEdit has shown
> up as a new \$15 shareware item. I'd have paid on the spot, but they
> don't have a "buy" button hooked up to it yet...

> Gee, I suppose one of you East Coast people (heck, or somebody in
> Europe) will get there before me in the morning, and I won't get to
> be the very first :-)

> -- Carl

Roger does not seem to be the greedy type, he has posted update notes, including

1.001 announcement, in here on a regular basis. I think anyone in here who indicated some seriousness in on-board software design by giving Neal his shareware fee is also bound to reward Roger once the payment link is up.

/Erwin

BTW: Just realized that OnBoardC is back alive.

Re: RsrcEdit

Posted by Erwin on June 15, 1999 at 14:00:39:

In Reply to: [Re: RsrcEdit](#) posted by Erwin Schomburg on June 15, 1999 at 03:58:22:

> > Hope I'm not stealing Roger's thunder, but I just visited PilotGear
> > before turning in for the night, and noticed that RsrcEdit has shown
> > up as a new \$15 shareware item. I'd have paid on the spot, but they
> > don't have a "buy" button hooked up to it yet...

> > Gee, I suppose one of you East Coast people (heck, or somebody in
> > Europe) will get there before me in the morning, and I won't get to
> > be the very first :-)

> > -- Carl

> Roger does not seem to be the greedy type, he has posted update notes,
including

> 1.001 announcement, in here on a regular basis. I think anyone in here who
> indicated some seriousness in on-board software design by giving Neal his
> shareware fee is also bound to reward Roger once the payment link is up.

> /Erwin

> BTW: Just realized that OnBoardC is back alive.

Follow up: Payment button now present on RsrcEdit announcement at PilotGear.
Paid

and preparing for a good nights sleep with a clear conscience 8-).

/Erwin

Re: RsrcEdit

Posted by [Ron Doerfler](#) on June 15, 1999 at 03:49:08:

In Reply to: [RsrcEdit](#) posted by Carl Jacobsen on June 15, 1999 at 02:07:47:

> Hope I'm not stealing Roger's thunder, but I just visited PilotGear
> before turning in for the night, and noticed that RsrcEdit has shown
> up as a new \$15 shareware item. I'd have paid on the spot, but they
> don't have a "buy" button hooked up to it yet...

I'm calling as soon as they do--RsrcEdit has been a
wonderful tool for me, and I'm happy to support it.

Ron

Thanks for the Hints & Helps!

Posted by [Bob Cunningham](#) on June 14, 1999 at 19:45:45:

The recent posts of debugging words and stack words are a HUGE help. Thanks!

Anyone who has any more helpers like this, information or code, PLEASE share them! And Neal, can they be added to the Snippets collection?

I'm finding the expertise I need the most is the stuff many Forth programmers take for granted. Quick reminders of Forth syntax and snippets of useful, helpful, instructive or blow-me-away code are enormously helpful.

I sometimes feel the syntax and environment of Forth is a swarm of buzzing flies I must wade through to get any work done. Hints and helps make wonderful flyswatters!

Thanks,

-BobC

Re: Thanks for the Hints & Helps!

Posted by [E. Ross Helton](#) on June 14, 1999 at 20:46:35:

In Reply to: [Thanks for the Hints & Helps!](#) posted by Bob Cunningham on June 14, 1999 at 19:45:45:

Hi Bob;

I understand how you feel about the Forth enviroment. However, I feel sometimes like I am on foot in the midst of a charging herd of cattle. Sometimes I get run over in the process, however this board helps to get most things straightened out thanks to Neal and the others here.

Make it a good day!

Ross

```
> I sometimes feel the syntax and environment of Forth is a swarm of buzzing
> flies I must wade through to get any work done. Hints and helps make
wonderful
> flyswatters!

> Thanks,

> -BobC
```

Stack operators cheat sheet

Posted by [Carl Jacobsen](#) on June 14, 1999 at 18:10:29:

I've been carrying this memo around for a while, and have found it much more handy sometimes than diving into the Standard, when I just want to make sure I'm using the best stack operators for the job. Thought some of you might find it useful, too.

(The tabs look a little funny here, but should line up nicely on the Pilot. Er, I suppose, though, that copying it out may involve cut'n'paste from the followup window, followed by eliding all the "> "'s. Isn't html fun? Ah well, maybe I'll add a URL to pick it up in an unadulterated form.)

Stack Operator Words - 99.6.14

```
                [ CORE wordset ]
DROP      ( 1 -- )
DUP       ( 1 -- 1 1 )
?DUP     ( 1 -- 1 | 1 1 ) \ dup if <>0
SWAP     ( 1 2 -- 2 1 )
OVER     ( 1 2 -- 1 2 1 )
ROT      ( 1 2 3 -- 2 3 1 )
2DROP    ( 1 2 -- )
2DUP     ( 1 2 -- 1 2 1 2 )
2SWAP    ( 1 2 3 4 -- 3 4 1 2 )
2OVER    ( 1 2 3 4 -- 1 2 3 4 1 2 )

                [ CORE-EXT wordset ]
NIP      ( 1 2 -- 2 )
TUCK     ( 1 2 -- 2 1 2 )
ROLL     ( 0 1..n N -- 1..n 0 )
PICK     ( u...1 0 U -- u...1 0 u )

                [ DOUBLE-EXT wordset ]
2ROT     ( 1 2 3 4 5 6 -- 3 4 5 6 1 2 )

                [ derived, showing doubles ]
ROT      ( 1 22. -- 22. 1 )
```

```
ROT ROT ( 11. 2 -- 2 11. )
2DROP  ( 11. -- )
2DUP   ( 11. -- 11. 11. )
2SWAP  ( 11. 22. -- 22. 11. )
2OVER  ( 11. 22. -- 11. 22. 11. )
2ROT   ( 11. 22. 33. -- 22. 33. 11. )
```

-- Carl

- [Stack Operator Words](#)

Catch/Throw

Posted by [Dennis Misener](#) on June 14, 1999 at 16:30:29:

Where are these documented?

I see sample applications using them.

I tried a "site search" but it seems to be hanging today.

Re: Catch/Throw

Posted by [Neal Bridges](#) on June 14, 1999 at 16:57:00:

In Reply to: [Catch/Throw](#) posted by Dennis Misener on June 14, 1999 at 16:30:29:

> Where are these documented?

> I see sample applications using them.

> I tried a "site search" but it seems to be hanging today.

Probably it's just slow.

They're documented in the Standard, but of course as always I'm happy to answer

any questions you might have. There's an example in the Quartus Forth manual showing how to CATCH a ByeThrow.

Neal

a debugging word

Posted by [Jim Deakin](#) on June 14, 1999 at 06:24:14:

If anyone else has the same problems that I do, making reality match their stack diagrams, they might find the word below useful. It overloads the (word so that in words compiled while debug is true, it will print out whatever is in the brackets, and follow it with a stack printout, and a pause. Since much of forth comment is stack diagrams, it can show what you think is there, and follow it with what is actually there. It's not as good as a single step mode, but it's better than nothing.

Hope someone else likes it.

Jim

```
-----  
needs facility ( for key? )  
  
: pause ( -- )  
begin  
key?  
until key drop ;  
  
variable debug 0 debug !  
  
\ redefine '('  
: (  
debug @ if  
\ compile-time: ( ")" -- )  
\ run-time: print cr stack-contents, then pause.  
[char] ) parse  
postpone sliteral  
postpone type  
postpone cr  
postpone .s  
postpone pause  
else  
\ compile-time: ( ")" -- )  
\ run-time:  
postpone (  
then  
; immediate
```

Re: a debugging word

Posted by [Jim Deaki](#) on June 14, 1999 at 10:39:46:

In Reply to: [a debugging word](#) posted by Jim Deakin on June 14, 1999 at 06:24:14:

I just examined my note, and noticed that the word 'text' surrounded by angle-brackets didn't show in the note (though it does in the follow-up screen).

Just to clarify the comments, I'll try it again.

```
: pause ( -- )
begin
key?
until key drop ;

variable debug 0 debug !

\ redefine '('
: (
debug @ if
\ compile-time: ( "text" )" -- )
\ run-time: print "text" cr stack-contents, then pause.
[char] ) parse
postpone sliteral
postpone type
postpone cr
postpone .s
postpone pause
else
\ compile-time: ( "text" )" -- )
\ run-time:
postpone (
then
; immediate
```



Re: a debugging word

Posted by [Neal Bridges](#) on June 14, 1999 at 10:21:55:

In Reply to: [a debugging word](#) posted by Jim Deakin on June 14, 1999 at 06:24:14:

```
> If anyone else has the same problems that I do, making reality match their
> stack diagrams, they might find the word below useful. It overloads the (
word
> so that in words compiled while debug is true, it will print out whatever
> is in the brackets, and follow it with a stack printout, and a pause. Since
> much of forth comment is stack diagrams, it can show what you think is
there,
> and follow it with what is actually there. It's not as good as a single
step
> mode, but it's better than nothing.
```

Neat code, Jim. Thanks. For my part, the trick to not needing single-step is to keep my definitions short and well-factored. Your code looks handy for those times when I don't quite meet that goal. :)

Neal

Symbol scanning redux

Posted by [Dennis Misener](#) on June 14, 1999 at 00:23:16:

```
...
> >I think CASL played with the A5 so that it ended up being the CASL stack
> >pointer... that way the result was placed on the CASL parameter
> >stack and was therefore available as a subroutine return (floating point
> >for them). I don't think this works for Quartus... so I've passed A5 as
> >a parameter (checked it and it is correctly being passed and set in the
> SetSysA5).
>
> We could do that, but I don't see much point -- the results can be
> retrieved from the params block.
>
> new_a5 = *((long *) cmdPBP);
>
> so that it is
>
> new_a5 = (long *) cmdPBP;
```

The revised dispatch code looks like

```
DWord PilotMain(Word cmd, Ptr cmdPBP, Word launchFlags){
long original_a5;
long new_a5;

// cmd=Q4th_EXTERNAL_FUNC_BASE_LAUNCH_CODE;
if (cmd return(0);
}else{
// new_a5 = *((long *) cmdPBP); // previous "almost working" version
new_a5 = (long) cmdPBP; // as suggested
original_a5 = SysSetA5(new_a5);
cmd-=Q4th_EXTERNAL_FUNC_BASE_LAUNCH_CODE;
switch (cmd){
case 0:
SPT1500_setup(cmdPBP);
break;
case 1:
SPT1500_shutdown(cmdPBP);
break;
case 2:
SPT1500_event(cmdPBP);
break;
}
}
original_a5=SysSetA5(original_a5); // as suggested
return(0);
}
```

The suggested change results in the following fatal error:

```
MemoryMgrNew.c,
Line 3970, invalid handle

(reset)
```

Setting A5 at the params as passed by cmdPBP doesn't seem to be the answer.

```
> and then the results will be written directly into the params
> area. Having
> done that, you'll need to add additional C code that sets A5 back to
> original_a5, at the end of the dispatch.
>
> If you do as you had before, using getA5 in Quartus Forth, you'll be
> passing the value of A5 into the dispatcher without any problem, but any
> results will be written to the very start of the Quartus Forth globals
> area, which is a bad idea.
```

You seem to be right. The actual interface with the old way (using the Quartus A5) actual results in working calls (i.e. I can actually get scan results back!!). But subsequent quartus code (expecially the exit or

menu processing code code get very unhappy and locks up).

BTW I haven't stop working on this... but once I got to the point where I could actually read barcodes... I move along to the rest of the program. Now I've come to the point where I must address the dispatch glitch [I'd hate to have user instructions which state reset the Palm when you've completed scanning your inventory :-)]

Re: Symbol scanning redux

Posted by [Neal Bridges](#) on June 14, 1999 at 00:38:05:

In Reply to: [Symbol scanning redux](#) posted by Dennis Misener on June 14, 1999 at 00:23:16:

> BTW I haven't stop working on this... but once I got to the point
> where I could actually read barcodes... I move along to the rest of
> the program. Now I've come to the point where I must address the
> dispatch glitch [I'd hate to have user instructions which state
> reset the Palm when you've completed scanning your inventory :-)]

Hi Dennis. Thought I responded to this in email, but no matter.

I'd like to have you try to ALLOCATE a new block (using *memory.txt*), and then use that as your cmdPBP -- and use that cmdPBP as the A5 segment; save the original A5 first, point it to the cmdPBP, and put the original back at the end. In that way you should be able to avoid the 'invalid handle' message. Give it a try -- if it works I think we're on top of it.

Neal

Re: Symbol scanning redux

Posted by [Dennis Misener](#) on June 14, 1999 at 01:39:32:

In Reply to: [Re: Symbol scanning redux](#) posted by Neal Bridges on June 14, 1999 at 00:38:05:

> Hi Dennis. Thought I responded to this in email, but no matter.

I just checked and there was nothing pending. Perhaps my mail

server is down. I stick to the forum until I know otherwise. My ISP doesn't keep late hours.

```
> I'd like to have you try to ALLOCATE a new block (using memory.txt),
> and then use that as your cmdPBP -- and use that cmdPBP as the A5 segment;
> save the original A5 first, point it to the cmdPBP, and put the original
back
> at the end. In that way you should be able to avoid the 'invalid handle'
> message.

> Give it a try -- if it works I think we're on top of it.
```

So ALLOCATE returns a 16 bit address and an error indicator?

I've replaced 'params' definition as follows and am using the DySlib version which extracts the 'replacement A5' as the first parameter in the PBP.

Looks like:

```
\ scanCtr

needs double
needs asm68K
needs memory
needs registers
needs zStrings

variable cardNo
2variable dbID

hex
9000 constant launchOpen
9001 constant launchClose
9002 constant launchScan
decimal

code getA5
] dup [
0004 sp -) .l movem>
] drop [
end-code

: appName z" DySlib" ;

: UseCard cardNo ! ;
0 UseCard

variable params
100 allocate
drop ( error indicator )
params !

: params params @ ;
```

```
2variable result
2variable oldA5

: saveContext
getA5 oldA5 2!
params >abs params 2! ;

: restoreContext
\ Just a sanity check
getA5 oldA5 2@ D=
if \ a5 not preserved
." a5 not preserved " cr
then ;

: invoke \ appName service - err
( service ) >r

\ Get dbID for Application
( appName ) drop >abs
cardNo @ DmFindDatabase
dbID 2!

\ Perform Dispatch
saveContext
result >abs \ &resultP
params >abs \ &cmdPBP
r> \ launchcode
0 \ cmdLaunchFlags
dbID 2@ \ dbID
cardNo @ \ cardNo
SysAppLaunch \ -> Err
restoreContext ;

: scanOpen
appName launchOpen invoke
drop ;

: scanClose
appName launchClose invoke ;

: scanRead
appName launchScan invoke ;
```

I still get MemoryMgrNew.c, Line 3970, invalid handle message.

Re: Symbol scanning redux

Posted by [Neal Bridges](#) on June 14, 1999 at 10:19:38:

In Reply to: [Re: Symbol scanning redux](#) posted by Dennis Misener on June 14, 1999 at 01:39:32:

> > I'd like to have you try to ALLOCATE a new block (using
memory.txt),
> > and then use that as your cmdPBP -- and use that cmdPBP as the A5
segment;
> > save the original A5 first, point it to the cmdPBP, and put the original
back
> > at the end. In that way you should be able to avoid the 'invalid handle'
> > message.

> So ALLOCATE returns a 16 bit address and an error indicator?

Correct -- my error. You need to use the mechanism ALLOCATE uses --
MemHandleNew.

> I've replaced 'params' definition as follows and am using the DySlib
> version which extracts the 'replacement A5' as the first parameter
> in the PBP.

It's tough for me to tell what's happening in your code without a Symbol
device

to test on. I believe this is happening:

You're passing in the Quartus Forth A5, and the Symbol code is using that as
its
data segment -- sounds good, except the disassembly of the Symbol code shows
that it writes directly to the first few bytes of the A5 segment, which will
corrupt Quartus Forth's memory segment, giving you errors at least when you
try
to exit Quartus Forth.

When you pass in the absolute address of the cmdPBP as the new A5 value for
the
library, I'm guessing the target code is expecting that A5 value to be
pointing
to the start of a memory region created by MemHandleNew, which of course your
cmdPBP, which is merely a place in data space, isn't.

If you use MemHandleNew to create a new region, and then get your target
library
code to use that as its A5 segment, it may work.

Neal

Re: Symbol scanning redux

Posted by [Dennis Misener](#) on June 14, 1999 at 16:25:42:

In Reply to: [Re: Symbol scanning redux](#) posted by Neal Bridges on June 14, 1999 at 10:19:38:

```
> It's tough for me to tell what's happening in your code without a Symbol
> device to test on. I believe this is happening:
>
> You're passing in the Quartus Forth A5, and the Symbol code is using that
as
> its data segment -- sounds good, except the disassembly of the Symbol code
> shows that it writes directly to the first few bytes of the A5 segment,
which
> will corrupt Quartus Forth's memory segment, giving you errors at least
when
> you try to exit Quartus Forth.
```

Then why wouldn't the following trick work? I've already tried and no joy. Still dies when I try to exist or do menu processing

```
\ scanCtr

code getA5
] dup [
0004 sp -) .l movem>
] drop [
end-code

variable cardNo
2variable dbID

hex
9000 constant launchOpen
9001 constant launchClose
9002 constant launchScan
decimal

: appName z" DySLib" ;

: UseCard cardNo ! ;
0 UseCard

create params 100 chars allot
create context 256 chars allot
2variable result
2variable oldA5

: showContext
page
100 0 do
```

```
getA5 i M+ c@a u.
loop
wait ;

: saveContext
getA5 oldA5 2!
getA5 params 2!
256 0 do
getA5 i M+ c@a
context i + c!
loop ;

: restoreContext
256 0 do
context i + c@
getA5 i M+ c!a
loop ;

: invoke \ appName service - err
( service ) >r

\ Get dbID for Application
( appName ) drop >abs
cardNo @ DmFindDatabase
dbID 2!

\ Perform Dispatch
saveContext
result >abs \ &resultP
params >abs \ &cmdPBP
r> \ launchcode
0 \ cmdLaunchFlags
dbID 2@ \ dbID
cardNo @ \ cardNo
SysAppLaunch
drop \ error
restoreContext ;

: scanOpen
appName launchOpen invoke
drop ;

: scanClose
appName launchClose invoke ;

: scanRead
appName launchScan invoke ;
```

Re: Symbol scanning redux

Posted by [Neal Bridges](#) on June 14, 1999 at 16:56:07:

In Reply to: [Re: Symbol scanning redux](#) posted by Dennis Misener on June 14, 1999 at 16:25:42:

> Then why wouldn't the following trick work? I've already tried and
> no joy. Still dies when I try to exist or do menu processing

I'll go over your code and see if I can tell, but if you use Quartus Forth's
A5

and let the Symbol code write to the start of it, you'll wind up with exactly
the symptoms you describe.

Neal

First Palm App Works - Almost!!!

Posted by [Barry Ekstrand](#) on June 13, 1999 at 17:52:12:

After lots of help from this board learning how to use input and output
fields and how formatting routines work, I sat down and modified one of my
'pure Forth' efforts to create my first Palm App using RsrcEdit and the Palm
API. Amazingly, it worked on the first try. Well, almost, anyway. All of the
input, calculation, formatting, and outputting worked great. What didn't work
right was my "About" alert and Help string calls.

My form has the About choice on the menu. In RsrcEdit, when previewing, the
alert box pops up just fine with the About info in it. When pressing the "I"
in the upper right corner for the help string, however, I get a blank Tips
window. When the app itself is run, choosing About from the Menu does nothing
but give me a beep - no alert window popping up at all.

I originally created my resource file by copying and modifying Carl's
PhoneDecode resource file (which works great). I have gone through Stephen's
tutorial backwards and forwards to try to find something amiss, but I can't
see anything wrong. My MBAR ID is 1200, the About Talt ID is 3000, and the
Help tSTR ID is 3001. I've tried other ID variations but as I expected it
made no difference (no conflicts apparent). Since it isn't working right in
the preview mode of RsrcEdit, I believe it is a form problem rather than a
code issue.

Anyone got any ideas? I'd like to nail this before sharing the program with
anyone else - it's too simple to allow for non-working menus and the like.

By the way, many thanks to all (especially Neal and Carl) who have helped me
to understand enough to get this far.

Regards ,

Barry Ekstrand

Re: First Palm App Works - Almost!!!

Posted by [E. Ross Helton](#) on June 13, 1999 at 21:21:24:

In Reply to: [First Palm App Works - Almost!!!](#) posted by Barry Ekstrand on June 13, 1999 at 17:52:12:

Hi Barry;

One of the first mistakes I made in doing a menu was to forget to put the number of the MBAR on the MBAR section of the form.

Another mistake I make was not to use the correct Constant in the main part of the program for the about.

3000 constant AboutBox 3001 constant HelpString.

These are the numbers I use.

Also in the selection process, I also have a Help choice which will put this up by itself without bringing up the 'About' box at all. That is what the 3001 constant HelpString, and in the selection part of the coding for my program I use 'HelpString FrmHelp' which allows this to work.

Hope this helps

Make it a good day!

Ross

> I originally created my resource file by copying and modifying Carl's PhoneDecode resource file (which works great). I have gone through Stephen's tutorial backwards and forwards to try to find something amiss, but I can't see anything wrong. My MBAR ID is 1200, the About Talt ID is 3000, and the Help tSTR ID is 3001. I've tried other ID variations but as I expected it made no difference (no conflicts apparent). Since it isn't working right in the preview mode of RsrcEdit, I believe it is a form problem rather than a code issue.

> Anyone got any ideas? I'd like to nail this before sharing the program with anyone else - it's too simple to allow for non-working menus and the like.

> By the way, many thanks to all (especially Neal and Carl) who have helped

me
to understand enough to get this far.

> Regards,

> Barry Ekstrand

Re: First Palm App Works - Almost!!!

Posted by [Neal Bridges](#) on June 13, 1999 at 20:31:38:

In Reply to: [First Palm App Works - Almost!!!](#) posted by Barry Ekstrand on June 13, 1999 at 17:52:12:

> My form has the About choice on the menu. In RsrcEdit, when previewing, the
> alert box pops up just fine with the About info in it. When pressing the "I"
> in the upper right corner for the help string, however, I get a blank Tips
> window.

That's normal for RsrcEdit -- the preview for alerts doesn't show the
associated
help string.

> When the app itself is run, choosing About from the Menu does nothing but
> give
> me a beep - no alert window popping up at all.

This would depend on your menu-handling code -- what's it look like?

Neal

Re: First Palm App Works - Almost!!!

Posted by [Barry Ekstrand](#) on June 14, 1999 at 11:00:58:

In Reply to: [Re: First Palm App Works - Almost!!!](#) posted by Neal Bridges on June 13, 1999 at 20:31:38:

Neal,

The blank tip form fooled me into thinking I had the form itself goofed up.
I'll download Roger's update that fixes that part.

> This would depend on your menu-handling code -- what's it look like?

Here are snippets from the code dealing with the menu. I think my problem

must
be the call to menuEvent if OptAboutMitmID is selected. Let me know what you see:

```
1200 CONSTANT LoanMbarID
1210 CONSTANT OptAboutMitmID
3000 CONSTANT AboutAlertID
3001 CONSTANT AboutHelpStrID

: main ( -- )
LoanCalcFormID ShowForm
AmountFieldID FieldFocus
BEGIN ekey
ctlSelectEvent = IF
event >abs itemid
CalcBtnID = IF
get-inputs
calc-pmt
show-results
AmountFieldID FieldFocus
then
menuEvent = IF
event >abs itemid
OptAboutMitmID = IF
AboutAlertID FrmAlert
then
then
then
AGAIN
;
```

As always, all help is appreciated.

Barry

Re: First Palm App Works - Almost!!!

Posted by [Carl Jacobsen](#) on June 14, 1999 at 12:16:23:

In Reply to: [Re: First Palm App Works - Almost!!!](#) posted by Barry Ekstrand on June 14, 1999 at 11:00:58:

> Here are snippets from the code dealing with the menu. I think my problem
> must be the call to menuEvent if OptAboutMitmID is selected. Let me know
> what you see:

Looks like you weren't providing the menuEvent test with a copy of the

event for purposes of comparison :-) Take a look at this:

```
: main ( -- )
  LoanCalcFormID ShowForm
  AmountFieldID FieldFocus
  BEGIN
    ekey
    DUP          \ --> save a copy for menuEvent test
    ctlSelectEvent = IF
      DROP      \ --> drop saved copy, won't be needed
      event >abs itemid
      CalcBtnID = IF
        get-inputs
        calc-pmt
        show-results
    AmountFieldID FieldFocus
    THEN
  ELSE          \ --> added this, so only tries to do one or the other...
    menuEvent = IF
  event >abs itemid
    OptAboutMitmID = IF
    AboutAlertID FrmAlert
    THEN
  THEN
  THEN
  AGAIN ;
```

This can be simplified a little by using the condsthen words. You get a little benefit in this case, and increasingly more as you add more *ELSE DUP *Event = IF* sections to handle other event types...

needs condsthen

...

```
: main ( -- )
  LoanCalcFormID ShowForm
  AmountFieldID FieldFocus
  BEGIN
    ekey
    cond DUP ctlSelectEvent = IF
      event >abs itemid
      CalcBtnID = IF
  get-inputs
    calc-pmt
    show-results
  AmountFieldID FieldFocus
  THEN
  ELSE DUP menuEvent = IF
    event >abs itemid
    OptAboutMitmID = IF
```

```
AboutAlertID FrmAlert
  THEN
  thens DROP
AGAIN ;
```

Oh, and the *AmountFieldID FieldFocus* that follows right after *show-results* is only if you want the behavior where the cursor pops back to that input field after doing a calculation.

-- Carl

P.S. Still a little groggy this a.m., and haven't put this code in the Pilot yet, so big apologies if I mucked something up... :-)

First Palm App Works - Completely!!!

Posted by [Barry Ekstrand](#) on June 14, 1999 at 14:13:42:

In Reply to: [Re: First Palm App Works - Almost!!!](#) posted by Carl Jacobsen on June 14, 1999 at 12:16:23:

```
> DUP \ --> save a copy for menuEvent test
> ctlSelectEvent = IF
> DROP \ --> drop saved copy, won't be needed
```

Mission Accomplished!! A big light comes on - slowly but surely the logic of the language is making sense. Now that you point it out, trying it without the dup / drop seems pretty.... well, heck, I AM a complete novice after all!

I really appreciate the help - I've learned a bunch with this little project. My next task for it: figure out how to output to something other than an editable field.

Thanks again for the assistance!

Barry

Re: First Palm App Works - Completely!!!

Posted by [Erwin Schomburg](#) on June 14, 1999 at 16:11:24:

In Reply to: [First Palm App Works - Completely!!!](#) posted by Barry Ekstrand on June 14, 1999 at 14:13:42:

```
> > DUP \ --> save a copy for menuEvent test
> > ctlSelectEvent = IF
> > DROP \ --> drop saved copy, won't be needed
```

```
> Mission Accomplished!! A big light comes on - slowly but surely the logic
of
> the language is making sense. Now that you point it out, trying it without
the
> dup / drop seems pretty.... well, heck, I AM a complete novice after all!
> I really appreciate the help - I've learned a bunch with this little
project.
```

```
> My next task for it: figure out how to output to something other than an
> editable field.
```

```
> Thanks again for the assistance!
```

Huh, didn't get in at the beginning of your problem, but now that you have learned how it is done the long and correct way, look into some code

```
/shameless plug
```

```
e.g. my evenhandler for Quint
```

```
/end shameless plug
```

to see how you can replace the IF-ELSE-THEN nesting with a more human readable

form by using a CASE-OF-ENDOF-ENDCASE structure, still a correct way.

To output any string anywhere on screen, position cursor by using AT (ypos xpos

```
--- ) from the graphics module, build your string so that you have address and
```

```
length on stack and TYPE ( addr len --- ).
```

```
/Erwin
```

Re: First Palm App Works - Completely!!!

Posted by [Carl Jacobsen](#) on June 14, 1999 at 19:53:20:

In Reply to: [Re: First Palm App Works - Completely!!!](#) posted by Erwin Schomburg on June 14, 1999 at 16:11:24:

```
> ... but now that you have
> learned how it is done the long and correct way, look into some code
> /shameless plug
> e.g. my evenhandler for Quint
> /end shameless plug
> to see how you can replace the IF-ELSE-THEN nesting with a more human
> readable form by using a CASE-OF-ENDOF-ENDCASE structure, still a correct
> way.
```

Well, I'd been meaning to look into case-of... for a while, and you know what, you're right :-). Took a look through your code, Erwin, and I like the effect of the case code quite a bit.

```
> To output any string anywhere on screen, position cursor by using AT (
> ypos xpos --- ) from the graphics module, build your string so that you
> have address and length on stack and TYPE ( addr len --- ).
```

Hmm, could be classed as personal preference, but I'm opposed to doing direct cursor positioning on a screen where you're using forms that are under the control of the OS. Much better to output to a field using the appropriate calls, because then if you tweak the form around a bit, your output automagically ends up in the new place, rather than having to keep a bunch of coordinate constants in sync with your resources by hand.

So, not a plug, just a pointer :-). Feel free to steal the string>anyField word from PhoneDecode (in the string2anyfield.txt file), which works just like Neal's string>Field (from the Fields memo), except that it can scribble on non-editable fields as well as editable fields.

-- Carl

Re: First Palm App Works - Completely!!!

Posted by [Barry Ekstrand](#) on June 14, 1999 at 17:13:49:

In Reply to: [Re: First Palm App Works - Completely!!!](#) posted by Erwin Schomburg on June 14, 1999 at 16:11:24:

No rest for the wicked! Erwin, thanks for the tip. I have downloaded Quintominoes to study, as well as your newly posted tutorial. Those of us learning this stuff certainly appreciate your taking the time to share your

knowledge with us.

Thanks again,

Barry

```
> Huh, didn't get in at the beginning of your problem, but now that you have
> learned how it is done the long and correct way, look into some code
> /shameless plug
> e.g. my evenhandler for Quint
> /end shameless plug
> to see how you can replace the IF-ELSE-THEN nesting with a more human
readable
> form by using a CASE-OF-ENDOF-ENDCASE structure, still a correct way.
> To output any string anywhere on screen, position cursor by using AT ( ypos
xpos
> --- ) from the graphics module, build your string so that you have address
and
> length on stack and TYPE ( addr len --- ).
> /Erwin
```

Re: First Palm App Works - Almost!!!

Posted by [Carl Jacobsen](#) on June 14, 1999 at 12:37:22:

In Reply to: [Re: First Palm App Works - Almost!!!](#) posted by Carl Jacobsen on June 14, 1999 at 12:16:23:

Okay, well, I **said** I was a little groggy; that should have been:

```
...
> Oh, and the AmountFieldID FieldFocus that follows right
> after show-results is only if you want the behavior where
> the cursor pops back to that input field after doing a calculation.
> -- Carl
```

```
> P.S. Still a little groggy this a.m., and haven't put this code in
> the Pilot yet, so big apologies if I mucked something up... :-)
```

Wishing there were a way to edit yer own posts :-) ...

-- Carl

Re: First Palm App Works - Almost!!!

Posted by [Roger Lawrence](#) on June 13, 1999 at 21:36:04:

In Reply to: [Re: First Palm App Works - Almost!!!](#) posted by Neal Bridges on June 13, 1999 at 20:31:38:

> > My form has the About choice on the menu. In RsrcEdit, when previewing, the
> > alert box pops up just fine with the About info in it. When pressing the "I"
> > in the upper right corner for the help string, however, I get a blank Tips
> > window.

> That's normal for RsrcEdit -- the preview for alerts doesn't show the associated
> help string.

I just released RsrcEdit v1.001 with this bug fixed. Sorry I hadn't caught it sooner.

Re: First Palm App Works - Almost!!!

Posted by [Neal Bridges](#) on June 13, 1999 at 21:54:18:

In Reply to: [Re: First Palm App Works - Almost!!!](#) posted by Roger Lawrence on June 13, 1999 at 21:36:04:

> > > My form has the About choice on the menu. In RsrcEdit, when previewing, the
> > > alert box pops up just fine with the About info in it. When pressing the "I"
> > > in the upper right corner for the help string, however, I get a blank
> > Tips
> > > window.

> > That's normal for RsrcEdit -- the preview for alerts doesn't show the
> associated
> > help string.

> I just released RsrcEdit v1.001 with this bug fixed. Sorry I hadn't caught it
> sooner.

Hey, thanks Roger. No need to apologize -- RsrcEdit is a handy thing indeed.

Neal

Re: First Palm App Works - Almost!!!

Posted by [E. Ross Helton](#) on June 14, 1999 at 11:43:50:

In Reply to: [Re: First Palm App Works - Almost!!!](#) posted by Neal Bridges on June 13, 1999 at 21:54:18:

Hi Roger;

I agree with Neal. I tried doing some forms for Quartus another way, and RsrEdit is the easiest. Thanks for having it available. And thanks for your diligence in making it constantly more usable.

Make it a good day!

Ross

> > I just released RsrcEdit v1.001 with this bug fixed. Sorry I hadn't caught it
> > sooner.

> Hey, thanks Roger. No need to apologize -- RsrcEdit is a handy thing indeed.

> Neal

Re: First Palm App Works - Almost!!!

Posted by [Barry Marks](#) on June 19, 1999 at 22:15:55:

In Reply to: [Re: First Palm App Works - Almost!!!](#) posted by E. Ross Helton on June 14, 1999 at 11:43:50:

> I agree with Neal. I tried doing some forms for Quartus another way, and
> RsrEdit is the easiest. Thanks for having it available. And thanks for your
> diligence in making it constantly more usable.

Is it possible in Quartus and PalmOS to create forms or controls on the fly in the code the way you can in Windows?

Don't get me wrong, I don't intend to stop using RsrcEdit. I'm just curious about what can be done.

Barry

Re: First Palm App Works - Almost!!!

Posted by [Neal Bridges](#) on June 19, 1999 at 22:19:30:

In Reply to: [Re: First Palm App Works - Almost!!!](#) posted by Barry Marks on June 19, 1999 at 22:15:55:

> > I agree with Neal. I tried doing some forms for Quartus another way, and
> > RsrEdit is the easiest. Thanks for having it available. And thanks for
you
> > diligence in making it constantly more usable.

> Is it possible in Quartus and PalmOS to create forms or controls on the fly
in
> the code the way you can in Windows?

Version 3 of the Palm OS provides for certain dynamic GUI objects, created on the fly. I recommend against it as a general rule; it gains you nothing while making your applications incompatible with any Palm device before the III. Certain unusual apps might actually need to create new UI elements at runtime, but it's certainly not the norm.

Neal

Re: First Palm App Works - Almost!!!

Posted by [Barry Marks](#) on June 20, 1999 at 00:16:41:

In Reply to: [Re: First Palm App Works - Almost!!!](#) posted by Neal Bridges on June 19, 1999 at 22:19:30:

> Version 3 of the Palm OS provides for certain dynamic GUI objects, created
on
> the fly. I recommend against it as a general rule; it gains you nothing
while
> making your applications incompatible with any Palm device before the III.
> Certain unusual apps might actually need to create new UI elements at
runtime,
> but it's certainly not the norm.

Is there some provision for having controls on a form and hiding them and bringing them back as needed? Or having more than one control at the same location and showing only the appropriate one?

Or is the better way to just have another form?

Barry

Re: First Palm App Works - Almost!!!

Posted by [Neal Bridges](#) on June 20, 1999 at 01:03:06:

In Reply to: [Re: First Palm App Works - Almost!!!](#) posted by Barry Marks on June 20, 1999 at 00:16:41:

> > Version 3 of the Palm OS provides for certain dynamic GUI objects,
created
on
> > the fly. I recommend against it as a general rule; it gains you nothing
> while
> > making your applications incompatible with any Palm device before the
III.
> > Certain unusual apps might actually need to create new UI elements at
> runtime,
> > but it's certainly not the norm.

> Is there some provision for having controls on a form and hiding them and
> bringing them back as needed? Or having more than one control at the same
> location and showing only the appropriate one?

Yes, the Palm OS lets you hide and unhide form objects, and they can overlap.

> Or is the better way to just have another form?

That decision would depend on the specific application. Frankly I can't think offhand of a Palm application that selectively hides bits and pieces of its interface, so I can't really say what'd be preferable.

Neal

Re: First Palm App Works - Almost!!!

Posted by [Barry Marks](#) on June 20, 1999 at 14:26:04:

In Reply to: [Re: First Palm App Works - Almost!!!](#) posted by Neal Bridges on June 20, 1999 at 01:03:06:

> That decision would depend on the specific application. Frankly I can't think

> offhand of a Palm application that selectively hides bits and pieces of its
> interface, so I can't really say what'd be preferable.

I'm just trying to get some idea of what the possibilities are.

I've just begun learning how to use the GUI in simple ways to get a feel for
it. I just made my first little app with buttons and now I'm trying to
understand how to get data from a field. I have lots of samples to look at
for
this but not being a GUI programmer it's slow going. But it is going.

Barry

Re: First Palm App Works - Almost!!!

Posted by [Neal Bridges](#) on June 20, 1999 at 15:58:52:

In Reply to: [Re: First Palm App Works - Almost!!!](#) posted by Barry Marks on
June 20, 1999 at 14:26:04:

> > That decision would depend on the specific application. Frankly I can't
> think
> > offhand of a Palm application that selectively hides bits and pieces of
its
> > interface, so I can't really say what'd be preferable.

> I'm just trying to get some idea of what the possibilities are.

> I've just begun learning how to use the GUI in simple ways to get a feel
for
> it. I just made my first little app with buttons and now I'm trying to
> understand how to get data from a field. I have lots of samples to look at
for
> this but not being a GUI programmer it's slow going. But it is going.

Take a look at the sources to PhoneDecode by Carl Jacobsen -- it should help.
Take small steps, testing as you go, and build on your successes. Let me know
if I can help!

Neal

Re: First Palm App Works - Almost!!!

Posted by [Barry Marks](#) on June 20, 1999 at 20:44:50:

In Reply to: [Re: First Palm App Works - Almost!!!](#) posted by Neal Bridges on June 20, 1999 at 15:58:52:

> Take a look at the sources to PhoneDecode by Carl Jacobsen -- it should help.
> Take small steps, testing as you go, and build on your successes. Let me know
> if I can help!

I am using PhoneDecode as a model. It's pretty much the perfect example to get started with.

I probably will have some questions when I get stuck but so far I've been able to get over the humps.

Barry

Yet another tutorial approach

Posted by [Erwin Schomburg](#) on June 13, 1999 at 08:22:23:

To whom it is of interest, I tried to dissect my Quintominoes app to share the "what makes it tick" with the other Quartus folks. See the page link below to go directly there, or start from my homepage at <http://home.t-online.de/home/Erwin.Schomburg>

May the Forth be with you!
/Erwin

- [Anatomy of a Quartus App](#)

Interesting "coincidence" :-)

Posted by [Carl Jacobsen](#) on June 12, 1999 at 19:34:41:

I just happened to look up the book "Thinking Forth", by Leo Brodie, on amazon.com, and the "Customers who bought this book also bought:" section includes: "Palm Programming : The Developer's Guide". Now just what kind of strange people would be buying **both** of those books? :-)

Small world...

-- Carl

Re: Interesting "coincidence" :-)

Posted by [Neal Bridges](#) on June 12, 1999 at 20:14:15:

In Reply to: [Interesting "coincidence" :-\)](#) posted by Carl Jacobsen on June 12, 1999 at 19:34:41:

> I just happened to look up the book "Thinking Forth", by Leo Brodie,
> on amazon.com, and the "Customers who bought this book also bought:"
> section includes: "Palm Programming : The Developer's Guide". Now
> just what kind of strange people would be buying **both** of those
> books? :-)

Quartus Forth isn't taking the world by storm, but those who have found it and tried it, like it quite a bit.

I've been wondering where would be good to advertise -- any thoughts?

Neal

Advertising

Posted by [Dennis Misener](#) on June 12, 1999 at 21:07:29:

In Reply to: [Re: Interesting "coincidence" :-\)](#) posted by Neal Bridges on June 12, 1999 at 20:14:15:

A high profile in the palm development newsgroups is a cheap and effective.

> I've been wondering where would be good to advertise -- any thoughts?
> Neal

Re: Advertising

Posted by [Peter Dohm](#) on June 24, 1999 at 01:24:01:

In Reply to: [Advertising](#) posted by Dennis Misener on June 12, 1999 at 21:07:29:

> A high profile in the palm development newsgroups is a cheap and effective.

> > I've been wondering where would be good to advertise -- any thoughts?

> > Neal

hi neal.

i've got a potential advertising opportunity for you...

i know a LOT of people that talk about palm issues at www.slashdot.org.

it might not be that expensive to get an add on slashdot, and probably get it in front of LOTS of people. as i recall it's in the millions of hits per week.

i realize it's not a perfectly targetted audience, but i think lots of people in that arena probably would be quite interested to play :) i know i am :)

cheers!

Peter

Re: Advertising

Posted by [Neal Bridges](#) on June 12, 1999 at 21:22:12:

In Reply to: [Advertising](#) posted by Dennis Misener on June 12, 1999 at 21:07:29:

> > I've been wondering where would be good to advertise -- any thoughts?

> A high profile in the palm development newsgroups is a cheap and effective.

I try and answer what questions I can there, but advertising would be in violation of the charter for those groups.

Neal

Re: Advertising

Posted by [Serg Koren](#) on June 12, 1999 at 22:39:45:

In Reply to: [Re: Advertising](#) posted by Neal Bridges on June 12, 1999 at 21:22:12:

Hi Neal,

How about on the Palm homepage? They usually have some sort of ad for 3rd party stuff or a testimonial about how some product makes your Palm life better. Or if you have tons of money how about a 60 sec. spot during halftime of the SuperBowl ;-). Seriously, the 3com home page thing would be good. Or short of that more good Quartus articles in magazines by you and others.

S

> > > I've been wondering where would be good to advertise -- any thoughts?

> > A high profile in the palm development newsgroups is a cheap and effective.

> I try and answer what questions I can there, but advertising would be in violation of the charter for those groups.

> Neal

Re: Advertising

Posted by [Neal Bridges](#) on June 12, 1999 at 23:18:26:

In Reply to: [Re: Advertising](#) posted by Serg Koren on June 12, 1999 at 22:39:45:

> Hi Neal,

> How about on the Palm homepage? They usually have some sort of ad for 3rd party stuff or a testimonial about how some product makes your Palm life better. Or if you have tons of money how about a 60 sec. spot during halftime

> of the SuperBowl ;-). Seriously, the 3com home page thing would be good. Or short of that more good Quartus articles in magazines by you and others.

I bet you're right, Serg -- probably the best bang for the buck. I imagine the buck for 3Com's home-page is fairly large itself; I'll see what I can find out.

Neal

Re: Advertising

Posted by [Erwin Schomburg](#) on June 13, 1999 at 10:59:04:

In Reply to: [Re: Advertising](#) posted by Neal Bridges on June 12, 1999 at 23:18:26:

> > Hi Neal,
> > How about on the Palm homepage? They usually have some sort of ad for 3rd
> > party stuff or a testimonial about how some product makes your Palm life
> > better. Or if you have tons of money how about a 60 sec. spot during
halftime
> > of the SuperBowl ;-) Seriously, the 3com home page thing would be good.
Or
> > short of that more good Quartus articles in magazines by you and others.
> I bet you're right, Serg -- probably the best bang for the buck. I imagine
the
> buck for 3Com's home-page is fairly large itself; I'll see what I can find
out.
> Neal

OK, mine are not exactly what you would call killer apps, but I try to help
promote Quartus by telling people in descriptions and the Help popups that it
is
a Quartus app. What about the other frequent flyers in here?

/Erwin

Re: Advertising

Posted by [Ron Doerfler](#) on June 13, 1999 at 13:04:55:

In Reply to: [Re: Advertising](#) posted by Erwin Schomburg on June 13, 1999 at 10:59:04:

Hi,

> OK, mine are not exactly what you would call killer apps, but I try
> to help promote Quartus by telling people in descriptions and the
> Help popups that it is a Quartus app. What about the other frequent
> flyers in here?

In my app, which is coming out very soon, I mention Quartus Forth and RsrcEdit in the info part of my About menu functions. However, I also prominently mention Quartus Forth in my manual. In the intro, I say that my app "is tightly-coded in Quartus Forth--with all of its features, it occupies an amazingly small 26K of RAM on your PalmPilot." Quartus Forth is really a feature to the end-user for this reason, as well as for speed, so I think it can be advertised as such.

Ron
(still amazed at the 26K, actually)

Re: Advertising

Posted by [E.Ross Helton](#) on June 13, 1999 at 21:11:52:

In Reply to: [Re: Advertising](#) posted by Ron Doerfler on June 13, 1999 at 13:04:55:

> Hi,

> > OK, mine are not exactly what you would call killer apps, but I try
> > to help promote Quartus by telling people in descriptions and the
> > Help popups that it is a Quartus app. What about the other frequent
> > flyers in here?

As with some of you I am mentioning Quartus Forth and RsrcEdit in my programs. They aren't "Star Wars" but I have had a total of 2500 hits on 'Rtrek program in all the combined places where it is on the web. Hope that helps Neal.

One other thing that each of us could do and it is 'Free' is to write comments and evaluations of the programs of ours which are put up and to mention that these programs are written with 'Quartus' For example some of us could goto to the PilotGear page and if we liked something special about Say Erwin's 'Quint' program, we could post a comment there and mention that it is written in Quartus.

Also we could put notes in the 'Tips' and comments sections, where we brag about the use of Quartus.

And like on all of my pages, each of us could put up the 'Quartus' icon with

a
click back to Neal's pages.

Why should we do this? One it will help Neal. However, maybe most important to all of us it will help each of us. Why? Because if this gets promoted. Neal gets the funding to write bigger and better 'Quartus'. There Will be more interest generated. More interest will eventually cause some of the book and article people to want to get things written about it. The more written about it the more people who will use it. the more people who use it, the more help all of us will get as we have more partners in sharing our work>

Another way to promote this would be to join one or more of the Forth WebRings.

I belong to two. At each place where I have a WebRing icon I have Neal's Quartus Icon.

Maybe these are small things, but if each of us did a couple of these The Whole would make it a bigger thing.

Just my two cents worth

Make it a good day!

Ross

- [What The Tech Heard](#)

Oops, ignore my other note here.

Posted by [Kip DeGraaf](#) on June 13, 1999 at 10:42:33:

In Reply to: [Re: Advertising](#) posted by Neal Bridges on June 12, 1999 at 23:18:26:

You could always try for a bigger presence at RoadCoders.

I personally didn't find the site very useful, but I understand that many people do make use of the resource. And they recently moved over to developer.com, so the site should be getting better.

- [RoadCoders](#)

Roadcoders was useful

Posted by [Barry Marks](#) on June 16, 1999 at 12:22:05:

In Reply to: [Oops, ignore my other note here.](#) posted by Kip DeGraaf on June 13, 1999 at 10:42:33:

I looked over several sites before deciding to buy a Palm Pilot. My main concern was that there be a language for onboard use and that it be a worthwhile language.

Roadcoders finally convinced me because they listed all the compilers in one place. I used that as a starting place to see if one interested me. I think they pointed me to Pilot Forth which soon got me looking at Quartus Forth.

I really wanted a C compiler since that's the language I know, but PocketC seemed weak. Quartus looked good but I don't know Forth. I'd played with various Forth compilers over the years and even modified one (in assembly) to work on a 200lx palmtop. But I'd never written a program more than 15 or 20 lines long.

So I bought the Palm and immediately came home and registered and downloaded Quartus and PocketC to see which one I would like. I haven't used PocketC since that first day. It only resembles C and if I was gonna learn a new language I might as well learn a powerful one.

So, RoadCoders gave me the info I needed to decide to buy the Pilot and Quartus. I think that's pretty useful.

Barry

Re: Advertising

Posted by [Kip DeGraaf](#) on June 13, 1999 at 10:41:49:

In Reply to: [Re: Advertising](#) posted by Neal Bridges on June 12, 1999 at 23:18:26:



You could always try for a bigger presence at RoadCoders.

I personally didn't find the site very useful, but I understand that many people do make use of the resource. And they recently moved over to developer.com, so the site should be getting better.

Emulator without need for cables?

Posted by [E.Ross Helton](#) on June 12, 1999 at 01:10:04:

Hi;

Didn't someone mention at one time that there was a version of the emulator for the Pilot that would run and didn't need the serial cables?

Thanks for your help!

Make it a good day!

Ross

Re: Emulator without need for cables?

Posted by [Neal Bridges](#) on June 12, 1999 at 09:57:49:

In Reply to: [Emulator without need for cables?](#) posted by E.Ross Helton on June 12, 1999 at 01:10:04:

> Didn't someone mention at one time that there was a version of the emulator for
> the Pilot that would run and didn't need the serial cables?

I understand the newer emulator can be made to HotSync via 'network HotSync', though I've never set it up. Depending on what you're after, you may not need to HotSync -- there's a utility available for copying PDBs/PRCs out of the emulator to the desktop.

Neal

Re: Emulator without need for cables?

Posted by [Erwin Schomburg](#) on June 12, 1999 at 06:07:36:

In Reply to: [Emulator without need for cables?](#) posted by E.Ross Helton on June 12, 1999 at 01:10:04:

> Hi;

> Didn't someone mention at one time that there was a version of the emulator for

> the Pilot that would run and didn't need the serial cables?

> Thanks for your help!

> Make it a good day!

> Ross

Although I wouldn't know how to make network Hotsync work for the Emulator, with the newer versions (e.g. 2.1d26) you can select all in your backup directory, unselect NetPrefsDB and then drag/drop the whole shebang into the Emulator window.

/Erwin

Re: Emulator without need for cables?

Posted by [Jim Hendricks](#) on June 15, 1999 at 10:20:26:

In Reply to: [Re: Emulator without need for cables?](#) posted by Erwin Schomburg on June 12, 1999 at 06:07:36:

Erwin, thanks for the tip, I have over 6M of stuff on my palm, I wanted the emu to be synced with my real palm. Luckily I am also using Backup Buddy which means that all of my stuff is in the backup directory instead of just the stuff that has a conduit. How simple it was to just drag and drop the contents and within a minute or 2 I had a full replica. One small thing though, in order for this to work you have to make sure you are not in the application manager, otherwise it has a problem updating the apps list. I choose to do it from the calculator since that is built in and has no associated db. Thanks again, it will save lots of time!

> Although I wouldn't know how to make network Hotsync work for the Emulator, with the newer versions (e.g. 2.1d26) you can select all in your backup directory, unselect NetPrefsDB and then drag/drop the whole shebang into the Emulator window.

> /Erwin

PalmOS3.0 Graffiti Shortcuts Bug

Posted by [Ron Doerfler](#) on June 11, 1999 at 16:42:50:

Hi Everyone,

There is a bug in PalmOS 3.0 that a lot of folks know about, and which isn't so bad, but I thought I'd mention it.

Every time you do a soft reset (which is a natural byproduct of debugging code!), three "dot"-type Graffiti Shortcuts are added again to the shortcuts (.t, .i, and .s). In time, you see that the system Preferences app is slow to load, particularly for Graffiti Shortcut changes. Since the "dot" shortcuts don't appear in Preferences, you don't know that they're getting built up unless you see how large the Graffiti Shortcuts database is getting, and more noticeably, how long it takes to bring them up for editing. It also eventually affects code that retrieves the shortcuts (like mine).

One solution is to download a freeware product called dbScan, which among other functions allows you to clean up your shortcuts. Select the "Clean Up Shortcuts" button, not the "Init Shortcuts." Works great.

Ron

- [dbScan PilotGear Page](#)

Re: PalmOS3.0 Graffiti Shortcuts Bug

Posted by [Carl Jacobsen](#) on June 14, 1999 at 17:54:19:

In Reply to: [PalmOS3.0 Graffiti Shortcuts Bug](#) posted by Ron Doerfler on June 11, 1999 at 16:42:50:

Another good source for info on this is the link below...

Heh, when I found out about this a while back, and ran dbScan, it cleared out a couple **hundred** duplicates for me.

Which is really odd, since I **never** have to reset my Pilot when programming, because all my programs work perfectly the first time... :-)

-- Carl

- [OS 3.x Duplicate Shortcut Problem](#)

The old ;S word...

Posted by [Jim Deakin](#) on June 11, 1999 at 09:19:52:

Is there an ANS equivalent to the ;S which used to be used in blocks, which can end interpretation of a memo or doc file, and return to normal input? Something like QUIT but preserving the contents of the stacks.

Thanks,
Jim Deakin

Re: The old ;S word...

Posted by [Neal Bridges](#) on June 11, 1999 at 10:31:37:

In Reply to: [The old ;S word...](#) posted by Jim Deakin on June 11, 1999 at 09:19:52:

> Is there an ANS equivalent to the ;S which used to be used in blocks,
> which can end interpretation of a memo or doc file, and return to
> normal input? Something like QUIT but preserving the contents of the
> stacks.

> Thanks,
> Jim Deakin

Yes -- in *toolkit.txt*. It's called [END]. Works for memos but not Doc files, at least not in its current incarnation.

needs toolkit

...code...

[end]

...more code, ignored up to the end of the memo...

Neal

Output and Formats again!

Posted by [Barry Ekstrand](#) on June 10, 1999 at 09:16:59:

I am still working on getting my output displayed in a money format, and have observed the following. When using the # to create a formatting word, such as:

```
: d>#.## ( d -- c-addr u )
tuck dabs
<# # [char] . hold #s rot sign
[char] $ #> type space ;
```

you will get a display with 2 decimal places displayed, but not necessarily representing the true value. For example:

```
fvariable pmt
fvariable newpmt
0.1164789e4 pmt f! \ set the value of pmt to 1164.789 (fp calc'd value)
pmt f@ 1e2 f* newpmt f! \ set the value of newpmt to 116478.9
newpmt f@ f>d \ convert newpmt value to double cell value 116478
d>#.##
```

When this is run, instead of getting an output of \$116478.00, you get \$1164.78.

if the following line is inserted before d>#.##:

```
1 100 M*/ \ divide the double cell value by 100 to give 1164.78
```

the output will be \$11.64, not \$1164.78 as it should be.

It appears to me that the fractional part is being ignored, and the formatting takes the right 2 places of the integer part and places to the right of the decimal character. This isn't giving what I need - I want to display the real value rounded to 2 decimal places.

I thought the M/MOD word might work for me, but it seems to have a bug (?). When I try this in the interpretive mode:

```
100 8 M/MOD .s
the stack shows
<2> 12 2
```

The remainder (TOS) value should be 4. When I try 143 70 M/MOD the stack shows

```
<2> 2 4
```

where the remainder should have been 3.

To summarize, I am using floats because of the need for large value calculations and accuracy, but am having difficulty formatting the final values (where rounding can take place) to accurately show the outcome. Any ideas?

Thanks,

Barry Ekstrand

Re: Output and Formats again!

Posted by [Neal Bridges](#) on June 10, 1999 at 10:26:41:

In Reply to: [Output and Formats again!](#) posted by Barry Ekstrand on June 10, 1999 at 09:16:59:

> I am still working on getting my output displayed in a money format, and have
> observed the following. When using the # to create a formatting word, such as:

```
> : d>#.## ( d -- c-addr u )  
> tuck dabs  
> <# # # [char] . hold #s rot sign  
> [char] $ #> type space ;
```

You're missing a HOLD after your \$ -- I presume just a typo.

> you will get a display with 2 decimal places displayed, but not necessarily
> representing the true value. For example:

```
> fvariable pmt  
> fvariable newpmt  
> 0.1164789e4 pmt f! \ set the value of pmt to 1164.789 (fp calc'd value)  
> pmt f@ 1e2 f* newpmt f! \ set the value of newpmt to 116478.9  
> newpmt f@ f>d \ convert newpmt value to double cell value 116478  
> d>#.##
```

> When this is run, instead of getting an output of \$116478.00, you get \$1164.78.

That looks correct to me -- 0.1164789e4 represents 1164.789.

```
> if the following line is inserted before d>#.##:  
> 1 100 M*/ \ divide the double cell value by 100 to give 1164.78  
> the output will be $11.64, not $1164.78 as it should be.
```

Right -- dividing the double-cell integer 116478 by 100 leaves 1164, which is then formatted and displayed as \$11.64 by your routine.

```
> It appears to me that the fractional part is being ignored, and the  
formatting  
> takes the right 2 places of the integer part and places to the right of the  
> decimal character. This isn't giving what I need - I want to display the  
real  
> value rounded to 2 decimal places.
```

```
> I thought the M/MOD word might work for me, but it seems to have a bug (?).
> When I try this in the interpretive mode:
> 100 8 M/MOD .s
> the stack shows
> <2> 12 2
> The remainder (TOS) value should be 4. When I try 143 70 M/MOD the stack
shows
> <2> 2 4
> where the remainder should have been 3.
```

Not a bug. M/MOD takes a double-cell dividend.

```
100. 8 m/mod .s
gives
12 0 4
```

which is correct -- 4 is the remainder, 12 0 is the double-cell representation of 12.

```
> To summarize, I am using floats because of the need for large value
> calculations and accuracy, but am having difficulty formatting the final
values
> (where rounding can take place) to accurately show the outcome. Any ideas?
```

As far as I can see, you've got it working in your first example -- no?

Neal

Re: Output and Formats again!

Posted by [Barry Ekstrand](#) on June 10, 1999 at 14:12:28:

In Reply to: [Re: Output and Formats again!](#) posted by Neal Bridges on June 10, 1999 at 10:26:41:

Neal,

I don't think I've got it right yet.

```
> > [char] $ #> type space ;
```

```
> You're missing a HOLD after your $ -- I presume just a typo.
```

You are right on the typo - my code does have the HOLD word after the \$.

```
> > fvariable pmt
> > fvariable newpmt
> > 0.1164789e4 pmt f! \ set the value of pmt to 1164.789 (fp calc'd value)
> > pmt f@ 1e2 f* newpmt f! \ set the value of newpmt to 116478.9
```

```
> > newpmt f@ f>d \ convert newpmt value to double cell value 116478  
> > d>#.##
```

```
> > When this is run, instead of getting an output of $116478.00, you get  
> $1164.78.
```

```
> That looks correct to me -- 0.1164789e4 represents 1164.789.
```

Its not displaying what I'm expecting. In the code above, pmt should be equal to 1164.789 but newpmt should be 100 times that, or 116478.9. Whe I call the d>

```
#.## word, it is operating on the value brought to the stack from newpmt and  
the f>d conversion, or 116478 (after the truncation takes place in the f>d  
conversion). So the display of $1164.78 is not correct for newpmt, it is  
1/100
```

of the correct value. It may be that my expectations don't match what the formatting operation does!

```
> > if the following line is inserted before d>#.##:  
> > 1 100 M*/ \ divide the double cell value by 100 to give 1164.78  
> > the output will be $11.64, not $1164.78 as it should be.
```

```
> Right -- dividing the double-cell integer 116478 by 100 leaves 1164, which  
is  
> then formatted and displayed as $11.64 by your routine.
```

This is where I'm having trouble. I suspect I've partially been misunderstanding how the formatting routine works and also perhaps clouding things by mixing double-cell and single-cell calculations? When I use M*/ I thought I needed a double-cell value and 2 single-cell values that are multiplied and divided respectively, returning a double-cell value in the end.

Is this incorrect?

With respect to the formatting, it still appears to me that the fractional part of a double-cell number is being ignored (truncated?), and the formatting starts with the right 2 places of the integer part and places them to the right of the decimal character and the rest of the places to the left. Is this what I should be expecting?

```
> Not a bug. M/MOD takes a double-cell dividend.
```

```
> 100. 8 m/mod .s  
> gives  
> 12 0 4
```

Okay, here I see that my mistake was using single-cell numbers for both when it looking for a double-cell and a single-cell. A lesson learned for sure, as in the program the resulting value on TOS would be wrong the way I was doing it.

```
> 12 0 is the double-cell representation of 12.
```

Just curious - how do you interpret the 0? I assume it means there is no value in the upper 16 bits - is this right? If the stack had shown 12 1, what value would this refer to (sorry for the elementary question, I can't find it in my references and the engineer in me won't let it drop).

> As far as I can see, you've got it working in your first example -- no?

Not yet, because I'm actually outputting 1/100 of the number that I'm intending

to. Is the solution to this simply to recognize that this happens and perform a multiplication operation to account for it first?

I guess one last point is that I am assuming I must convert from floating point

to double-cell or single-cell values in order to output them. If this isn't correct, and I can format and output the floating point values directly, please correct me!

Thanks for the assistance,

Barry

Re: Output and Formats again!

Posted by [Ron Doerfler](#) on June 10, 1999 at 14:35:52:

In Reply to: [Re: Output and Formats again!](#) posted by Barry Ekstrand on June 10, 1999 at 14:12:28:

Hi Barry,

> > 12 0 is the double-cell representation of 12.

> Just curious - how do you interpret the 0? I assume it means there is no value

> in the upper 16 bits - is this right? If the stack had shown 12 1, what value

> would this refer to (sorry for the elementary question, I can't find it in my

> references and the engineer in me won't let it drop).

Think in terms of hex numbers. 12 is the lower 2 bytes of the double and 0 is the upper 2 bytes, so you have 0x0000000c as your value. If you have "12 1" then you have 0x0001000c, which is 65,548 (or 1x64K + 12). Now you see what d>s does--it's simply a drop! When you had "100. /" before, it was the same as 100 0 / which divided 100 by 0 and crashed your PalmPilot.

Ron

Re: Output and Formats again!

Posted by [Neal Bridges](#) on June 10, 1999 at 14:25:55:

In Reply to: [Re: Output and Formats again!](#) posted by Barry Ekstrand on June 10, 1999 at 14:12:28:

```
> > > fvariable pmt
> > > fvariable newpmt
> > > 0.1164789e4 pmt f! \ set the value of pmt to 1164.789 (fp calc'd value)
> > > pmt f@ le2 f* newpmt f! \ set the value of newpmt to 116478.9
> > > newpmt f@ f>d \ convert newpmt value to double cell value 116478
> > > d>#.##
```

```
> > > When this is run, instead of getting an output of $116478.00, you get
> > $1164.78.
```

```
> > That looks correct to me -- 0.1164789e4 represents 1164.789.
```

```
> Its not displaying what I'm expecting. In the code above, pmt should be
equal
```

```
> to 1164.789 but newpmt should be 100 times that, or 116478.9. Whe I call
the
d>
```

```
> #.## word, it is operating on the value brought to the stack from newpmt
and
```

```
> the f>d conversion, or 116478 (after the truncation takes place in the f>d
> conversion). So the display of $1164.78 is not correct for newpmt, it is
1/100
```

```
> of the correct value. It may be that my expectations don't match what the
> formatting operation does!
```

```
The formatting code you have takes a double-cell integer, and displays it
with a
```

```
decimal point in front of the last two digits.
```

```
> > > if the following line is inserted before d>#.##:
```

```
> > > 1 100 M*/ \ divide the double cell value by 100 to give 1164.78
```

```
> > > the output will be $11.64, not $1164.78 as it should be.
```

```
> > Right -- dividing the double-cell integer 116478 by 100 leaves 1164,
which
```

```
is
```

```
> > then formatted and displayed as $11.64 by your routine.
```

```
> This is where I'm having trouble. I suspect I've partially been
```

```
> misunderstanding how the formatting routine works and also perhaps clouding
```

> things by mixing double-cell and single-cell calculations? When I use M*/ I
> thought I needed a double-cell value and 2 single-cell values that are
> multiplied and divided respectively, returning a double-cell value in the
end.

> Is this incorrect?

M*/ works like that, yes.

> With respect to the formatting, it still appears to me that the fractional
part

> of a double-cell number is being ignored (truncated?), and the formatting
> starts with the right 2 places of the integer part and places them to the
right

> of the decimal character and the rest of the places to the left. Is this
what

> I should be expecting?

Yes it is. To keep the additional digits, multiply your float by (in your
case)

100e before you convert it to a double-cell integer, and you're set.

> > 12 0 is the double-cell representation of 12.

> Just curious - how do you interpret the 0? I assume it means there is no
value

> in the upper 16 bits - is this right? If the stack had shown 12 1, what
value

> would this refer to (sorry for the elementary question, I can't find it in
my

> references and the engineer in me won't let it drop).

Yes -- a double-cell integer is a 32-bit number. 12 0 indicates the top
16-bits
are set to 0.

To see what 12 1 produces, do

needs double

12 1 d.

> > As far as I can see, you've got it working in your first example -- no?

> Not yet, because I'm actually outputting 1/100 of the number that I'm
intending

> to. Is the solution to this simply to recognize that this happens and
perform

> a multiplication operation to account for it first?

Right. Imagine the integer value as a quantity of pennies; the formatting
displays that as dollars and cents.

> I guess one last point is that I am assuming I must convert from floating
point

> to double-cell or single-cell values in order to output them. If this isn't

> correct, and I can format and output the floating point values directly,
please
> correct me!

You can produce floating-point output directly, but I think you'll find it
more
flexible to do it this way, via conversion to integer and using the pictured
numeric output words.

Neal

Re: Output and Formats again!

Posted by [Barry Ekstrand](#) on June 10, 1999 at 14:41:14:

In Reply to: [Re: Output and Formats again!](#) posted by Neal Bridges on June 10,
1999 at 14:25:55:

Neal,

Thanks for the explanations. I think this will get me over the hump to finish
this thing out (fingers crossed). I appreciate all the support.

Barry

"From Rome To Arabia (with Forth)" article now available on-line

Posted by [Neal Bridges](#) on June 09, 1999 at 22:57:04:

The article is now available at the EXE site. You'll have to sign up (it's
free) to get at the article.

Unfortunately they've managed to remove all indentation from the source --
other
than that it reads OK.

Neal

Re: "From Rome To Arabia (with Forth)" article now available on-line

Posted by [Neal Bridges](#) on June 09, 1999 at 23:00:50:

In Reply to: ["From Rome To Arabia \(with Forth\)" article now available on-line](#)
posted by Neal Bridges on June 09, 1999 at 22:57:04:

> The article is now available at the EXE site. You'll have to sign up (it's
> free) to get at the article.

> Unfortunately they've managed to remove all indentation from the source --
other
> than that it reads OK.

Oops -- left out the site URL. It's below.

Neal

- [EXE: The Software Developer's Magazine](#)

Re: "From Rome To Arabia (with Forth)" article now available on-line

Posted by [Serg Koren](#) on June 10, 1999 at 15:46:34:

In Reply to: [Re: "From Rome To Arabia \(with Forth\)" article now available
on-line](#) posted by Neal Bridges on June 09, 1999 at 23:00:50:

Good article, Neal. Do you ever sleep? ;-)
S

Re: "From Rome To Arabia (with Forth)" article now available on-line

Posted by [Neal Bridges](#) on June 10, 1999 at 17:14:56:

In Reply to: [Re: "From Rome To Arabia \(with Forth\)" article now available
on-line](#) posted by Serg Koren on June 10, 1999 at 15:46:34:

> Good article, Neal. Do you ever sleep? ;-)

> S

10 minutes out of every hour. :)

Neal

Re: "From Rome To Arabia (with Forth)" article now available on-line

Posted by [Bob Cunningham](#) on June 10, 1999 at 00:20:34:

In Reply to: [Re: "From Rome To Arabia \(with Forth\)" article now available on-line](#) posted by Neal Bridges on June 09, 1999 at 23:00:50:

> > The article is now available at the EXE site. You'll have to sign up
(it's
> > free) to get at the article.

Great article!

After logging in to the EXE site, the URL below will take you directly to
Neal's article.

-BobC

- [Neal's Article](#)

Re: "From Rome To Arabia (with Forth)" article now available on-line

Posted by [Neal Bridges](#) on June 10, 1999 at 14:26:56:

In Reply to: [Re: "From Rome To Arabia \(with Forth\)" article now available on-line](#) posted by Bob Cunningham on June 10, 1999 at 00:20:34:

> > > The article is now available at the EXE site. You'll have to sign up
(it's
> > > free) to get at the article.

> Great article!

Thanks!

> After logging in to the EXE site, the URL below will take you directly to

> Neal's article.

Appreciated.

Neal

Re: "From Rome To Arabia (with Forth)" article now available on-line

Posted by [E. Ross Helton](#) on June 10, 1999 at 08:48:25:

In Reply to: [Re: "From Rome To Arabia \(with Forth\)" article now available on-line](#) posted by Bob Cunningham on June 10, 1999 at 00:20:34:

> After logging in to the EXE site, the URL below will take you directly to
> Neal's article.

> -BobC

Hi Neal;

That is a great article. Bob, thanks for putting up the link. It took me directly to the article.

Make it a good day!

Ross

Re: "From Rome To Arabia (with Forth)" article now available on-line

Posted by [Neal Bridges](#) on June 10, 1999 at 14:28:05:

In Reply to: [Re: "From Rome To Arabia \(with Forth\)" article now available on-line](#) posted by E. Ross Helton on June 10, 1999 at 08:48:25:

> That is a great article. Bob, thanks for putting up the link. It took me
> directly to the article.

Thanks Ross! Glad you liked it.

Neal

Re: "From Rome To Arabia (with Forth)" article now available on-line

Posted by [Trevor Steele](#) on June 10, 1999 at 10:56:05:

In Reply to: [Re: "From Rome To Arabia \(with Forth\)" article now available on-line](#) posted by E. Ross Helton on June 10, 1999 at 08:48:25:

>
> > After logging in to the EXE site, the URL below will take you directly to
> > Neal's article.
> > -BobC
> Hi Neal;
> That is a great article. Bob, thanks for putting up the link. It took me
> directly to the article.
> Make it a good day!
> Ross

Hi Neal

Thoroughly enjoyed your article. It will certainly go some way towards improving my understanding of forth.

Many thanks

Trevor

Re: "From Rome To Arabia (with Forth)" article now available on-line

Posted by [Neal Bridges](#) on June 10, 1999 at 14:27:36:

In Reply to: [Re: "From Rome To Arabia \(with Forth\)" article now available on-line](#) posted by Trevor Steele on June 10, 1999 at 10:56:05:

> Thoroughly enjoyed your article. It will certainly go some way towards
> improving my understanding of forth.
> Many thanks

Thank you! Let me know if you have any questions about it.

Neal

Data Storage and retrieval

Posted by [Bill Stein](#) on June 09, 1999 at 21:41:04:

I would like to use the Palm Pilot as a "smart" memory card. I will carry the Pilot out to field instruments, serially connect the devices and with commands transfer data from the field device memory to the Palm. I have successfully connected the Palm Pilot and our field instrument, moved very small amounts of data back and forth.

What are the limitations in terms of memory capacity? How large can a data structure be? Can I use the forth word allot to create a 1 mbyte variable?

Has anyone implimented something like xmodem for error checking in serial transfers on the Palm. Thanks so much

Bill Stein
wms@yesinc.com

Re: Data Storage and retrieval

Posted by [Neal Bridges](#) on June 09, 1999 at 21:46:45:

In Reply to: [Data Storage and retrieval](#) posted by Bill Stein on June 09, 1999 at 21:41:04:

> I would like to use the Palm Pilot as a "smart" memory card. I will carry the
> Pilot out to field instruments, serially connect the devices and with
> commands
> transfer data from the field device memory to the Palm. I have successfully
> connected the Palm Pilot and our field instrument, moved very small amounts
> of
> data back and forth.

> What are the limitations in terms of memory capacity? How large can a data
> structure be? Can I use the forth word allot to create a 1 mbyte variable?

You can't use ALLOT to create a structure that large -- the Palm only provides a

small amount of dynamic memory for use at runtime. You can, however, open a database in storage RAM, create as many 64K segments as you like in that database, and put your data there.

> Has anyone implimented something like xmodem for error checking in serial
> transfers on the Palm. Thanks so much

I haven't seen any such, but Xmodem is a simple protocol to implement -- shouldn't be too tough.

Neal

Re: Data Storage and retrieval

Posted by [Mark Beckman](#) on June 10, 1999 at 12:38:19:

In Reply to: [Re: Data Storage and retrieval](#) posted by Neal Bridges on June 09, 1999 at 21:46:45:

(sorry about the extra post, I think I do that every time *sigh*)

> > Has anyone implimented something like xmodem for error checking in serial
> > transfers on the Palm. Thanks so much

I've seen xmodem in for a couple (several ?) of times over the years in magazine articles. One of them might have been Byte but I'm not sure.

Anyway a quick search on AltaVista found the link below. There were about 2500

hits for a search of +Forth +xmodem so you can probably find lots more.

- [xmodem in \(old\) forth](#)

Re: Data Storage and retrieval

Posted by [Mark Beckman](#) on June 10, 1999 at 12:34:14:

In Reply to: [Re: Data Storage and retrieval](#) posted by Neal Bridges on June 09, 1999 at 21:46:45:

> > I would like to use the Palm Pilot as a "smart" memory card. I will carry the
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> > Pilot out to field instruments, serially connect the devices and with
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> > connected the Palm Pilot and our field instrument, moved very small

amounts
of
> > data back and forth.

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data
> > structure be? Can I use the forth word allot to create a 1 mbyte
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> small amount of dynamic memory for use at runtime. You can, however, open a
> database in storage RAM, create as many 64K segments as you like in that
> database, and put your data there.

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> > transfers on the Palm. Thanks so much

> I haven't seen any such, but Xmodem is a simple protocol to implement --
> shouldn't be too tough.

> Neal

- [xmodem in \(old\) forth](#)

Re: Data Storage and retrieval

Posted by [Bill Stein](#) on June 10, 1999 at 00:03:45:

In Reply to: [Re: Data Storage and retrieval](#) posted by Neal Bridges on June 09, 1999 at 21:46:45:

> > I would like to use the Palm Pilot as a "smart" memory card. I will carry
the
> > Pilot out to field instruments, serially connect the devices and with
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> > transfer data from the field device memory to the Palm. I have
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> > connected the Palm Pilot and our field instrument, moved very small
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> > structure be? Can I use the forth word allot to create a 1 mbyte
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> small amount of dynamic memory for use at runtime. You can, however, open a
> database in storage RAM, create as many 64K segments as you like in that
> database, and put your data there.

> > Has anyone implimented something like xmodem for error checking in serial
> > transfers on the Palm. Thanks so much

> I haven't seen any such, but Xmodem is a simple protocol to implement --
> shouldn't be too tough.

> Neal

Any examples of the opening a database in storage ram that I could see? How
does one make the database 64K. (perhaps this is obvious, but not to me)

Thanks again

Bill

Re: Data Storage and retrieval

Posted by [Neal Bridges](#) on June 10, 1999 at 00:11:22:

In Reply to: [Re: Data Storage and retrieval](#) posted by Bill Stein on June 10,
1999 at 00:03:45:

> Any examples of the opening a database in storage ram that I could see? How
> does one make the database 64K. (perhaps this is obvious, but not to me)

It's not obvious in general. It's not hugely difficult to work with the Palm
OS, but you need to go through all the hoops.

There's example code in the File Area (newmemo.txt, by Allen Chen) that shows
opening the memopad and writing out new memos. This demonstrates all the
required steps, although it works with an existing database -- for your app
you'd want to create a new database to hold your data.

When you do a DmNewRecord, you specify the size of the block you want. 64K is
the max per record -- actually I think the exact figure is 64K minus 16 bytes
--

but you can have as many records as you want in a database.

Neal

Re: Data Storage and retrieval

Posted by [Bill Stein](#) on June 10, 1999 at 00:01:39:

In Reply to: [Re: Data Storage and retrieval](#) posted by Neal Bridges on June 09, 1999 at 21:46:45:

> > I would like to use the Palm Pilot as a "smart" memory card. I will carry the
> > Pilot out to field instruments, serially connect the devices and with
commands
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successfully
> > connected the Palm Pilot and our field instrument, moved very small
amounts of
> > data back and forth.

> > What are the limitations in terms of memory capacity? How large can a
data
> > structure be? Can I use the forth word allot to create a 1 mbyte
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> small amount of dynamic memory for use at runtime. You can, however, open a
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> database, and put your data there.

> > Has anyone implimented something like xmodem for error checking in serial
> > transfers on the Palm. Thanks so much

> I haven't seen any such, but Xmodem is a simple protocol to implement --
> shouldn't be too tough.

> Neal

More beginner questions - floats, output, and formatting

Posted by [Barry Ekstrand](#) on June 09, 1999 at 12:52:11:

With the help received on inputting / outputting through fields, I am making progress. I need a bit of help regarding formatting of the output, however. In my non-API program, I am using floating point variables and calculations. My final output is a value that needs to be formatted in a dollar and cents

format (2 decimal points). I assume I need to convert the floating point value

to a double length value, which I've done with:

```
pmt f@ f>d
```

where pmt is a fvariable. This, however, drops the fractional part of pmt off,

and I need the whole answer. Is there a way to format and display a floating point variable directly? If not, I thought I could take pmt and multiply by 100 to give a new fvariable, then convert it and finally divide by 100, but it

didn't work for me. Here is what I tried:

```
pmt 100 f* newpmt f!
```

```
newpmt f@ f>d 100 /
```

This resulted in a fatal lockup when I ran the program - what am I missing?

Finally, if I manage to convert the floating point value to a double length value, I believe I need to use

```
<# # # #S #>
```

to format the value to have 2 decimal places. Carl's example showed that you have to pass to the return stack first, then format, then bring back and pass to the output field, as in

```
>R <# # # #S #> R> string>Field
```

My question here is: is the passing to the return stack necessary or just preferable, and why in either case? I thought from Starting Forth I could format the value on the parameter stack?

As always, help is much appreciated.

Regards,

Barry Ekstrand

Re: More beginner questions - floats, output, and formatting

Posted by [Carl Jacobsen](#) on June 09, 1999 at 20:59:59:

In Reply to: [More beginner questions - floats, output, and formatting](#) posted by Barry Ekstrand on June 09, 1999 at 12:52:11:

> In my non-API program, I am using floating point variables and calculations.

> My final output is a value that needs to be formatted in a dollar and cents
> format (2 decimal points).

First, just a word of caution that using floating point numbers for dollars and cents is usually a Bad Idea...

Floating point "numbers" aren't numbers, they're approximations. They're good for scientific work, where you never have exact values anyway, but using them for financial work inevitably leads to accumulated rounding errors that are a pain to deal with. Not that I have any strong opinions on the subject... :-)

```
> I assume I need to convert the floating point value
> to a double length value, which I've done with:
> pmt f@ f>d
> where pmt is a fvariable. This, however, drops the fractional part of pmt
> off, and I need the whole answer. Is there a way to format and display a
> floating point variable directly?
```

I'm certainly not the expert on this (did I mention that I hate floats), but I believe that there was some discussion 'round these parts a while back about doing something like:

```
2 SET-PRECISION
...(and then)...

pmt F@ (f.)
```

to convert a float to text with 2 places after the decimal (suitable for passing to type, or string>Field, or whatever).

Neal? (or anyone else?) recall the outcome of that thread?

```
> ... If not, I thought I could take pmt and
> multiply by 100 to give a new fvariable, then convert it and finally
> divide by 100, but it didn't work for me. ...
```

Actually, the <#...#> words are designed to make it easy to insert an implied decimal point, so if you follow this route, the best thing would likely be to multiply the fvariable by 100, convert to a double, and then print it with a decimal point stuck in at the right place:

```
: '.' [CHAR] . HOLD ;
...(and then)...

pmt F@ 100e0 F* F>D
<# # # '.' #S #>
```

You could also do the last line as: <# # # [CHAR] . HOLD #S #> without the extra '.' word, but that wouldn't be as pretty :-)

```
> ... Here is what I tried:
> pmt 100 f* newpmt f!
> newpmt f@ f>d 100 /
> This resulted in a fatal lockup when I ran the program - what am I missing?
```

Hmm, not fetching pmt, 100 is a single-cell int, and the divide is a bit wrong :-) How about something like this?

```
pmt F@ 100e0 F* newpmt F!  
newpmt F@ F>D 1 100 M*/
```

```
> Finally, if I manage to convert the floating point value to a double length  
> value, I believe I need to use  
> <# # # #S #>  
> to format the value to have 2 decimal places.
```

(See above, discussion of putting in the decimal point.)

```
> ... Carl's example showed that you  
> have to pass to the return stack first, then format, then bring back and  
pass  
> to the output field, as in  
> >R <# # # #S #> R> string>Field  
> My question here is: is the passing to the return stack necessary or just  
> preferable, and why in either case? I thought from Starting Forth I could  
> format the value on the parameter stack?
```

Er, the deal with the return stack is/was that the field ID was on the stack on top of the double that we wanted to format. The >R and R> just gets the field ID out of the way for a while, while we turn the double into an address/length pair, pointing to the pretty formatted result string. Then the field ID gets brought back so that we can pass the address, length, and field ID to string>Field to do the actual output.

Make sense?

-- Carl

Re: More beginner questions - floats, output, and formatting

Posted by [Barry Ekstrand](#) on June 09, 1999 at 15:15:15:

In Reply to: [More beginner questions - floats, output, and formatting](#) posted by Barry Ekstrand on June 09, 1999 at 12:52:11:

Well, after posting and thinking about it, I realized I had mixed fixed and floating point values in my calculation. When I replaced 100 with 1e2 I can make it run IF I don't try to do the divide after the f>d. On this point my confusion is, why can't I divide by 100. afterward? Am I not dealing with a double length value? Still obviously needing guidance, what little I have learned is being dredged up from 20 years ago...

Barry

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> With the help received on inputting / outputting through fields, I am
```

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> progress. I need a bit of help regarding formatting of the output, however.
> In my non-API program, I am using floating point variables and
calculations.
> My final output is a value that needs to be formatted in a dollar and cents
> format (2 decimal points). I assume I need to convert the floating point
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> to a double length value, which I've done with:
> pmt f@ f>d
> where pmt is a fvariable. This, however, drops the fractional part of pmt
off,
> and I need the whole answer. Is there a way to format and display a
floating
> point variable directly? If not, I thought I could take pmt and multiply by
> 100 to give a new fvariable, then convert it and finally divide by 100, but
it
> didn't work for me. Here is what I tried:
> pmt 100 f* newpmt f!
> newpmt f@ f>d 100 /
> This resulted in a fatal lockup when I ran the program - what am I missing?
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> preferable, and why in either case? I thought from Starting Forth I could
> format the value on the parameter stack?
> As always, help is much appreciated.
> Regards,
> Barry Ekstrand

Re: More beginner questions - floats, output, and formatting

Posted by [Ron Doerfler](#) on June 09, 1999 at 15:56:30:

In Reply to: [Re: More beginner questions - floats, output, and formatting](#)
posted by Barry Ekstrand on June 09, 1999 at 15:15:15:

> Well, after posting and thinking about it, I realized I had mixed fixed and
> floating point values in my calculation. When I replaced 100 with 1e2 I can
> make it run IF I don't try to do the divide after the f>d. On this point my
> confusion is, why can't I divide by 100. afterward? Am I not dealing with a
> double length value? Still obviously needing guidance, what little I have
> learned is being dredged up from 20 years ago...

> Barry

> > newpmt f@ f>d 100 /

> > This resulted in a fatal lockup when I ran the program - what am I
missing?

Hi Barry,

Always ready to put my foot in my mouth, I'll suggest that
"/" is an integer divide, so even if you replace 100 with
the double value 100. as you suggest, you're just dividing
one half of the double by the other half. Perhaps you're
dividing 100 by 0?? You need a double divide, which I don't
know about.

Ron

Re: More beginner questions - floats, output, and formatting

Posted by [Neal Bridges](#) on June 09, 1999 at 16:02:27:

In Reply to: [Re: More beginner questions - floats, output, and formatting](#)
posted by Ron Doerfler on June 09, 1999 at 15:56:30:

> > Well, after posting and thinking about it, I realized I had mixed fixed
> and
> > floating point values in my calculation. When I replaced 100 with 1e2 I
> can
> > make it run IF I don't try to do the divide after the f>d. On this point

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> "/" is an integer divide, so even if you replace 100 with
> the double value 100. as you suggest, you're just dividing
> one half of the double by the other half. Perhaps you're
> dividing 100 by 0?? You need a double divide, which I don't
> know about.

Ron's right -- / is for single-cells. Check out M*/ for double-cell division
by
a single-cell.

Neal

Re: More beginner questions - floats, output, and formatting

Posted by [Ron Doerfler](#) on June 09, 1999 at 16:12:17:

In Reply to: [Re: More beginner questions - floats, output, and formatting](#)
posted by Neal Bridges on June 09, 1999 at 16:02:27:

> Ron's right -- / is for single-cells. Check out M*/ for double-cell
> division by a single-cell.

I see now that there's also M/MOD, which returns
the double divide result followed by an integer
that is the remainder, which may be what you want
for your cents. For this as well, though, you have
to use 100 instead of 100. as this is "mixed"
division of a double by an integer.

Ron

Re: More beginner questions - floats, output, and formatting

Posted by [Neal Bridges](#) on June 09, 1999 at 14:26:35:

In Reply to: [More beginner questions - floats, output, and formatting](#) posted by Barry Ekstrand on June 09, 1999 at 12:52:11:

Here's how to format a double-cell number as dollars and cents:

```
: d>#.## ( d. -- )
  tuck   \ save sign for later
  dabs   \ make double-cell positive
  <#
    # # [char] . hold   \ output two digits and a .
    #s                  \ output the rest of the number
    rot sign            \ with a negative sign if needed
  #>
;
```

Neal

Re: More beginner questions - floats, output, and formatting

Posted by [Neal Bridges](#) on June 09, 1999 at 14:27:38:

In Reply to: [Re: More beginner questions - floats, output, and formatting](#) posted by Neal Bridges on June 09, 1999 at 14:26:35:

> Here's how to format a double-cell number as dollars and cents:

[code snipped]

And -- before somebody else points it out -- the stack diagram was wrong, should be

```
( d. -- c-addr u )
```

> Neal

[OFFTOPIC] Neal did you get email?

Posted by [Serg Koren](#) on June 08, 1999 at 16:02:53:

Hi Neal,

I was wondering if you're getting any of my emails. I sent you my seive code as well as the ooForth code I'm interested in porting over to Quartus. I've been emailing to: nbridges@interlog.com. Is this the correct address? Or are you just busy. If so, please accept my apology for bugging you.

Cheers

Re: [OFFTOPIC] Neal did you get email?

Posted by [Neal Bridges](#) on June 08, 1999 at 17:09:22:

In Reply to: [\[OFFTOPIC\] Neal did you get email?](#) posted by Serg Koren on June 08, 1999 at 16:02:53:

> Hi Neal,

> I was wondering if you're getting any of my emails. I sent you my seive code as

> well as the ooForth code I'm interested in porting over to Quartus. I've been

> emailing to: nbridges@interlog.com. Is this the correct address? Or are you
> just busy. If so, please accept my apology for bugging you.

I got the ooForth code -- I replied with a confirmation. Something's getting lost somewhere. I don't think I've got the sieve code.

You've got the right address -- I've looked at the OO code and will be able to give you some feedback soon.

Neal

Newbie questions - field input / output

Posted by [Barry Ekstrand](#) on June 08, 1999 at 10:22:10:

I am trying to make the leap (huge, it seems) from the (very) basic understanding of Forth that I have garnered from Starting Forth and several tutorials to programming with PalmOS system calls. I have managed to put together some simple straight-up Forth programs that run fine in Quartus, but they do not use the Palm API at all. For references, I have the Palm documentation and the Rhodes & McKeenan Palm Programming book.

My first need is to understand how to take multiple field inputs, manipulate mathmatically, and then output to a field. For simplicity, say I have created a form that has 3 fields: 2 for numeric input data (a from FieldA and b from FieldB) and one for numeric output (FieldC), and also a button to create an event that does the calculation $a*b$ and then places the outcome into the FieldC. This would seem to be trivial, but I'm missing something in my studies of source from input.txt, PhoneDecode, and others.

I understand that the main event loop waits forever for an event to be initiated. In this hypothetical case, the button tap kicks things off, and my code would need to look at the input fields to grab the values there for manipulation. How do I pass each one to a declared variable for the calculation? If anyone has code example of this simplified program that they would be willing to share, it would be most helpful.

Some questions about what I see in input.txt, in the get-input code (snippet below):

```
inputFieldID FieldFocus
\ Set max. field length:
inputFieldID GetObjectPtr
2dup inputfldptr 2! \ for later
FldSetMaxChars
2dup
inputFieldID string>Field drop
\ Loop until a button pressed:
begin
ekey ctlSelectEvent = if
drop inputfldlen swap
event >abs itemid if \ OK button
inputFieldID Field>string drop
true
else 2drop false then
r> FrmReturnToForm
2r> at exit
then
again ;
```

What is happening in the first line with FieldFocus? I don't see FieldFocus

referenced again anywhere. 2 lines down, does GetObjectPtr simply point to the field so inputfldptr can get the length via FldGetTextLength (from earlier in the code)? Finally, is string>Field assigning the value from inputFieldID to a variable named Field (and conversely, later, Field>string putting it back into inputFieldID)?

Many apologies for the length of this posting and for the very basic questions. Any help will be much appreciated.

Regards,

Barry Ekstrand

Re: Newbie questions - field input / output

Posted by [Carl Jacobsen](#) on June 08, 1999 at 15:07:37:

In Reply to: [Newbie questions - field input / output](#) posted by Barry Ekstrand on June 08, 1999 at 10:22:10:

> ... I have managed to put
> together some simple straight-up Forth programs that run fine in Quartus,
> but they do not use the Palm API at all. ...

I was right where you are, a couple of months ago :-)

> My first need is to understand how to take multiple field inputs,
manipulate
> mathmatically, and then output to a field. For simplicity, say I have
created
> a form that has 3 fields: 2 for numeric input data (a from FieldA and b
from
> FieldB) and one for numeric output (FieldC), and also a button to create an
> event that does the calculation a*b and then places the outcome into the
> FieldC. This would seem to be trivial, but I'm missing something in my
> studies of source from input.txt, PhoneDecode, and others. ...
>
> ... How do I pass each one to a declared variable for the
> calculation? If anyone has code example of this simplified program that
> they would be willing to share, it would be most helpful.

Heh, I'm playing with just such code right now (and I must say, I'm very gratified to hear that someone's actually looking at my PhoneDecode source :-)

As to examples, see below :-)

> Some questions about what I see in input.txt, in the get-input code
> (snippet below): [snippet snipped]

First off, the "r> FrmReturnToForm" and "2r> at" are things you likely got from *input.txt* that take care of shutting down a popup form and restoring the cursor position -- you probably don't need this stuff here. Same for the code messing with field lengths; for your needs, the OS will pretty much take care of this stuff for you.

> What is happening in the first line with FieldFocus? I don't see
> FieldFocus referenced again anywhere.

FieldFocus (declared in the Fields memo in the Quartus library) positions the cursor (er, insertion point) into the specified field.

> 2 lines down, does GetObjectPtr simply point to
> the field so inputfldptr can get the length via FldGetTextLength (from
> earlier in the code)? ...

More or less, yes. The PalmOS API functions work (in sometimes mysterious ways) with **three** different types of references to fields (apologies if you already know this stuff):

- * ID numbers, which you assign in your resources,
- * Indexes, which are essentially offsets into an internal array of fields that the OS maintains (akin to file descriptors on Unix, if you're familiar with that; basically small integers which are only useful for handing back to other API calls),
- * Pointers, which are actual 32-bit absolute pointers to the data for a field, required by many API functions.

That said, GetObjectPtr (declared in Neal's Forms memo) takes a field ID number off the stack and replaces it with a field Pointer.

> ... Finally, is string>Field assigning the value from
> inputFieldID to a variable named Field (and conversely, later, Field>string
> putting it back into inputFieldID)?

string>Field would take a string (a pair of cells, giving address and length), and a field ID, and copy the string from Quartus's memory space to the field, so that it appears on the screen.

> Many apologies for the length of this posting and for the very basic
> questions. Any help will be much appreciated.

As Neal will tell you, we like basic questions here. (Heh, a few months ago, I was asking questions even more basic.)

Have a look at the following code, which I think will do what you want. It takes two numbers from screen fields, multiplies them, and displays the result, when you tap a Calc button. I actually stole most of the code from a simplification of something I'm currently working on. The numbers used are double-cell integers; if you want something after the decimal point, go find my "fixed" memo (in the "Fixed vs. Floating

Point" thread, further down). The output field will need to be an editable field (not entirely optimal) -- you can instead write over a label (examples given elsewhere), or use the string>anyField code from PhoneDecode to write on a non-editable field.

-- Carl

(Note, I've used CRID q__4 here; it's one of mine, registered for miscellaneous development use. If this code goes anywhere other than your own Pilot, you should go register your own CRID for the program.)

Here's the Pilrc-format resources (I did this with RsrcEdit, but then decompiled with prc2pilrc to get this output, because prc files don't display well :-)

```
// CRID: p4ap, Type: q__4

Form id 1100 at (0 0 160 160)
NoFrame
Begin
  Title "Multiply"

  Label "First Number:" id 1151 at (11 30) Font 1
  Field id 1101 at (80 30 40 12) Underlined MaxChars 8 Numeric

  Label "Second Number:" id 1152 at (0 50) Font 1
  Field id 1102 at (80 50 40 12) Underlined MaxChars 8 Numeric

  Label "Result:" id 1153 at (42 70) Font 1
  Field id 1103 at (80 70 40 12) MaxChars 8 Numeric

  Button "Calc" id 1104 at (65 90 30 12)
End
```

And here's the source code:

```
\ MultiplyExample - 99.6.8 10:25am CRJ
```

```
needs safe
needs ids
needs Events
needs Fields
needs resources
```

```
(ID) q__4 2CONSTANT crid
(ID) p4ap crid use-resources
```

```
1100 CONSTANT MyFormID
1101 CONSTANT FieldAFieldID
1102 CONSTANT FieldBFieldID
1103 CONSTANT ResultFieldID
```

1104 CONSTANT CalcButtonID

2VARIABLE FieldA

2VARIABLE FieldB

2VARIABLE Result

\ === Words to manipulate doubles

CREATE fd-buf 20 CHARS ALLOT

```
: field>d ( fieldID -- d. )
  >R fd-buf DUP R> Field>string
  0. 2SWAP >NUMBER 2DROP ;
```

```
: d>field ( d. fieldID -- )
  >R <# #S #> R> string>Field ;
```

```
: d* ( d1. d2. -- d1*d2. )
  >R >R 2DUP
  R> 1 M*/ 2SWAP
  R> 1 M*/ DROP 0 SWAP D+ ;
```

\ === Words to do all the real work

```
: grab-inputs ( -- )
  FieldAFieldID field>d FieldA 2!
  FieldBFieldID field>d FieldB 2! ;
```

```
: calc-results ( -- )
  FieldA 2@ FieldB 2@ d*
  Result 2! ;
```

```
: show-results ( -- )
  Result 2@ ResultFieldID d>field ;
```

\ === Main program

```
: go ( -- )
  MyFormID ShowForm
  FieldAFieldID FieldFocus
  BEGIN
    ekey ctlSelectEvent = IF
      event >abs itemid
      CalcButtonID = IF
        grab-inputs
        calc-results
        show-results
        FieldAFieldID FieldFocus
      THEN
    THEN
  AGAIN ;
```

Re: Newbie questions - field input / output

Posted by [Barry Ekstrand](#) on June 08, 1999 at 15:49:25:

In Reply to: [Re: Newbie questions - field input / output](#) posted by Carl Jacobsen on June 08, 1999 at 15:07:37:

Carl,

Thanks for the reply - the example appears to be exactly what I need. Tonight's Quartus session should go much better than last nights. I very much appreciate the assistance and am continually amazed at how supportive this forum is. Quartus is a great platform on which to learn and have fun.

I'll digest your reply before asking anything else - thanks for the help, and also thanks for posting the source to PhoneDecode. It has been helpful to analyze as well.

Regards,

Barry Ekstrand

Beginner - Help with tables

Posted by [Trevor Steele](#) on June 07, 1999 at 06:54:41:

As a newcomer to forth and having just found the discussion forum, I'm having a lot of fun learning the language and writing my first application.

I have compiled some forms using pilRC and pila which include a table. The forms seem to work fine with all the button objects functioning as I would expect, however the form with the table simply produces a blank screen. I can get Quartus to highlight various cells but that is all I can seem to do. Can someone tell me where I am going wrong. Should I be getting something other than a blank screen or am I missing something?

Looking forward to some assistance.

Trevor Steele

Re: Beginner - Help with tables

Posted by [Neal Bridges](#) on June 07, 1999 at 09:09:35:

In Reply to: [Beginner - Help with tables](#) posted by Trevor Steele on June 07, 1999 at 06:54:41:

> As a newcomer to forth and having just found the discussion forum, I'm having a lot of fun learning the language and writing my first application.

> I have compiled some forms using pilRC and pila which include a table. The forms seem to work fine with all the button objects functioning as I would expect, however the form with the table simply produces a blank screen. I can get Quartus to highlight various cells but that is all I can seem to do. Can someone tell me where I am going wrong. Should I be getting something other than a blank screen or am I missing something?

Hi Trevor. Tables in the Palm OS are hard to set up and use. Please send me your resource PRC and I'll have a look at it; sounds like a short document outlining where the pitfalls are is in order.

Neal

Re: Beginner - Help with tables

Posted by [Trevor Steele](#) on June 08, 1999 at 07:37:48:

In Reply to: [Re: Beginner - Help with tables](#) posted by Neal Bridges on June 07, 1999 at 09:09:35:

> > As a newcomer to forth and having just found the discussion forum, I'm having a lot of fun learning the language and writing my first application.

> > I have compiled some forms using pilRC and pila which include a table. The forms seem to work fine with all the button objects functioning as I would expect, however the form with the table simply produces a blank screen. I can get Quartus to highlight various cells but that is all I can seem to do. Can

> > someone tell me where I am going wrong. Should I be getting something other

> > than a blank screen or am I missing something?

> Hi Trevor. Tables in the Palm OS are hard to set up and use. Please send me
> your resource PRC and I'll have a look at it; sounds like a short document
> outlining where the pitfalls are is in order.

> Neal

Hi Neal

I have sent you the details of my prc resource file via e-mail. Let me know if
you find anything interesting (or even stupid)!

Trevor

Re: Beginner - Help with tables

Posted by [Ron Doerfler](#) on June 08, 1999 at 02:04:33:

In Reply to: [Re: Beginner - Help with tables](#) posted by Neal Bridges on June 07, 1999 at 09:09:35:

> Hi Trevor. Tables in the Palm OS are hard to set up and use. Please send me
> your resource PRC and I'll have a look at it; sounds like a short document
> outlining where the pitfalls are is in order.

There is a great tutorial at the link called "GNU Pilot SDK Tables HOWTO" at the URL given below. It steps you right through setting up a simple(?) table on the PalmPilot. Even though it has sample code in GCC, it appears to be directly useful to any SDK (as it claims).

The GCC tutorial on the web page is also nice, and I believe that the Tables tutorial is an appendix to it. Another interesting appendix discusses the PRC format, which is also a separate link on the web page.

Ron

Re: Beginner - Help with tables

Posted by [Ron Doerfler](#) on June 08, 1999 at 02:08:03:

In Reply to: [Re: Beginner - Help with tables](#) posted by Ron Doerfler on June 08, 1999 at 02:04:33:

>
> > Hi Trevor. Tables in the Palm OS are hard to set up and use. Please send me
> > your resource PRC and I'll have a look at it; sounds like a short document
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> The GCC tutorial on the web page is also nice,
> and I believe that the Tables tutorial is an
> appendix to it. Another interesting appendix
> discusses the PRC format, which is also a
> separate link on the web page.
> Ron

OK, the URL didn't take. In case it doesn't below, here it is as well:

http://www.iosphere.net/~howlett/pilot/GNU_Pilot.html

- [PalmPilot Tables Tutorial](#)

Re: Beginner - Help with tables

Posted by [Trevor Steele](#) on June 09, 1999 at 18:11:09:

In Reply to: [Re: Beginner - Help with tables](#) posted by Ron Doerfler on June 08, 1999 at 02:08:03:

> >
> > > Hi Trevor. Tables in the Palm OS are hard to set up and use. Please send

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> > discusses the PRC format, which is also a
> > separate link on the web page.

> > Ron

> OK, the URL didn't take. In case it doesn't below,
> here it is as well:

> http://www.iosphere.net/~howlett/pilot/GNU_Pilot.html

Hi again Ron

I have read the info you suggested and it has been useful. However when I tried out the example in the document I still get a blank screen!

I still haven't spotted the vital error(s) I must be making. Have either you or Neal any further suggestions?

Thanks

Trevor

Re: Beginner - Help with tables

Posted by [Serg Koren](#) on June 09, 1999 at 19:25:24:

In Reply to: [Re: Beginner - Help with tables](#) posted by Trevor Steele on June 09, 1999 at 18:11:09:

Double-check to make sure that the creator and type that you're specifying when you load the resource file is correct. This bit me for a while, since it turned

out I had 2 resource files with the same creator/type and was loading one with a blank form (the same FORM ID as well) instead of the one I wanted. I struggled thinking it was a problem with the code when in actuality it was a problem with the resource file ;-)

S

> > >
> > > > Hi Trevor. Tables in the Palm OS are hard to set up and use. Please
> send
> > me
> > > > your resource PRC and I'll have a look at it; sounds like a short
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> > > > outlining where the pitfalls are is in order.

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> > OK, the URL didn't take. In case it doesn't below,
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> > http://www.iosphere.net/~howlett/pilot/GNU_Pilot.html

>
> Hi again Ron

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tried
> out the example in the document I still get a blank screen!

> I still haven't spotted the vital error(s) I must be making. Have either
you
or
> Neal any further suggestions?

> Thanks

> T

Re: Beginner - Help with tables

Posted by [Trevor Steele](#) on June 08, 1999 at 05:09:56:

In Reply to: [Re: Beginner - Help with tables](#) posted by Ron Doerfler on June 08, 1999 at 02:08:03:

> >
> > > Hi Trevor. Tables in the Palm OS are hard to set up and use. Please
send
> me
> > > your resource PRC and I'll have a look at it; sounds like a short
document
> > > outlining where the pitfalls are is in order.
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> > appendix to it. Another interesting appendix.
> > discusses the PRC format, which is also a
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> > Ron

> OK, the URL didn't take. In case it doesn't below,
> here it is as well:

> http://www.iosphere.net/~howlett/pilot/GNU_Pilot.html

Thanks for the pointer Ron. I'll check out the tutorial and let you know how
I
get on with my "simple!" table.

Trevor

Another shared library flavor

Posted by [Bob Cunningham](#) on June 06, 1999 at 05:41:13:

This looks even better...

Re: Another shared library flavor

Posted by [Bob Cunningham](#) on June 06, 1999 at 05:43:17:

In Reply to: [Another shared library flavor](#) posted by Bob Cunningham on June 06, 1999 at 05:41:13:

Hmmm... Somehow, the URL didn't get posted. It seems a text title is required...

- <http://www.isaac.cs.berkeley.edu/pilot/GLib/GLib.html>

Quartus Forth libraries?

Posted by [Bob Cunningham](#) on June 06, 1999 at 05:34:26:

I was just reading an article about PalmOS shared libraries (at the URL listed below), and I found myself wondering if such a system could be adapted so that the QF interpreter could directly load a bunch of ready-to-use words (a wordlist?), and if the QF compiler could be used to generate such a beast.

I'd suspect the library would contain just 5 calls: The 4 calls required by PalmOS, and one more to help load the wordlist into QF.

Such a capability would let me develop incrementally, but also run debugged code at full compiled speed from the interpreter. The words would be the same, and I'd just need two versions of the "source" file: One that hooks to the shared library (more like a smart ".h" file), and one that contains the Forth source.

I could also use the same capability as a shell for data applications (nudge, nudge).

I suspect the compiled QF binaries do not use wordlists. But if they *could* do so, just for shared library use, then the library mechanism would be quite

general, and would also be very fast within the QF world. (Alternatively, the library could reference just enough of the QF compiler to tightly bind the library binary to the compiled QF program.) If anyone wanted to make a QF shared library usable by non-QF PalmOS apps, then a normal function table would

have to be built (maybe automatically from the wordlist?). That would be very useful in a generic sort of way, to allow a given language to be used for building those parts of a system it is best suited for, and interoperating with

similar libraries and/or programs written in other languages.

I have a dream... I want to do my multitasker in C (since I've already done several in that language). But it may require that "main" be written in C as well, which should be able to call the QF "go" of my application. But during development, I'd like the multitasker to be tested via the QF interpreter, along with the application code being developed. Having two-way interoperability between QF and C would create a whole that would be far greater than the mere sum of its parts.

There is also alot of legacy 68HC11 code I'd like to use. It is well tested and can easily be moved to a 68k processor. Doing so would save me about 20% of the total development effort (after allowing for the cost of porting). If I

can pack it into a library and make it palatable to QF, I can reference it from the QF interpreter, and later (hopefully) from a QF compiled program.

-BobC

- [How To Make Your Own PalmOS Shared Libraries](#)

Re: Quartus Forth libraries?

Posted by [Serg Koren](#) on June 06, 1999 at 21:36:00:

In Reply to: [Quartus Forth libraries?](#) posted by Bob Cunningham on June 06, 1999 at 05:34:26:

Hm,
Actually I was thinking about whether shared libraries were even possible under Quartus, and if so, how would one build one.

S

PS - Neal did you ever get the ooForth code email I sent?

> I was just reading an article about PalmOS shared libraries (at the URL listed

> below), and I found myself wondering if such a system could be adapted so that
> the QF interpreter could directly load a bunch of ready-to-use words (a
> wordlist?), and if the QF compiler could be used to generate such a beast.
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> PalmOS, and one more to help load the wordlist into QF.
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> code at full compiled speed from the interpreter. The words would be the
same,
> and I'd just need two versions of the "source" file: One that hooks to the
> shared library (more like a smart ".h" file), and one that contains the
Forth
> source.
> I could also use the same capability as a shell for data applications
(nudge,
> nudge).
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> library binary to the compiled QF program.) If anyone wanted to make a QF
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I
> can pack it into a library and make it palatable to QF, I can reference it
from
> the QF interpreter, and later (hopefully) from a QF compiled program.
> -BobC

Re: Quartus Forth libraries?

Posted by [Neal Bridges](#) on June 06, 1999 at 21:39:43:

In Reply to: [Re: Quartus Forth libraries?](#) posted by Serg Koren on June 06, 1999 at 21:36:00:

> Hm,
> Actually I was thinking about whether shared libraries were even possible
under
> Quartus, and if so, how would one build one.

I'm working with another user and his project to interface to an external
library written in C; it's going well. I'll keep you posted.

> S

> PS - Neal did you ever get the ooForth code email I sent?

I don't think so -- please resend.

Neal

Re: Quartus Forth libraries?

Posted by [Serg Koren](#) on June 06, 1999 at 23:21:17:

In Reply to: [Re: Quartus Forth libraries?](#) posted by Neal Bridges on June 06, 1999 at 21:39:43:

Hi Neal,

Here's a good ref on PalmOS shared libs you might be interested in:
<http://www.isaac.cs.berkeley.edu/pilot/shlib.html>

- [Shared Libs White Paper](#)

Re: Quartus Forth libraries?

Posted by [Neal Bridges](#) on June 07, 1999 at 00:03:26:

In Reply to: [Re: Quartus Forth libraries?](#) posted by Serg Koren on June 06, 1999 at 23:21:17:

> Hi Neal,
> Here's a good ref on PalmOS shared libs you might be interested in:
> <http://www.isaac.cs.berkeley.edu/pilot/shlib.html>

Thanks Serg -- I have that one in my files.

Neal

Re: Quartus Forth libraries?

Posted by [Neal Bridges](#) on June 06, 1999 at 20:23:12:

In Reply to: [Quartus Forth libraries?](#) posted by Bob Cunningham on June 06, 1999 at 05:34:26:

> I was just reading an article about PalmOS shared libraries (at the URL listed below), and I found myself wondering if such a system could be adapted so that the QF interpreter could directly load a bunch of ready-to-use words (a wordlist?), and if the QF compiler could be used to generate such a beast.

Compiled Quartus Forth code has almost the same density as the source; there's little advantage to allowing pre-compiled wordlists.

> I'd suspect the library would contain just 5 calls: The 4 calls required by PalmOS, and one more to help load the wordlist into QF.

> Such a capability would let me develop incrementally, but also run debugged code at full compiled speed from the interpreter. The words would be the same, and I'd just need two versions of the "source" file: One that hooks to the shared library (more like a smart ".h" file), and one that contains the Forth source.

There's no speed difference between code compiled via the Quartus Forth console, and code in a stand-alone app; both are native 68000 code, and run very fast indeed.

Neal

Re: Quartus Forth libraries?

Posted by [Carl Jacobsen](#) on June 06, 1999 at 13:45:37:

In Reply to: [Quartus Forth libraries?](#) posted by Bob Cunningham on June 06, 1999 at 05:34:26:

> ... could be adapted so that
> the QF interpreter could directly load a bunch of ready-to-use words (a
> wordlist?), and if the QF compiler could be used to generate such a beast.

Wow, I've been reading these plans you have, and they sound quite fantastic; good luck to you in your endeavor. If I may make an observation that may clear up a few things (or muddy the water considerably -- hopefully Neal correct me quickly if I've got it wrong): I don't believe Quartus has a separate Forth interpreter in the normal Forth sense; I think everything you type into Quartus gets fed pretty much directly to the compiler. This is why the word "see" can't just print the names of the component words in the manner of a Forth interpreter, but must instead disassemble the 68k code.

-- Carl

Re: Quartus Forth libraries?

Posted by [Bob Cunningham](#) on June 07, 1999 at 00:13:17:

In Reply to: [Re: Quartus Forth libraries?](#) posted by Carl Jacobsen on June 06, 1999 at 13:45:37:

Carl and Neal,

Being a _NOVICE_ Forth user (catch the underlining and emphasis), I'm finding the Forth Language and the Forth Execution Environment are more tightly bound together than any other high-level language (including Java and the JVM) or interpreted language (including Python, Perl, TCL, ECMAScript, etc.), and yet is smaller and faster than most.

One thing I'm trying to do is find the best ways to import my existing skill sets (mainly real-time embedded C) to Forth and become as productive as possible as soon as possible.

Part of being productive means being commercially successful, and that would require my Forth code be reused without having to give away the source. To me that means a library. That leads to enabling QF to easily and efficiently use

libraries written in any language. And, maybe, to enabling those other languages to make use of libraries generated from QF source.

Without binary library capabilities, QF limits itself to being a tool suited mainly for generating stand-alone Pilot applications. (Which ain't a bad thing!) And despite all the magnificent advantages inherent in QF, they are not unusable for building larger multi-component and multi-vendor applications (not that there are many of those on the Pilot!). This relegates QF to being, at best, a tool for rapid prototyping (requiring the resulting Forth code to be ported to another language) and/or for generating monolithic stand-alone applications (multiple source files, but just a single run-time interpreted or compiled product). And, as I said above, that's pretty darn good! But I seek the Holy Grail...

For comparison, I have used Python scripts to directly call code residing in DLLs and ActiveX components, allowing me to rapidly and easily build large flexible applications using free or inexpensive tools. And without having to learn much of anything about the target platform other than how to call the libraries (I Do Hate Windows).

I often negotiate my rates with clients based on whether I retain or yield control over the intellectual property I create while working for the clients.

While I want my clients to have fully working solutions, I also must be able to keep all rights to the source code to myself, so that I may be able to use it in support of future clients. I need to be able to ship executables and libraries, but not source.

If I am to use Forth extensively, I would need to be able to generate and access SOME form of library. The library format should be fully documented, but it need not match other PalmOS library formats (though it would be convenient if at least a translation between them was possible). In any event, on non-Palm systems I would have to create ROMable code, code that hopefully could be developed to a large degree on the Pilot using QF. And for 68K targets, being able to use QF to generate the actual binaries would be great (but NOT required or expected).

While I do not need this capability today, it would certainly be needed when the time comes to ship code. More importantly, it would greatly simplify the architecture (and feasibility) of any simple multitasker I would attempt to implement.

And that, in turn, would help me answer some questions about my current projects before going too much further:

1. How many Pilot development environments will I need?

If I need more than QF alone, then it weakens the odds of QF being used at

all,
no matter how great it is by itself. And believe me, I *do* want to use Forth! I suppose I want QF to be the "one and only" development environment I'll need on the Pilot. If that can happen, I'm already planning a UI protocol that will allow the Pilot to provide a full UI to any embedded device, and the protocol will primarily transfer LZW or DOC compressed Forth source code that will tell the Pilot everything it needs to know to talk to the device. It will be smaller and faster than trying to use a Java applet.

In fact, the first application I've done in QF, to talk to an avionics instrument, compresses down to just 944 bytes (when comments are stripped). A more sophisticated interface, and the required transfer protocol, would probably raise the size to 4KB or so. And when today's microcontrollers have 512KB of flash memory on the chip, that's a very small penalty. The cost of a Palm is vastly cheaper and more usable than most custom or commercially available solutions.

Using a single Forth development environment would make things like this faster and easier to do. Which for me, being a one man shop, means it makes such things possible.

For comparison, the closest thing I presently have to a "common" development environment is GCC + GDB, of which I presently have seven versions loaded on my main development PC, targeting over a dozen different CPUs. I also have processor-specific development environments from four manufacturers for five targets.

2. How portable will my code be?

If all my work were deliverable in Forth source, then I have no doubt I can find and port Forth interpreters to any target I may ever need. And that includes everything from "bare metal" to full-blown RTOSs (like QNX or OS-9) and more traditional targets such as PCs and workstations. I say this because it seems to me that porting Forth will be easier than porting many of my applications from scratch.

The ease with which Forth code written by one author can prove to be incomprehensible to another is well known. The efforts to standardize coding style and stack diagrams is great, but it can't eliminate one truth: Forth programmers create their own application-specific languages as a necessary step toward solving their problems. It is what Forth *does* and *is*. And that is hard to standardize. So I doubt my Forth source will be of much use to others, but that is not much of a hindrance for me and the work I do. If a client wants source, I'll just have to use another language. Unless they want to learn Forth!

Which leads to a closely related issue: Why does Forth retain all those cryptic symbolic words? If it wants to be APL, then why not go all the way? I've already started replacing "@" with "FETCH", "!" with "STORE", ">R" with "PUSHR", and the list goes on. Yes, it does take up slightly more room (like that's a problem with megabytes laying around), but it sure as hell makes the source code more readable and comprehensible. Which means it makes the language itself more productive. I'm mainly taking my choices from Forth itself, standard computer science terminology, and from words that are used in multiple contemporary computer languages. To me, this seems way too obvious for someone else (with greater Forth knowledge) not to have already done a better job of it. Does anyone know of such a set of words?

-BobC

Re: Quartus Forth libraries?

Posted by [Serg Koren](#) on June 07, 1999 at 09:42:36:

In Reply to: [Re: Quartus Forth libraries?](#) posted by Bob Cunningham on June 07, 1999 at 00:13:17:

> Which leads to a closely related issue: Why does Forth retain all those cryptic symbolic words? If it wants to be APL, then why not go all the way? I've already started replacing "@" with "FETCH", "!" with "STORE", ">R" with "PUSHR", and the list goes on. Yes, it does take up slightly more room (like that's a problem with megabytes laying around), but it sure as hell makes the source code more readable and comprehensible. Which means it makes the language itself more productive. I'm mainly taking my choices from Forth itself, standard computer science terminology, and from words that are used in multiple contemporary computer languages. To me, this seems way too obvious for someone else (with greater Forth knowledge) not to have already done a better job of it. Does anyone know of such a set of words?

>

Hm...and what pray tell is wrong with APL's token set? I find it elegant and concise. The fact that you have to buy a special keyboard is beside the point ;-).

Seriously though, I really think redefining the words is a bad idea. It's not really analogous to having #defines in 'c' remap the tokens at compile time. You're actually overloading the definition of the token and that really makes it confusing a year or two down the line when you're more comfortable with @ and ! and its cousins and you go back to your old code and try to figure out what the new words do and why you have a no-op overload.

Also, it takes more pentaps to do a FETCH than a @. I'd suggest if you really want to make your code clear you tack on some \ comments on the end of the line.

Pretty soon you'll get tired of doing that and drop the comments (no don't) and just use the @ and know what it does.

As to being intuitive just try to remember your first bout with sprintf in 'c'.
.. or ?

Re: Quartus Forth libraries?

Posted by [Bob Cunningham](#) on June 08, 1999 at 22:45:47:

In Reply to: [Re: Quartus Forth libraries?](#) posted by Serg Koren on June 07, 1999 at 09:42:36:

> As to being intuitive just try to remember your first bout with sprintf in 'c'.
> .. or ?

I still have to look up the meaning of the odd "%" now and then. That's why I so dearly love C++. It uses something closer to real words.

Sure, I'll learn and use ">R" and all the other obfuscators. I suppose my real effort shouldn't be in this forum, but with the committees handling the next update to the Forth standard. (Is there any such plan?)

Forth may well be the maximal definition of a minimal language. Any Computer Science student with exposure to stack architectures and languages should be able to read a brief description of Forth and then be able to make an educated guess of the functionality of a small Forth program by examining the source code. While authoring good Forth will certainly take more time, having the language itself facilitate comprehension by the non-Forth-initiated would have

several benefits:

1. Something that is easily understood by the uninitiated is more likely to be considered for use than something that isn't. That is, if I wanted to consider using Forth on a future project, I shouldn't have to learn too much "arcane" knowledge to grasp the language's capabilities and comprehend illustrative examples of same.

2. Actually, a reiteration of the above: If a cursory look would interest me in the language, I'd learn it just for the heck of it. Creating more Forth users would, I think, be a good thing. From what I've read, Forth had its heyday around '88 or '90, and since then it has nearly vanished into the dustbin of Dr. Dobb's Alternative Languages CD. Why? Its huge capabilities and small size were not great enough to overcome the limitation of its syntax in its competition against the juggernaut of the C language. That, and RAM and MIPS got cheap.

3. A computer language is a tool, nothing more. We must have several of them, at least, if we hope to minimize the time spent producing fast, tight, reliable software for any and every domain. The fewer the gratuitous differences between languages, that is, the greater the commonality of the appearance of the source text, the easier it will be to select and use the right tool for the right job, and to match it with appropriate personnel.

I have worked on projects where several languages were used, and the application domain expertise was all too often insignificant next to the language expertise. That is, the COBOL programmer who was a database expert was tasked with writing the mundane interfaces to legacy mainframe applications, while the database work was done by an embedded systems C programmer because the database chosen had to have its extension routines written in C. Evidently, management thought learning databases was easier than learning COBOL. They were wrong, and the project paid the price in reduced productivity.

What is unique within a language should (in an ideal world) have a syntax that is unique across languages, if possible. What is common, like stack operations, should use a common syntax. The evolution of the C++ standard has done precisely this, borrowing words from other languages when the meaning was

similar, and creating its own only when needed. I suppose we could all learn Ada: Ada looks like EVERY language, other than Forth, that is.

Any syntactic sugar I add to my code may momentarily confuse the small population of Forth programmers. But it will make my code massively easier for the vast population of non-Forth programmers to comprehend. Is there ANYTHING wrong with this? The Forth programmer can easily replace the offending definitions, something the non-Forth person cannot do.

I need my code to be as comprehensible to the non-Forth world as I can make it.

My clients would never allow me to deliver something they didn't understand. When the very symbols composing a language are non-intuitive, they should be clarified. If Forth were at least consistent in the naming of its own symbols,

the problem would be smaller. Why is the position of ">" and "<" in a word not

always consistent? Why use "D" and "2" in words, when either alone would do for both?

2! or not 2!, that is the question. I'm still reading that as "two bang".

But I do need an intuitive pair of letters to use in my Graffiti shortcut for "SETDBL". I know, I'll use "2!".

;^)

Re: Quartus Forth libraries?

Posted by [Neal Bridges](#) on June 08, 1999 at 23:15:29:

In Reply to: [Re: Quartus Forth libraries?](#) posted by Bob Cunnigham on June 08, 1999 at 22:45:47:

> 2. Actually, a reiteration of the above: If a cursory look would interest me in the language, I'd learn it just for the heck of it. Creating more Forth users would, I think, be a good thing. From what I've read, Forth had its heyday around '88 or '90, and since then it has nearly vanished into the dustbin of Dr. Dobb's Alternative Languages CD. Why? Its huge capabilities and small size were not great enough to overcome the limitation of its syntax in its

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I don't believe Forth's lack of mainstream recognition has anything to do with it being too efficient, or having any limitations in its syntax, but rather that it's had no institutional backing. The 'mainstream' languages have mostly all had educational or other governmental sponsorship.

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Even were you to find people who liked your new personal language, you'd be making converts to that language, not to Forth. They'd still have to learn Forth -- and unlearn your special translations.

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> always consistent? Why use "D" and "2" in words, when either alone would do for
> both?

The Standard (as with all standards) represents common practice. They did a splendid job of determining common practice when creating the '94 Standard.

The reason common practice is as it is will become clearer to you as you gain more experience with the language.

Neal

Ugly Duckling (Was: Quartus Forth libraries?)

Posted by [Bob Cunningham](#) on June 09, 1999 at 05:06:50:

In Reply to: [Re: Quartus Forth libraries?](#) posted by Neal Bridges on June 08, 1999 at 23:15:29:

> I don't believe Forth's lack of mainstream recognition has anything to do with
> it being too efficient, or having any limitations in its syntax, but rather that
> it's had no institutional backing. The 'mainstream' languages have mostly all
> had educational or other governmental sponsorship.

The 600 pound gorilla of languages, C, started as an insignificant part of an insignificant operating system. The approval gained by the OS is what brought the language to the fore. As I recall, C was not taught in colleges or sold commercially until after UNIX had first blazed the trail. And that explosion seemed to happen right after Berkeley started hacking UNIX and shipping the early BSDs. It wasn't taught to undergraduates back then.

And, for "thrifty" embedded systems, there is no competition for C other than Forth. But I would guess the number of embedded C installations to be about one million times that of Forth. Industry is not insane: They will use what works best OVERALL. Obviously C does that better than its competitors. Why doesn't Forth?

However, as available MIPS and RAM continue to explode, we are seeing C++ and Java make a determined push into the embedded world. Will C soon have a million to one use ratio with these languages? Maybe. But since C++ can be used as a "better C", what does it matter?

Then there are all the new mobile devices that sacrifice MIPS on the altar of power efficiency. Here we see gorilla C and newborn Forth as the primary languages, with others (such as Jump) struggling to lose enough weight to fit through the door. By the time the Palm XI comes out, the door will be plenty wide.

What then? Will Forth again lose its ability to attract legions of new converts? Will it fade and become a lunatic fringe religious sect?

If a few tweaks to the language could help broaden its appeal, why not? The old words could be retained forever so old code will never break (and the diehards wouldn't have to learn anything new), while the new aliases could make the

language less alien and more familiar. Even C++ has lots of ugly C baggage for compatibility, baggage it is hoped will fade away, though not much of it has been officially deprecated in the standard. Guess what? I don't use the old stuff (like sprintf) any more! I dropped it in a heartbeat the moment something easier came along. I think most Forth users would do the same.

And where is the Forth OOP "standard"? That plus a word cleanup would do wonders. Turn a wallflower into a babe. Why not?

Is it impossible to construct a strong enough argument for keeping Forth the way it is? Is Forth an also-ran by design or was it just bad karma? Should it stay that way? What must change for it to be otherwise?

Or is "Forth" a private club? Like those old "gentleman's" clubs in New York that didn't close until their last member died. Could be, could be.

> Even were you to find people who liked your new personal language, you'd be making converts to that language, not to Forth. They'd still have to learn Forth -- and unlearn your special translations.

That's why I mentioned the standards process. Anything I do now can be converted back and forth to anything else. If some revision of the standard imposes consistent naming rules, and aliases for all old names that don't meet the naming rules, then I can easily make my code adapt. A fast run through M4 or CPP would take only moments. And it would still be ANS Forth, and it would run on any ANS Forth system. It meets the current standard!

The fact that something is "different" does not necessarily mean it is "wrong".

My syntactic changes may not match some future rationalized standard, but they will be closer to it (at least in spirit) than today's code.

Is there any valid reason NOT to have "obvious" aliases for the more arcane Forth words be added to the Standard? It could not possibly hurt the language itself, since the only way Forth could reduce its stature would be to disappear completely. And this, above all, is something I'd like to prevent.

> The Standard (as with all standards) represents common practice. They did a splendid job of determining common practice when creating the '94 Standard.

> The reason common practice is as it is will become clearer to you as you gain more experience with the language.

"Common Practice" may be somewhat like "Common Wisdom": An oxymoron. The "best

practices" are seldom "common" in any profession. Standards defined to codify "common practice" are prevented from adding much in the way of innovation or repair. I believe Forth is in need of both, if it is ever to claim a larger niche and allow those of us who have learned it to be in high demand in the employment market.

I am both a Forth novice and enthusiast. I have waited a decade for a project I could use Forth on, and now that I have the chance, I'm taking it. And having thought about it for a decade, and with all the experience I've gained along the way, its flaws are just as obvious to me as its many strengths (even those I don't know how to use yet). I think it should be in far wider use than it is today, and it is a shame that it isn't. But surely anyone can see at least a few reasons why this is so. Why not add some fresh paint and new rubber to the old jalopy? Can't hurt.

Oh, yeah: As I said earlier, the changes I recommend DO NOT CONFLICT IN ANY WAY

WITH THE CURRENT ANS STANDARD! (Well, that's based on one full reading and a few searches of the Standard. Also, many of the Forth beginner's guides and tutorials I've seen explain : and ; by redefining a common Forth word. Stuff like ": POP DROP ;".) Programs using my modified syntax will meet every part of the standard, with no exceptions or omissions. Such programs will also run on any Standard Forth Machine (since I will ship the appropriate words with the program). I can stamp them front and back with the "This is an ANS Forth Standard Program" seal of approval.

Now, is that a strength or weakness of the Standard?

Re: Ugly Duckling (Was: Quartus Forth libraries?)

Posted by [Barry Marks](#) on June 10, 1999 at 20:34:40:

In Reply to: [Ugly Duckling \(Was: Quartus Forth libraries?\)](#) posted by Bob Cunningham on June 09, 1999 at 05:06:50:

I'm not a Forth programmer. In fact I've been doing more C than anything for the past 15 years. But I've been reading comp.lang.forth for a number of years and from what I've read there I think you're missing something.

I'm sure Forth programmers would like to see the language be more successful

but I don't think that's had a very high priority. I think Forth programmers work in Forth because they love working in Forth.

Barry

Re: Ugly Duckling -- a Swan

Posted by [Serg Koren](#) on June 09, 1999 at 11:09:28:

In Reply to: [Ugly Duckling \(Was: Quartus Forth libraries?\)](#) posted by Bob Cunningham on June 09, 1999 at 05:06:50:

> And, for "thrifty" embedded systems, there is no competition for C other than
> Forth.

Hm...I never considered 'c' to be thrifty....If 'c' is thrifty then Java must be
spartan? ;-) Or JavaLite? or PersonalJava? or EmbeddedJava?

> What then? Will Forth again lose its ability to attract legions of new
> converts? Will it fade and become a lunatic fringe religious sect?

I'm not sure Forth EVER drew legions. One of the problems with FORTH (and other
'niche' languages) is the lack of what I term the snowball effect. Someone
likes the language to write a decent book (no knocks on Brodie, but his books
are NOT well organized, lack an index, etc...but are wonderful beginner books
if
you can wade through the disorganization). People read the books and decide
they like the language and think..hey I can write another book (or a better
one). And so on. This REALLY didn't happen in Brodie's time. Nowadays you get
TONS of books on obscure (don't argue please) languages/dev environments such
as
Cold Fusion. Go to your local bookstore and see how many Cold Fusion books
you
can find...now see how many Smalltalk books...and FORTH books.

My point (if you missed it) is that FORTH programmers aren't usually very
good
at writing books (I'm not sure if it's a chicken or egg thing...FORTH makes
bad
writers or writers don't like FORTH because it's "unreadable and requires
words
like 'FETCH' instead of @". There aren't ANY real new FORTH books so people
don't know about the language and hence it's a 'niche' thing.

Like any language (computer or otherwise) you gain fluency and comfort with use.

You wouldn't translage French into English for fluent French speakers. You WOULD translate it to English speakers who don't speak French. Similarly, there's no need (or very little) to put verbose comments or aliases to tokens in

your code. The thing to do is to translate it for the English...that is WRITE a

book on it for the people who don't already use FORTH. (I was toying with writing a FORTH for Dummies on the Pilot book, but lack of time makes that difficult.)

Or if you're working on a true project and you need clearer comments then:

- Your target audience doesn't speak FORTH and you probably shouldn't be using

- it if you don't plan on maintaining it, and your sponsor doesn't plan on learning FORTH to fluency.

- You should document your application in a SEPARATE document with embedded source code with full explanation of what it does.

> If a few tweaks to the language could help broaden its appeal, why not?

I think this is a personal judgement on your part. I personally HATE and loath

c and C++. It would be a waste of time and foolish on my part to try to change

it so that I can be more comfortable with it and make it more useful and usable

to others...I'd end up with Java...or ObjectiveC. That isn't to say it wouldn't

work. The object-FORTH MOPS environment on the Mac is a good example of what can be done with FORTH (you still wouldn't like it, though).

Also, in my opinion "More verbose <> better". COBOL is self-documenting (or so

most seem to claim who code in COBOL.) Talk about a futile language. To do anything takes pages of setup. ANY language is self-documenting to those who are fluent in it.

> Is it impossible to construct a strong enough argument for keeping Forth the way

> it is? Is Forth an also-ran by design or was it just bad karma? Should it stay

> that way? What must change for it to be otherwise?

Same things that have to change for Smalltalk to be more acceptable. Or APL. The language doesn't have to change. The language that exists needs to be advertised (via books, articles, etc.) And of course FORTH needs to be used in-house of a few LARGE corporations. And Microsoft needs to come out with

FORTH++ which corrupts the language to make it non-standard. Then you could go to your local bookstore and your favorite CompUSA and buy 12 different versions of FORTH all the same (except the one from MS which crashes your system every 2 days and requires 1G of hard drive space to install...but that's the one that will sell.)

> Or is "Forth" a private club? Like those old "gentleman's" clubs in New York
> that didn't close until their last member died. Could be, could be.

Nothing wrong with that. What's your point? Things evolve. Things die. New things take their place. c gave way to C++ giving way to Java which will give way to ?????. Few claim C++ is just a better c nowadays. No one claims Java is a better C++. But all started with a really crummy version of c. FORTH *IS* growing. There ARE 'better' versions of FORTH out there (again I refer to MOPS for one.) Will FORTH ever have the following of C++ (or c?) I doubt it no matter HOW you change the tokens.

> The fact that something is "different" does not necessarily mean it is "wrong".

You are a lone voice in a storm. Well maybe the metaphor is strained, but I get the feeling you're still not fluent in the language enough to see it's benefits.

If people felt there was a problem with the language it would have evolved through the standards (and has), the fact that it hasn't in the direction you indicate implies that people (users of FORTH) are satisfied enough with it that they feel that your changes are unneeded.

Also, consider that FORTH (like APL) is for the most part language-independent.

You don't have to learn/read/understand English to code in these languages. Would your standard also propose aliasing the tokens to French? German? Italian?

Russian? If not, I think your ethnocentrism is showing ;-) How about comments? Would you propose everyone comment their code in English? Ever seen a German source file? It's commented in German if the program is used in-house.

> Is there any valid reason NOT to have "obvious" aliases for the more arcane
> Forth words be added to the Standard? It could not possibly hurt the language
> itself, since the only way Forth could reduce its stature would be to disappear
> completely. And this, above all, is something I'd like to prevent.

Sure you could present it (see above). We've been giving you valid reasons. You seem to dismiss them. Which is fine, but you're trying to move a train that's been travelling for many years. Again, personally, your suggestions would remove a lot of the beauty and elegance (and FUN) of coding in FORTH. I don't need to see FETCH to know that @ is fetch. AND it saves me 4 characters of typing that I have to do. THAT alone increases productivity, reduces errors, makes for more compact source files, etc. There are 4 valid reasons for not changing it. Conversely your option would increase characters typed, increase typos (bugs), increase file size, etc.

I suggest you use FORTH for a year before trying to change it. Then you'll appreciate the benefits (and detriments) of its syntax. If you still feel the same way, go for the standard, and best of luck (no sarcasm here).

What it comes down to:

- Very few commercial versions of FORTH
- Very few books (at all levels) based on FORTH
- Very few magazine articles based on FORTH
- Microsoft doesn't have a version of FORTH
- FORTH has evolved and is evolving (I've used FORTH since BEFORE the standards came into place).
- FORTH is concise and efficient.
- Fluent FORTH users have little if any problem with the syntax and tokens.
- FORTH is not COBOL, FORTRAN, MUMPS, APL, c, C++, Java, TAL, Pascal, Mouse, BrainF***, Python, PERL, or any other language. Don't try to make it into one of these.

I have a friend who doesn't understand why there are so many programming languages. Why have Java when you already have C? Or FORTRAN? What good is it? All it does is add to non-standardization of the industry and adds to the confusion. Extreme as this is (and he's a programmer), this is how he truly feels. Each language has its strengths and weaknesses and appropriate use. Computer languages aren't analogous to human languages in that if everyone spoke the same language everything would be better.

An alternative to trying to change the standard (which by definition is hard to do), is to come up with your own version of FORTH and try to convince people that your version is better than the current versions and better than the standard. One suggestion would be NOT to call it something like xxxFORTH. See what Java was able to do. All it is is a cleaned up version of C++ but they didn't call it C+++ or PowerC or something. I SERIOUSLY doubt a lot of people would have jumped on the Java bandwagon had it been named simply JavaC. A lot of newbie Java programmers have heard bad things about C++ and think that Java isn't related to C++ (until they get into it.) Be to FORTH as Java was to C++.

Be the Pied-Piper to garner the newbies to programmer. Converting the old curmudgeons will only give you a headache ;-)

I've yet to see a decent FORTH development environment. What you CAN do (and maybe ga

Re: Ugly Duckling -- a Swan

Posted by [Neal Bridges](#) on June 09, 1999 at 11:22:21:

In Reply to: [Re: Ugly Duckling -- a Swan](#) posted by Serg Koren on June 09, 1999 at 11:09:28:

> What it comes down to:

> - Very few commercial versions of FORTH

There's at least one for every major (and minor) platform, both desktop and embedded; for some platforms, many.

> - Very few books (at all levels) based on FORTH

True; very few. The market's wide open for anybody who wants to write one.

There's the Forth Programmer's Handbook, in print now, and Thinking Forth, which has been reprinted recently.

> - Very few magazine articles based on FORTH

Hey, I'm doing my best :) By the way -- my EXE article is online now at the EXE site.

> - Microsoft doesn't have a version of FORTH

I hate to think of the new 'standard' they would try to impose.

> - FORTH has evolved and is evolving (I've used FORTH since BEFORE the standards > came into place).

It is. Some adherents to older standards are resistant to the ANS Standard, but it's a beautiful Forth.

> - FORTH is concise and efficient.

Indeed. And ideal for on-board development.

> - Fluent FORTH users have little if any problem with the syntax and tokens.

This is true. It only takes one or two small projects to achieve this fluency,

and to gain semantic recognition of the various Forth idioms (an important step in learning any language).

> I've yet to see a decent FORTH development environment. What you CAN do (and
> maybe ga

You got cut off here, Serg. However, I can name SwiftForth and Win32Forth both as examples of Win32 Forths that have full integrated IDE environments. I find them both a little top-heavy in this regard, but all the bells and whistles are there.

Neal

Re: Ugly Duckling -- a Swan

Posted by [Serg Koren](#) on June 09, 1999 at 12:45:59:

In Reply to: [Re: Ugly Duckling -- a Swan](#) posted by Neal Bridges on June 09, 1999 at 11:22:21:

> > What it comes down to:
> > - Very few commercial versions of FORTH

> There's at least one for every major (and minor) platform, both desktop and
> embedded; for some platforms, many.

True, I stand corrected. I think what is more important is having shelf-space and visibility in stores where people who may want to program but aren't enamoured by Java/C could try it.

> > I've yet to see a decent FORTH development environment. What you CAN do (and
> > maybe ga

> You got cut off here, Serg. However, I can name SwiftForth and Win32Forth both
> as examples of Win32 Forths that have full integrated IDE environments. I find
> them both a little top-heavy in this regard, but all the bells and whistles are
> there.

Gack! well I was rambling anyway and it was the last half of the last sentence....

"...what you can do (and garner support) is come up with a decent IDE. I'm sure you could get a decent following and solve some of the issues re syntax and tokens with say, VisualFORTH....."

Just my 2 cents ;-) It's the frustrated writer in

Re: Ugly Duckling -- a Swan

Posted by [Bob Cunningham](#) on June 10, 1999 at 01:39:26:

In Reply to: [Re: Ugly Duckling -- a Swan](#) posted by Serg Koren on June 09, 1999 at 12:45:59:

I suppose I've managed to misstate my case, despite my effusive verbosity. To put this thread to rest, I suppose I'll briefly try a different tact, then agree to disagree.

I love the architecture of the Forth language, the use of the stack, the dictionary, implicit factorization, the interpreter that becomes a compiler that interprets...

I am amazed that a language with these capabilities has failed to "own" the market for prototyping languages and embedded interpreters. It's only architectural negative I see so far is the need for the program author to keep track of the stack as the program is being written. And that negative is mitigated by factorizing code thoroughly.

But the symbols used to access and implement that functionality are unnecessarily arcane and obtuse, and at the very least should have aliases of the noun/verb/adjective ilk (possibly abbreviated to conserve pen taps and Pilot screen space). Programmers rarely document their work properly, and even when they do, it will never eliminate the need to read the source code. I believe the symbols used to encode a language's meaning should closely map to the programmer's language space, rather than create its own.

Within the set of languages that have escaped academia, most languages are somewhat "readable" to the uninitiated professional, aside from Forth and APL (and maybe Lisp). I have studied at least 30 languages, source for which I've needed to reverse engineer and/or port, and am competent writing programs in 10 languages. From this perspective, Forth is ugly and obscure. (APL, though also obscure, isn't ugly.)

Certainly, I've oversimplified this issue and neglected related ones. Maybe Forth needs to die, or at least be left alone, and its innovative features be

harvested for use in a "newer, better" language. It has certainly happened before!

Remember UCSD Pascal? The language compiled to 16-bit wide P-Code instructions that ran on the stack-based P-Machine. Today's Java Virtual Machine is a stack-based machine using 16-bit instructions. But where did the P-Machine and P-Code come from? Though I have not been able to find any close link between them, I feel certain that Forth influenced the architecture and implementation of the P-Machine. It is almost as though the P-Machine was a compiled Forth program that accepted P-Code input. It was fast and compact, and enabled the Apple][and other computers to do in 64K what contemporary systems needed megabytes to do.

I attended UCSD in the early 80's, and had the privilege of being taught Pascal by Dr. Kenneth Bowles, just before he left academia to become an entrepreneur. My decision to attend UCSD was motivated by my desire to attend a school that encouraged professors to pursue research that changed things in ways that were readily comprehended. UCSD Pascal was exactly that kind of project, it being the easy to use culmination of substantial progress in several technologies: pseudo machines (they weren't called "virtual" back then), code optimization, linking, swapping, editing, and others.

And, like many Forths, the UCSD P-System could recompile itself, though the system tools themselves (executive, compiler, linker, editor, run-time) compiled to native code instead of P-Code for efficiency (the P-Code versions worked, if you had all day to wait).

In my eyes, Forth, UCSD Pascal, and the JVM are tightly linked. UCSD Pascal faded when computers gained MIPS and RAM, and the same may be true of Forth. Except Forth still exists at a low level, while I am aware of not even one contemporary UCSD Pascal user. And the JVM is taking its stack based instruction set and engine on a quest to make all processors look like the JVM.

I think we still need tools and languages that better serve the specific needs of the embedded environment, where MIPS are few and RAM is lean. Being able to prototype quickly and execute interpretively are powerful capabilities.

So, what will the next stack-based interpreted embedded language be? The present Forth isn't it, and hasn't been it for a long time. But should Forth be "reborn", or should it remain fossilized, and should we instead create a "Son of Forth"?

I suppose the 100% rejection my views have received in this forum should mean

something to me. I have chosen to view it as my own inability to communicate effectively combined with my lack of Forth expertise.

But I don't think that explains everything, since I can certainly claim I understand Forth (on an architectural level, at least), though I am not yet skilled in writing it. To borrow a musical metaphor: I can read sheet music, I understand music theory, and I appreciate a good performance, but I'm not yet an accomplished composer. And my complaint is that the music of Forth appears to me to be scored upside down, and with 11 lines on the staff. You can write the same music with a more conventional notation, and remove the sheet music notation as a barrier to entry for other musicians. The uniqueness of the sheet music is not an asset, it is a barrier. The main asset is the specialized architecture of the Forth Orchestra, and the unique features it brings to listeners and composers alike.

-BobC

PS: I never metaphor I didn't like.

Re: Ugly Duckling -- a Swan

Posted by [Neal Bridges](#) on June 10, 1999 at 02:46:27:

In Reply to: [Re: Ugly Duckling -- a Swan](#) posted by Bob Cunningham on June 10, 1999 at 01:39:26:

> I am amazed that a language with these capabilities has failed to "own" the
> market for prototyping languages and embedded interpreters.

Perhaps it's merely Forth's public profile that gives you this impression.
It's
in extraordinarily widespread use, especially in embedded systems.

> I believe the symbols used to encode a language's meaning should closely
map
> to the programmer's language space, rather than create its own.

If you want a language that's just for you, that nobody else will ever see or use -- sure, use your own keywords. But when you want to share code with others, or read others' code, you have to agree on the language. The set of Standard Forth words have evolved over a long period of time, and are not so arcane as you suggest -- they all use the Roman alphabet with a very few additional special symbols, all have pronunciations, all are easily distinguished one from the other, and all have mnemonic connection to their actions. I daresay Forth is one of the very few languages that could be easily

entered via voice-recognition.

And with Forth, the idea is not to write your application using Forth itself, but rather to write a lexicon of words that represent the factors of a given problem, and then to solve the problem using those words.

> Within the set of languages that have escaped academia, most languages are
> somewhat "readable" to the uninitiated professional, aside from Forth and
APL
> (and maybe Lisp). I have studied at least 30 languages, source for which
I've
> needed to reverse engineer and/or port, and am competent writing programs
in
> 10 languages. From this perspective, Forth is ugly and obscure. (APL,
though
> also obscure, isn't ugly.)

I know APL. I find it hideously ugly, from any visual standpoint -- obscure
symbols, often made from pairs of other obscure symbols typed one directly
overstruck atop the other. Certainly Forth suffers from none of that. If an
uninitiated reader came across Forth source, he would certainly be more
confused
by the fact that parameters are passed implicitly (via the stack) between
words
-- one of Forth's greatest strengths.

(It occurred to me today that Forth shares a number of properties with Lego
--
all the pieces connect implicitly, anyway you choose to plug them together;
no
special interfacing is required. And with Forth, you can design your own
bricks.)

> Certainly, I've oversimplified this issue and neglected related ones. Maybe
> Forth needs to die, or at least be left alone, and its innovative features
be
> harvested for use in a "newer, better" language. It has certainly happened
> before!

Forth is in no danger of dying, certainly not because of the way the Standard
words are spelled. It's alive, kicking, and stronger than ever, at least in
part (I hope) from my own contributions. It's been a 'secret-weapon' of
developers for many years; although there are those who would rather it stay
secret, that status is slowly changing. It is perhaps unique among languages
in
providing control over a system from the lowest machine-code levels all the
way
to the highest level of abstraction you could conceivably desire. And there
are
those (I am among them) who believe that learning to program well in Forth
makes
you a better developer in any language.

There will always be a 'newer' language. Such is the nature of the computing community; it suffers from fads. But a language stronger, more powerful, more flexible than Forth I have not found.

Forth has been called a "programmer amplifier" -- poor programmers write terrible Forth, while good programmers find that developing in Forth increases their productivity by as much as a factor of ten. As you might imagine, this leads good programmers to want to keep using Forth.

Standard Forth is beautifully engineered, not in small part due to the fact that it represents the distillation of decades of the best practices of some of the sharpest developers in the world -- developers with a keen eye for efficient code and careful resource utilization.

> In my eyes, Forth, UCSD Pascal, and the JVM are tightly linked. UCSD Pascal > faded when computers gained MIPS and RAM, and the same may be true of Forth.

> Except Forth still exists at a low level, while I am aware of not even one > contemporary UCSD Pascal user. And the JVM is taking its stack based > instruction set and engine on a quest to make all processors look like the > JVM.

Again, while Forth's public profile is not as great as, say, C, it is by no means a little-used language.

> I think we still need tools and languages that better serve the specific needs > of the embedded environment, where MIPS are few and RAM is lean. Being able >to prototype quickly and execute interpretively are powerful capabilities.

Handheld systems are definitely around to stay; the power in those devices will always be less than one can achieve on the desktop. And in no arena is the goal of more efficient code, written faster, not a worthy one. Working in Forth is an advantage now; it shall continue to be.

> So, what will the next stack-based interpreted embedded language be?

Bob, if you want to redesign a language you've only just started to learn, far be it from me to dissuade you. This discussion forum is, however, not the best place to do it.

I recommend `comp.lang.forth`; perhaps you can join forces with the other people who object to some aspect of the language. There's one fellow there who has regularly complained (for years) about the lack of Forth teaching materials,

without ever actually contributing any; another who is deeply concerned about certain fringe attributes relating to compilation state; at least one who thinks two stacks is far too few; several who feel the Standard should specify things it doesn't; and so on -- there have even been one or two over the years who felt that @ should be spelled FETCH. No end of such discussion is available.

I'm in a different camp. I implement Forth compilers, use Forth to write applications, and do my damndest to support others in that process. I don't strive for perfection, either in my work or in the tools I use -- just excellence. Forth fits that bill to a tee.

Having so said, if you have an interest in writing apps using Quartus Forth, you're in the right place. Did you get your first program working without fault? I remember working on it with you, but didn't hear the outcome.

Neal

Re: Ugly Duckling -- a Swan

Posted by [Serg Koren](#) on June 10, 1999 at 10:07:35:

In Reply to: [Re: Ugly Duckling -- a Swan](#) posted by Neal Bridges on June 10, 1999 at 02:46:27:

I agree with everything Neal said so I won't go there...

> > I am amazed that a language with these capabilities has failed to "own" the market for prototyping languages and embedded interpreters.

> Perhaps it's merely Forth's public profile that gives you this impression. It's in extraordinarily widespread use, especially in embedded systems.

This is what I was trying to get to (apparently ineffectively in my last harangue). Bob, you're confusing FORTHS public visibility with "popularity" or viability. True there is some correspondance. This is why I was saying if you want to have FORTH gain acceptance, publish books, magazine articles, release commercial FORTHS (that have shelf-space at your local CompUSA). Redefining the tokens on the other hand is very arbitrary and will NOT lead to FORTH being a more acceptable language. As I pointed out, FORTH is one of the few languages which is international. You do not need to know what FETCH means, in German, say.

As to stacks, yes you do have to worry about them, but as you pointed out

factoring helps.

As I was sort of hinting in the last response (which got chopped), I think many professional/commercial programmers nowadays are moving toward RAD, VisualIDEs, and worry about source code only when it breaks--even COBOL. As I stated, one way for FORTH to become more acceptable would be to come up with a friendly GUI development environment which hides the syntax from you (until you need to debug it.) And then get shelf-space at CompUSA and get someone to write a book about your environment that gets shelf space at Barnes & Noble, etc. Changing the tokens, or even the syntax won't make FORTH more popular in any significant way.

And who is to say that if you DID change the tokens from @ to FETCH that the next person down the line wouldn't like FETCH and would want to remap it to RETRIEVE or GET? When you get down to this level of detail in a language (naming tokens) it's a truly arbitrary and personal decision. It reminds me of an account I was working at where naming standards for programs were defined down to the sub-variable level (a variable name was encoded to represent various things such as subsystem, etc.) and people spent more time in meetings arguing the standard for a new type of variable for weeks on end such that no real coding got done and the project didn't come in on time (truth.) If you want to improve the language, it won't be done by changing token names. It will be done by adding new capabilities, or improving existing ones, or perhaps simplifying the syntax.hm...just had a thought....to take Bob's idea and factor it out...create a program that would parse FORTH code into human readable documentation replacing @ with FETCH and algorithmically putting verbiage around it ;-)

Sorry, my mind works in strange ways...

> I'm in a different camp. I implement Forth compilers, use Forth to write applications, and do my damndest to support others in that process. I don't strive for perfection, either in my work or in the tools I use -- just excellence. Forth fits that bill to a tee.

And Neal deserves a ton of kudos (and Snicker's bars) and thanks for a great product and the amazing (in most cases <15 minute turnaround on support here.)

I haven't used FORTH in a long time, and I for one am glad there's a decent

implementation that doesn't cost a ton and doesn't require a Windows box to run it on. The fact that it actually runs on a Pilot AND produces standalone apps, is more than I would have reasonably hoped for.

Thank you Neal.

S

---END DEBATE---

You can never win arguing politics, religion, coding and naming standards, best
co

Status (Was: Ugly Duckling -- a Swan)

Posted by [Bob Cunningham](#) on June 10, 1999 at 07:23:22:

In Reply to: [Re: Ugly Duckling -- a Swan](#) posted by Neal Bridges on June 10, 1999 at 02:46:27:

> Having so said, if you have an interest in writing apps using Quartus Forth,
> you're in the right place. Did you get your first program working without
> fault? I remember working on it with you, but didn't hear the outcome.

Works great, though the serial port seems to be a bit odd. My application locks up if it is run immediately after a Hot Sync, but does fine otherwise. It also used to lock up when I transitioned from the initial "attention" phase to normal communications. This was remedied by closing and reopening the serial port between the two phases (the baud rate is the same throughout).

I'm busy adding a GUI and a compressed logging function right now, and am hoping to integrate serial NMEA data from a GPS via the IR port. After that, I have an enormous amount of atmospheric modeling and navigation math to incorporate, which I'm trying to massage from elegant theory (integrals, exponentials and systems of ODEs) down to 16-bit arithmetic that can be done in real time.

I doubt the Palm is up to the full real-time task (too slow), but I'm hoping Forth is. The anticipated target system is at least 10x faster than a Palm, and it will have a DSP if I (desperately) need it.

Since I will continue to prototype in Forth, and hope to carry that all the way

to the final application on the target system, I'm also wondering about using the Palm as a remote display for the target, at least during development.

Tell me if this is innocently stupid or merely idiotic: Would it be much effort to support a remote GUI on the Palm merely by sending the stack parameters and QF xt for each GUI call via the serial port? Assuming, of course, the resources are on the Palm to start with. I suppose I'm looking for

a lightweight RPC for the PalmOS GUI functions in particular, and Quartus Forth

in general, that will allow me to partition an application with minimal effort. And, hopefully, without having to craft my own RPC from scratch (which wouldn't be that hard - I'm just trying to push everything off my plate that doesn't have to be there).

I'm also hoping I can make the serial and IR ports interrupt or event driven, since time spent polling them would be better used for number crunching, yet I

do not want to risk missing data from either device. I haven't started looking

into this, but does QF support installation of Forth interrupt or event handlers? All I'd need is something to support the protocol with each attached

device (simple) and buffer data to a global table as it comes in (also simple).

There's more, but that's enough for now. I've also been studying every example

I can find of Forth being used for complex math problems. I find my brain handles the stack architecture fine, except when having to translate ugly systems of algebraic equations to RPN. I think I'm addicted to parentheses.

-BobC

Re: Status (Was: Ugly Duckling -- a Swan)

Posted by [Neal Bridges](#) on June 10, 1999 at 10:33:53:

In Reply to: [Status \(Was: Ugly Duckling -- a Swan\)](#) posted by Bob Cunningham on June 10, 1999 at 07:23:22:

> Tell me if this is innocently stupid or merely idiotic: Would it be much
> effort to support a remote GUI on the Palm merely by sending the stack
> parameters and QF xt for each GUI call via the serial port? Assuming, of
> course, the resources are on the Palm to start with. I suppose I'm looking

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> a lightweight RPC for the PalmOS GUI functions in particular, and Quartus Forth
> in general, that will allow me to partition an application with minimal
> effort. And, hopefully, without having to craft my own RPC from scratch (which
> wouldn't be that hard - I'm just trying to push everything off my plate that
> doesn't have to be there).

You could do what you suggest, though then your protocol becomes Palm-specific;
if you're looking for portability I suggest you devise a simple protocol that could then be translated by your Quartus Forth app into the appropriate graphics calls.

> I'm also hoping I can make the serial and IR ports interrupt or event driven,
> since time spent polling them would be better used for number crunching, yet I
> do not want to risk missing data from either device. I haven't started looking
> into this, but does QF support installation of Forth interrupt or event
> handlers? All I'd need is something to support the protocol with each attached
> device (simple) and buffer data to a global table as it comes in (also simple).

The serial API can be set to buffer incoming data, which should suffice.

> There's more, but that's enough for now. I've also been studying every example
> I can find of Forth being used for complex math problems. I find my brain
> handles the stack architecture fine, except when having to translate ugly
> systems of algebraic equations to RPN. I think I'm addicted to parentheses.

You might try OPG, Wil Baden's code for translating floating-point algebraic into RPN. While you're working in integer math, the examples of how formulas are re-ordered by his program may prove useful. It's in the library.

When I'm translating a long formula into RPN, I start with named float variables
and an OPG translation of the required formula. That gives me a reference implementation, which I then break down to remove the variables.

Neal

Re: Status (Was: Ugly Duckling -- a Swan)

Posted by [Bob Cunningham](#) on June 11, 1999 at 03:48:42:

In Reply to: [Re: Status \(Was: Ugly Duckling -- a Swan\)](#) posted by Neal Bridges on June 10, 1999 at 10:33:53:

```
> > ... Would it be much
> > effort to support a remote GUI on the Palm merely by sending the stack
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specific;
> if you're looking for portability I suggest you devise a simple protocol
that
> could then be translated by your Quartus Forth app into the appropriate
graphics
> calls.
```

Being QF-specific may prove to be an asset. I'm hoping to migrate my eventual QF Palm application to my eventual target one piece at a time, from the bottom up. The final app will have a UI vastly different from the Palm, but I hope to retain the QF Palm UI as a testing, troubleshooting and calibration interface (waste not, want not). Plus, if I actually do port a Forth Machine to my target, then I will want to use the application itself to help debug the target implementation. To allow the app to be ported with minimal change (and keep the small amount of Palm-specific code), I'd only need a small set of "simple" RPC stubs on my target. No need for a full blown RPC with XDR or an ORB or anything like that.

A QF-specific RPC would be just fine, especially if it is the easiest, fastest and simplest way to achieve the desired functionality.

```
> > I'm also hoping I can make the serial and IR ports interrupt or event
driven,
> > since time spent polling them would be better used for number crunching,
yet I
> > do not want to risk missing data from either device. I haven't started
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> attached
> > device (simple) and buffer data to a global table as it comes in (also
> simple).

> The serial API can be set to buffer incoming data, which should suffice.

Doh! I need to do more PalmOS studying. All I think I'll need is 128 characters of serial buffer (any more and the data gets too stale). Is the IR similarly buffered? I hope to use the simplest RS-232 to IR converter I can find (maybe an Actisys unit), and connect it to the GPS.

> > I've also been studying every example
> > I can find of Forth being used for complex math problems. I find my brain
> > handles the stack architecture fine, except when having to translate ugly
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> When I'm translating a long formula into RPN, I start with named float variables
> and an OPG translation of the required formula. That gives me a reference
> implementation, which I then break down to remove the variables.

Doh! Doh! I had actually looked at that code, and thought I couldn't afford to incorporate it into my program. But use it as a preprocessor? YES! Nearly a third of my equations are already in the form of systems of low-order polynomials, so I'll run that through Wil Baden's code first.

Too cool. This project of mine is getting a whole lot more doable every day. If I were restricted to using C, I never would have started. Forth is absolutely the right language (though I'm still far from proficient in it), and Quartus on the Palm is the perfect development platform.

Many thanks!

-BobC

Re: Status (Was: Ugly Duckling -- a Swan)

Posted by [Neal Bridges](#) on June 11, 1999 at 10:28:54:

In Reply to: [Re: Status \(Was: Ugly Duckling -- a Swan\)](#) posted by Bob Cunningham on June 11, 1999 at 03:48:42:

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> characters of serial buffer (any more and the data gets too stale). Is the
> IR
> similarly buffered? I hope to use the simplest RS-232 to IR converter I can
> find (maybe an Actisys unit), and connect it to the GPS.

IR should also be buffered -- it uses the same UART circuitry.

> > When I'm translating a long formula into RPN, I start with named float
> variables
> > and an OPG translation of the required formula. That gives me a reference
> > implementation, which I then break down to remove the variables.

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> absolutely the right language (though I'm still far from proficient in it),
> and
> Quartus on the Palm is the perfect development platform.

Not a problem. Keep us posted on how it goes!

Neal

Re: Status (Was: Ugly Duckling -- a Swan)

Posted by [Bob Cunningham](#) on June 12, 1999 at 04:12:53:

In Reply to: [Re: Status \(Was: Ugly Duckling -- a Swan\)](#) posted by Neal Bridges on June 11, 1999 at 10:28:54:

> > This project of mine is getting a whole lot more doable every day.

>
> > If I were restricted to using C, I never would have started. Forth is
> > absolutely the right language (though I'm still far from proficient in
it),
> and
> > Quartus on the Palm is the perfect development platform.
> Not a problem. Keep us posted on how it goes!

Keep you posted? Hah! I'm expecting you (all) to help me build it! ;^)

On another topic, did you see the post in comp.lang.forth by Tom Zegub about
Factored Range Checking, where he discusses an article on Forth Indexing by
Michael Gassenenko

(<http://www.forth.org.ru/~mlg/CStyleIn/CStyleIndexing.html>)?

While I hope those words (or something like them) make it into the standard,
I
was very impressed by the simple syntax and the compact implementation.

-BobC

Re: Status (Was: Ugly Duckling -- a Swan)

Posted by [Neal Bridges](#) on June 12, 1999 at 10:08:33:

In Reply to: [Re: Status \(Was: Ugly Duckling -- a Swan\)](#) posted by Bob
Cunningham on June 12, 1999 at 04:12:53:

> On another topic, did you see the post in comp.lang.forth by Tom Zegub
about
> Factored Range Checking, where he discusses an article on Forth Indexing by
> Michael Gassenenko
(<http://www.forth.org.ru/~mlg/CStyleIn/CStyleIndexing.html>)?
> While I hope those words (or something like them) make it into the
standard, I
> was very impressed by the simple syntax and the compact implementation.

Just had a look. There are a number of ways of implementing arrays in Forth
--
the Forth Scientific Library uses a different one, for which they've put
together an extensive rationale.

I've never felt the need for run-time range-checking. But then, I've never
used
(or even seen before) a 'slanted' array where each row had a different number
of
elements; if I were out in that strange part of town, I might well want

range-checking :)

Neal

Re: Ugly Duckling (Was: Quartus Forth libraries?)

Posted by [Neal Bridges](#) on June 09, 1999 at 10:53:00:

In Reply to: [Ugly Duckling \(Was: Quartus Forth libraries?\)](#) posted by Bob Cunningham on June 09, 1999 at 05:06:50:

> That's why I mentioned the standards process. Anything I do now can be
> converted back and forth to anything else. If some revision of the standard
> imposes consistent naming rules, and aliases for all old names that don't
meet
> the naming rules, then I can easily make my code adapt. A fast run through
M4
> or CPP would take only moments. And it would still be ANS Forth, and it
would
> run on any ANS Forth system. It meets the current standard!

Bob, you might better raise this issue on the UseNet group comp.lang.forth --
it's been discussed there before, and hearing a range of responses might shed
more light on it for you. Also, the discussion of token replacement in C has
come up repeatedly on comp.lang.c; same issue, same rationale.

As I've said, I strongly believe you'll negatively impact the learning
process
if you rename tokens in the language, while simultaneously confusing others
who
wish to read your source.

Also, in the case of Quartus Forth (and others), renaming DROP as you suggest
via

```
: pop drop ;
```

will prevent the compiler from properly optimizing DROP.

Neal

Re: Quartus Forth libraries?

Posted by [Serg Koren](#) on June 07, 1999 at 09:32:47:

In Reply to: [Re: Quartus Forth libraries?](#) posted by Bob Cunningham on June 07, 1999 at 00:13:17:

> Part of being productive means being commercially successful, and that would
> require my Forth code be reused without having to give away the source. To me
> that means a library. That leads to enabling QF to easily and efficiently use
> libraries written in any language. And, maybe, to enabling those other
> languages to make use of libraries generated from QF source.

Yup I agree with this. Shared libs exist on the PalmOS already. I don't think we should be inventing our own (or reinventing the wheel). It would be terrific if Quartus were able to generate and call shared libs. First priority should be to call existing shared libs (generated via more common environments such as Metrowerks or the GCC environment), followed closely by having Quartus generate libraries standalone in the same format....makelib instead of makeprc.
Just my 2 cen

Re: Quartus Forth libraries?

Posted by [Neal Bridges](#) on June 07, 1999 at 02:57:03:

In Reply to: [Re: Quartus Forth libraries?](#) posted by Bob Cunningham on June 07, 1999 at 00:13:17:

> Part of being productive means being commercially successful, and that would
> require my Forth code be reused without having to give away the source. To me
> that means a library. That leads to enabling QF to easily and efficiently use
> libraries written in any language. And, maybe, to enabling those other
> languages to make use of libraries generated from QF source.

Source can be shrouded, of course. (Shrouding is a process wherein source code is scrambled -- the structure remains intact, but all the names in the source are made into random sequences of characters). And as I note in

another
thread, I'm working with another user to interface with an external C library
--
it's going quite well, and we'll document the process when it's all ticking
along.

Fundamentally you can access shared libraries just as you would from C; also,
you can call other PRCs by special launch-code, to similar effect. Once
Quartus
Forth stand-alone applications support launch codes (other than
SysAppNormalLaunch), you'll be able to create Quartus Forth stand-alone
modules
that can be called in similar fashion.

> And that, in turn, would help me answer some questions about my current
> projects before going too much further:

> 1. How many Pilot development environments will I need?

What tools you will require will depend on what you try to build, and what
challenges you face in the process. Use the tool that fits the job -- and
much
of knowing what you need will come from the development process itself.

Fortunately, Quartus Forth is an extraordinarily flexible tool that can be
used
in a great many ways. I'm happy to help as you go.

> 2. How portable will my code be?

Portability depends on your code. If you write native 68000 code, of course
you'll have restricted your targets; if you make heavy use of Palm OS
functions,
you'll also limit portability.

These considerations are not specific to Quartus Forth; the same
considerations
apply to application development in any other language, for any target.
Whenever you stray from what a core language provides, you're using
facilities
that raise portability issues.

> The ease with which Forth code written by one author can prove to be
> incomprehensible to another is well known. The efforts to standardize
coding
> style and stack diagrams is great, but it can't eliminate one truth: Forth
> programmers create their own application-specific languages as a necessary
step
> toward solving their problems. It is what Forth *does* and *is*. And that
is
> hard to standardize. So I doubt my Forth source will be of much use to
others,
> but that is not much of a hindrance for me and the work I do. If a client

> wants source, I'll just have to use another language. Unless they want to
> learn Forth!

While the process of creating a Forth application does produce a lexicon of new words, those new words are analogous to function names in, say, C, and present no significant barriers to understanding between programmers. The choice of good names is critical, but no more or less so than in other languages.

You'll find that some older Forth source is very hard to read; this is in part due to the widespread problem (in any language) of poor commenting and non-existent documentation, coupled with early Forth's use of 'blocks' to store source (each 'block' of source was 16 lines of 64 characters, edited with an integrated block editor -- developers had a tendency to cram as much as possible on each line, making readability a real issue). These limitations do not exist in modern Forth implementations, such as Quartus Forth.

> Which leads to a closely related issue: Why does Forth retain all those cryptic symbolic words? If it wants to be APL, then why not go all the way? I've already started replacing "@" with "FETCH", "!" with "STORE", ">R" with "PUSHR", and the list goes on. Yes, it does take up slightly more room (like that's a problem with megabytes laying around), but it sure as hell makes the source code more readable and comprehensible. Which means it makes the language itself more productive. I'm mainly taking my choices from Forth itself, standard computer science terminology, and from words that are used in multiple contemporary computer languages. To me, this seems way too obvious for someone else (with greater Forth knowledge) not to have already done a better job of it. Does anyone know of such a set of words?

I strongly recommend against this. There's a good reason it isn't done. While.

as a novice, you may find that such replacements aid in your recognition today, you are actually constructing barriers to your understanding of other developers' source, while simultaneously making your own code a source of mystery to other Forth developers.

To replace @ with FETCH is not to simplify anything; you've simply replaced one token with another. This would be akin to defining macros such as BEGIN and END in C, and using them instead of { and } -- nothing is achieved except total confusion on the part of other developers who try to read your source.

The set of Forth words as described in the Standard has evolved over many years,
and is in fact a very good and useable set. Once you've worked with them a bit,
@ and ! will be old friends with immediate semantic recognition for you.

Neal

Re: Quartus Forth libraries?

Posted by [Ron Doerfler](#) on June 08, 1999 at 01:44:12:

In Reply to: [Re: Quartus Forth libraries?](#) posted by Neal Bridges on June 07, 1999 at 02:57:03:

> The set of Forth words as described in the Standard has evolved over many years,
> and is in fact a very good and useable set. Once you've worked with them a bit,
> @ and ! will be old friends with immediate semantic recognition for you.

I remember several years ago when I started using external email at work that had the "@" symbol in the address. Whenever I read one off to someone else, I would say "fetch" and had to stop and correct myself. It puzzled a number of people, believe me.

I'm better now.

Ron

Re: Quartus Forth libraries?

Posted by [Carl Jacobsen](#) on June 07, 1999 at 04:04:09:

In Reply to: [Re: Quartus Forth libraries?](#) posted by Neal Bridges on June 07, 1999 at 02:57:03:

> > Which leads to a closely related issue: Why does Forth retain all those
> > cryptic symbolic words? If it wants to be APL, then why not go all the
> > way? I've already started replacing "@" with "FETCH", "!" with "STORE",
> > ">R" with "PUSHR", and the list goes on. ...

>
> I strongly recommend against this. There's a good reason it isn't done.
> While, as a novice, you may find that such replacements aid in your
> recognition today, you are actually constructing barriers to your
> understanding of other developers' source, while simultaneously making
> your own code a source of mystery to other Forth developers.

I strongly agree with Neal, and I note that you complain about Forth programmers creating their own app-specific languages, and then immediately start inventing your own private non-standard syntax :-)

> To replace @ with FETCH is not to simplify anything; you've simply
> replaced one token with another. This would be akin to defining macros
> such as BEGIN and END in C, and using them instead of { and } -- nothing
> is achieved except total confusion on the part of other developers who
> try to read your source.

It doesn't just keep others from reading your source, it slows down your own progress in learning the language (just as bringing an interpreter along to French class might make the time pass more quickly, but would interfere with actually learning the language). Better to dive in head first and learn to use the language the way it was intended before trying to make too many improvements ("When in Rome...").

I recall friends coming to C from a Pascal background, many years ago, and trying to do just what Neal mentions, setting up BEGIN and END macros -- it just adds to the confusion (and their argument was that C's syntax was too cryptic). I find rather that my brain can parse the shape "{" into "start of something" much faster than reading "B" "E" "G" "I" "N", collecting the letters together into the word "BEGIN", and translating that to "start of something" -- the latter is easier to learn, but in the long run the former is much easier to use.

-- Carl

Forth engine source?

Posted by [Bob Cunningham](#) on June 05, 1999 at 16:14:13:

I was wondering if anyone knows of a small Forth implementation with source code I could examine to learn more about the internal architecture. I just want something to play with that will allow me to develop and test a few ideas in ways that will be relevant or helpful toward implementing similar features in Quartus Forth.

From what little I've learned so far, I suspect the simplest place to insert an elemental multitasker would be within the dictionary. Actually, within the

interpreter, which would preface some non-inlined words with a code snippet to
to
very quickly check if a task switch is pending (or even just "salt" the execution path with poll code). If I use the simplest form of preemption, then
then
task switches would occur ONLY as a result of the first poll following hardware
hardware
activity, which would include timers set by the executive. At a minimum, there
there
will be a watchdog timer that will ensure no single task runs too long without
without
a poll succeeding and causing the the executive rechecking its queues. This mechanism would combine simple, fast polling with a fully interrupt-capable executive, allowing the best of both worlds (threads and tasks) to be used. The advantage of doing a poll between words ensures the stacks and dictionary are in known states, something fully preemptive multitasking does not guarantee. The poll itself will be less than 10 instructions in length, possibly as short as two.

However, since I am absolutely clueless about the internal structure of a compiled Quartus program, I have no idea if such a mechanism could be compiled
compiled
in to the binary.

The next best alternative would be a "heavy" implementation that would make extensive use of asynchronous callbacks. Beyond this level, however, I'd have to actually make PalmOS itself multitasking, so that multiple independent instances of the Quartus interpreter or compiled Quartus binaries could run simultaneously. And that would be way beyond the scope of anything I ever intend to do on the Palm platform!

So I'm only going to look at solutions that fall completely within the Forth environment. And the first thing I need to do is learn more about the internals of Forth stack implementation and use. Which means I'll need to play
play
with source code for an interpreter that isn't totally alien to Quartus Forth.
Forth.
There will be no need for anything close to ANSI compliance, just a "usable" system with a "realistic" internal architecture.

Any recommendations?

-BobC

Re: Forth engine source?

Posted by [Neal Bridges](#) on June 05, 1999 at 20:44:41:

In Reply to: [Forth engine source?](#) posted by Bob Cunningham on June 05, 1999 at 16:14:13:

> However, since I am absolutely clueless about the internal structure of a
> compiled Quartus program, I have no idea if such a mechanism could be
compiled
> in to the binary.

Quartus Forth generates native 68000 instructions -- it's not threaded or
otherwise byte-interpreted. If you want to insert code into certain words,
you
can do so directly -- for example:

```
needs asm68k  
code myword ( your code here ) end-code inline  
: TYPE myword TYPE ;
```

Note the use of the `INLINE` directive that causes 'myword' to be code-copied
into
new words.

If you'd like to investigate the structure of compiled apps, try
disasm, the Quartus Forth disassembler that ships with the
distribution.

Neal

Re: Forth engine source?

Posted by [Barry Marks](#) on June 05, 1999 at 18:39:37:

In Reply to: [Forth engine source?](#) posted by Bob Cunningham on June 05, 1999 at 16:14:13:

> I was wondering if anyone knows of a small Forth implementation with source
> code I could examine to learn more about the internal architecture. I just
> want something to play with that will allow me to develop and test a few
ideas
> in ways that will be relevant or helpful toward implementing similar
features
> in Quartus Forth.

> So I'm only going to look at solutions that fall completely within the
Forth
> environment. And the first thing I need to do is learn more about the

> internals of Forth stack implementation and use. Which means I'll need to play
> with source code for an interpreter that isn't totally alien to Quartus Forth.
> There will be no need for anything close to ANSI compliance, just a "usable"
> system with a "realistic" internal architecture.
> Any recommendations?

MiniForth on Simtelnet comes with asm source for the A86 assembler. I once modified it (in asm) to add features that were needed for an HP palmtop. I found the source pretty clear.

It's amazing how much you can do with an implementation of a language without really learning the language.

By the way, if you don't want asm, Pygmy Forth, on the same site in the same directory, has it's own source in Forth and will recompile itself easily.

Barry

- [Mini Forth](#)

How far can I push Quartus Forth?

Posted by [Bob Cunningham](#) on June 04, 1999 at 18:33:41:

Now that I have my simple app fetching data from my soaring (aviation) instrumentation via the serial port and scrolling it to the screen, I'm wondering just how far I can push the Pilot, PalmOS and Quartus Forth. I want to massively expand my little app:

1. I **think** I've come up with a way to interface a Garmin GPS to the IR port, and I will want to collect and process streaming GPS data at 9600 baud.
2. I need to combine the avionics and GPS data together with tons of hairy math (trig, derivatives, ODEs). While many of the formulae will be integer-based and table-driven (at least I hope so), some floating point will still be required (mainly for renormalization).
3. I want to display as much information as possible as fast as possible on the Palm screen, with about a dozen items being displayed and updated twice each second, using moving bar graphs overlaid with the numeric values.

Prior (simpler) implementations of a subset of this functionality required

about 25% of the code to be hand assembled, then divided up among four 8-bit microcontrollers. I'd like to do all of it on the PalmPilot, at least for prototyping purposes, so that software design and development can lead hardware development.

I am fairly confident I can make everything fit and go fast enough (for proof of concept) using Code Warrior. Can I do it using Quartus Forth? If I can, I sure would like to, since piecewise interactive self-hosted development beats the living daylights out of the alternatives, at least where cost, convenience, productivity and mobility are concerned. My initial success with Quartus Forth has greatly encouraged me, but I don't want to encourage myself to run off any cliffs.

So here are a few questions I have about the major differences between the end result of using Quartus Forth for my R&D effort vs. Code Warrior (or GNU or whatever). That is, the Code Warrior binary executable vs. the Quartus binary executable vs. Quartus interpreted execution.

- A. What is the "largest" app Quartus Forth can run interpretively? Compiled?
- B. How does compiled Quartus "code density" compare to Code Warrior? Speed?
- C. What is the speed difference for doing tons of integer math? Floating point?
- D. Is there any speed difference for intensive display usage? Can I bypass the PalmOS graphic API in Quartus Forth (as I can in Code Warrior)?
- E. How close can I get to true cooperative multi-threading/tasking using Quartus Forth? Preemptive? (I need at least 4 threads: Avionics, GPS, Calculation, Display.)

You may well ask something like: "Bob, why don't you get a clue and use your laptop for this?" Well, the simple answer is that the laptop is too big, too heavy, and the batteries don't last long enough. And the reason that's the simple answer is that I will be velcroing all this gear together and attaching it to myself and my paragliding harness, then I'll be taking it up for frequent test flights to ensure the hardware and algorithms work properly under actual soaring conditions.

I intend to use Quartus Forth for as much of my prototyping as I possibly can. But can I integrate everything together and take it flying? How far along this

path can I ask Quartus Forth to take me?

Thanks for a fantastic product! I was sitting in Starbucks this afternoon when

I thought of a cleaner way to write some of my code. Bang! Out comes the Pilot. Open the Memo with my code, edit in the changes, switch to Quartus, enter the shortcut to load the revised code (which has a "go" at the end), and watch it being parsed and executed!

I want the freedom to do this when I'm at a flying site in the middle of nowhere, miles away from the nearest telephone or electrical outlet.

Of course, I could try to use OnBoard C, but C has the nasty habit of producing way too many files, some of which tend to grow way too large. Would they fit in the Pilot? Forth, with it's encouragement of fine-grained "factorization" of code and compressed semantics, can fit far more functionality into a given amount of text. Making it ideally suited for development use on devices with small screens and limited memory, just from a text storage and editing perspective.

Verbosely Yours,

-BobC

Re: How far can I push Quartus Forth?

Posted by [Neal Bridges](#) on June 04, 1999 at 19:07:14:

In Reply to: [How far can I push Quartus Forth?](#) posted by Bob Cunningham on June 04, 1999 at 18:33:41:

> So here are a few questions I have about the major differences between the end
> result of using Quartus Forth for my R&D effort vs. Code Warrior (or GNU or
> whatever). That is, the Code Warrior binary executable vs. the Quartus
binary
> executable vs. Quartus interpreted execution.

> A. What is the "largest" app Quartus Forth can run interpretively?
Compiled?

Quartus Forth apps are single-segment -- 64K of code (plus approximately 32K of global data). The compilation workspace is 32K, and the kernel is 20K -- compilation of an app extracts code from both the workspace and the kernel, so

at present a compiled application's code segment might possibly be as large as 52K. I can expand the workspace size, but bear in mind it's Forth -- the code is highly compact. So far only one user has written an application that even came close to being that large, and it's a biggie.

I might also mention that Quartus Forth version 2 has an enhanced optimizer that compiles code even more tightly.

> B. How does compiled Quartus "code density" compare to Code Warrior? Speed?

The code is more dense (no stack frames to manage) and comparably fast -- both compilers produce optimized native 68000 code.

> C. What is the speed difference for doing tons of integer math? Floating point?

Integer operations will be comparably fast.

Using Quartus Forth's built-in floats, you'll run faster than CodeWarrior. Quartus Forth has a fast single-precision floating-point library built in.

> D. Is there any speed difference for intensive display usage? Can I bypass the PalmOS graphic API in Quartus Forth (as I can in Code Warrior)?

No difference in speed -- I'm not sure why you'd want to bypass the Palm OS for display output, but you can do it if you so choose. You described a dozen or so lines of output, some of those being graphical bars, displayed twice a second -- the Palm can easily do that.

> E. How close can I get to true cooperative multi-threading/tasking using Quartus Forth? Preemptive? (I need at least 4 threads: Avionics, GPS, Calculation, Display.)

While the very bottom-most layer of the Palm OS supports threading, none of that functionality is available at the application level. However, since your data is coming in as a stream, why do you need threads at all? A simple conditional structure that parses the input data should suffice nicely.

> You may well ask something like: "Bob, why don't you get a clue and use your laptop for this?" Well, the simple answer is that the laptop is too big, too heavy, and the batteries don't last long enough. And the reason that's the simple answer is that I will be velcroing all this gear together and

attaching

> it to myself and my paragliding harness, then I'll be taking it up for frequent
> test flights to ensure the hardware and algorithms work properly under actual
> soaring conditions.

> I intend to use Quartus Forth for as much of my prototyping as I possibly can.

> But can I integrate everything together and take it flying? How far along this

> path can I ask Quartus Forth to take me?

As you describe your goals, I certainly think you can use Quartus Forth to do just what you're looking for. Of course I'm happy to help along the way.

> Thanks for a fantastic product! I was sitting in Starbucks this afternoon when

> I thought of a cleaner way to write some of my code. Bang! Out comes the Pilot. Open the Memo with my code, edit in the changes, switch to Quartus, > enter the shortcut to load the revised code (which has a "go" at the end), and

> watch it being parsed and executed!

That's one of the best parts of being able to develop on-board, in a language (Quartus Forth) that's conducive to being written with a stylus -- ideas aren't lost to time.

> I want the freedom to do this when I'm at a flying site in the middle of > nowhere, miles away from the nearest telephone or electrical outlet.

> Of course, I could try to use OnBoard C, but C has the nasty habit of producing

> way too many files, some of which tend to grow way too large. Would they fit

> in the Pilot? Forth, with it's encouragement of fine-grained "factorization"

> of code and compressed semantics, can fit far more functionality into a given

> amount of text. Making it ideally suited for development use on devices with

> small screens and limited memory, just from a text storage and editing > perspective.

C is entirely too wide horizontally, requires too many special symbols, and is too verbose for ease-of-use on the Palm itself. As you say, development on-board requires a concise language that lends itself to short definitions, easily read on the Palm's small screen -- Quartus Forth fits that bill perfectly.

I don't wish to evangelize, but once you're accustomed to thinking in Forth, it

becomes an extremely flexible and powerful tool -- in my experience, far more so than C.

Bob, as will all apps, build it a piece at a time -- prototype each section and see how fast it runs under Quartus Forth. I think you'll be quite pleased.

Neal

Re: How far can I push Quartus Forth?

Posted by [Bob Cunningham](#) on June 04, 1999 at 22:47:11:

In Reply to: [Re: How far can I push Quartus Forth?](#) posted by Neal Bridges on June 04, 1999 at 19:07:14:

> I might also mention that Quartus Forth version 2 has an enhanced optimizer that
> compiles code even more tightly.

Hmmm! I've been toying with how I might implement true multitasking in QF, and

I've drifted toward having a complete set of stacks per task with the dictionary (wordlists) being shared. A small executive could enforce the few needed rules. But the executive may need some instructions the current assembler doesn't directly support. Will the assembler in QFV2 support more of

the instruction set? Not that it's a big issue: I think I could kludge my own code together to emit the few such instructions that may be needed.

> > E. How close can I get to true cooperative multitasking/threaded using
> > Quartus Forth? Preemptive? (I need at least 4 threads: Avionics, GPS,
> > Calculation, Display.)

> While the very bottom-most layer of the Palm OS supports threading, none of that

> functionality is available at the application level. However, since your data

> is coming in as a stream, why do you need threads at all? A simple conditional

> structure that parses the input data should suffice nicely.

The data will be arriving at different times, and calculations will need to be "fired" when the required operands becomes available (data flow model).

The

display and audio will probably be updated on fixed intervals to minimize flickering. All this assumes I will be running the CPU flat out, and that I

will have to dynamically allocate the CPU to the calculations having the greatest priority (due either to conditions within the input data or the values of prior results). Some of the algorithms still have some NP-like theoretical performance times, and until I find suitable approximations, I may actually have to spread individual calculations over multiple cycles of input data acquisition and display update. Ugh! I'm trying to look at the worst now, identify the likely impasses, and focus some effort there even though I still have much preliminary development to do. Multitasking/threaded would sure simplify things.

> I don't wish to evangelize, but once you're accustomed to thinking in Forth, it > becomes an extremely flexible and powerful tool -- in my experience, far more so > than C.

Though I'm still the greenest of neophytes, it is absolutely clear to me that Forth in general, and Quartus Forth on the Pilot in particular, is the ideal development language and environment for exactly the situation I find myself in:

1. Ideal for single-person development (though I have no idea how I'd structure a team effort using Forth!).
2. Small environment, small language, highly extensible, fast interpretation. It fits in and runs fast on the Pilot.
3. Encourages an almost anal degree of functional decomposition, mainly because large Forth words quickly become unmaintainable and incomprehensible. Which is exactly what a rapid prototyping and iterative development environment needs.

One last thing: Let's assume my program won't fit within the interpreter as one grand lump. Can I compile parts of it and have them execute together? That is, can I create shared libraries (DLLs) of compiled code, and have that code called from either the interpreter or another piece of compiled code? I'm hoping I can do something like this to get completely away from any 64K limits, gaining as many 64K segments as will fit within the free memory of the Pilot, and also as one possible device to help implement multitasking/threaded.

The main problem may be getting all the code libraries to cooperate in their use of the stack(s), both with other pieces of compiled code as well as with the interpreter. If your executables retain (and use) the R stack, it might just be possible. If the S stack is kept as well, it would be much easier!

-BobC

Re: How far can I push Quartus Forth?

Posted by [Neal Bridges](#) on June 04, 1999 at 23:11:17:

In Reply to: [Re: How far can I push Quartus Forth?](#) posted by Bob Cunningham on June 04, 1999 at 22:47:11:

> Hmmm! I've been toying with how I might implement true multitasking in QF, and
> I've drifted toward having a complete set of stacks per task with the
> dictionary (wordlists) being shared. A small executive could enforce the few
> needed rules. But the executive may need some instructions the current
> assembler doesn't directly support. Will the assembler in QFV2 support more of
> the instruction set? Not that it's a big issue: I think I could kludge my own
> code together to emit the few such instructions that may be needed.

What instructions are those? I thought *asm68k* had all the 68000 instructions. Are you sure you're not thinking of 68020 or later instructions?

When you're thinking about this, bear in mind that there's very little dynamic RAM available -- and the Palm OS calls aren't reentrant. Neither are some of the Quartus Forth kernel words. You might find it difficult to do any useful multitasking.

> > > E. How close can I get to true cooperative multitasking/threaded using
> > > Quartus Forth? Preemptive? (I need at least 4 threads: Avionics, GPS,
> > > Calculation, Display.)

> > While the very bottom-most layer of the Palm OS supports threading, none of
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The

> display and audio will probably be updated on fixed intervals to minimize
> flickering. All this assumes I will be running the CPU flat out, and that I
> will have to dynamically allocate the CPU to the calculations having the
> greatest priority (due either to conditions within the input data or the
values
> of prior results). Some of the algorithms still have some NP-like
theoretical
> performance times, and until I find suitable approximations, I may actually
> have to spread individual calculations over multiple cycles of input data
> acquisition and display update. Ugh! I'm trying to look at the worst now,
> identify the likely impasses, and focus some effort there even though I
still
> have much preliminary development to do. Multitasking/threaded would sure
> simplify things.

I think in this case it will radically complicate things to try and implement
a
prioritized pre-emptive multitasking engine that doesn't add an additional
CPU
load. I suggest you start by prototyping the functions in your app and seeing
just how long it takes to run your calculations; you may find you can do what
you need to do much more simply. Small steps, building to a whole -- the best
methodology for tackling big projects.

> Though I'm still the greenest of neophytes, it is absolutely clear to me
that
> Forth in general, and Quartus Forth on the Pilot in particular, is the
ideal
> development language and environment for exactly the situation I find
myself
in:

> 1. Ideal for single-person development (though I have no idea how I'd
> structure a team effort using Forth!).

That's a subject better discussed on comp.lang.forth -- it's been done
successfully, by Forth Inc. and others.

> 2. Small environment, small language, highly extensible, fast
interpretation.
> It fits in and runs fast on the Pilot.
> 3. Encourages an almost anal degree of functional decomposition, mainly
> because large Forth words quickly become unmaintainable and
incomprehensible.
> Which is
> exactly what a rapid prototyping and iterative development environment
needs.

That's a good assessment.

> One last thing: Let's assume my program won't fit within the interpreter as
one

> grand lump. Can I compile parts of it and have them execute together? That
> is, can I create shared libraries (DLLs) of compiled code, and have that
code
> called from either the interpreter or another piece of compiled code? I'm
> hoping I can do something like this to get completely away from any 64K
limits,
> gaining as many 64K segments as will fit within the free memory of the
Pilot,
> and also as one possible device to help implement multitasking/threaded.
> The main problem may be getting all the code libraries to cooperate in
their
> use of the stack(s), both with other pieces of compiled code as well as
with
> the interpreter. If your executables retain (and use) the R stack, it might
> just be possible. If the S stack is kept as well, it would be much easier!

As I mentioned previously, you can write truly big applications in 64K of
Forth

--if there's a need, I'll expanding the compiler to allow multi-segment
apps.

I've already mapped out how it'll be implemented. Nobody's banging their head
against the top yet, though.

Neal

Re: How far can I push Quartus Forth?

Posted by [Bob Cunningham](#) on June 05, 1999 at 04:07:43:

In Reply to: [Re: How far can I push Quartus Forth?](#) posted by Neal Bridges on
June 04, 1999 at 23:11:17:

> What instructions are those? I thought *asm68k* had all the 68000
> instructions. Are you sure you're not thinking of 68020 or later
instructions?

Oops! The last 68K executive I wrote was for an '030. Never mind. Your
assembler will do fine. Who needs an MMU anyhow?

> When you're thinking about this, bear in mind that there's very little
dynamic
> RAM available -- and the Palm OS calls aren't reentrant. Neither are some
of
> the Quartus Forth kernel words. You might find it difficult to do any
useful
> multitasking.

I would only consider preemption between words in "Forth user space", and
nowhere near "Forth kernel space" or "PalmOS space". The granularity will be

coarse, but that'll be more than good enough for my needs. Worst case, I can't envision needing more than (or even close to) 100 context switches per second, and all of them can certainly be threads if true independent tasking is not available.

> > > > E. How close can I get to true cooperative multitasking/threaded using Quartus Forth? Preemptive? (I need at least 4 threads: Avionics, GPS, Calculation, Display.)

> > > While the very bottom-most layer of the Palm OS supports threading, none of

> > that functionality is available at the application level. However, since your

> > data is coming in as a stream, why do you need threads at all? A simple conditional structure that parses the input data should suffice nicely.

> > The data will be arriving at different times, and calculations will need to be "fired" when the required operands becomes available (data flow model).

> The display and audio will probably be updated on fixed intervals to minimize flickering. All this assumes I will be running the CPU flat out, and that I

> > will have to dynamically allocate the CPU to the calculations having the greatest priority (due either to conditions within the input data or the values

> > of prior results). Some of the algorithms still have some NP-like theoretical

> > performance times, and until I find suitable approximations, I may actually

> > have to spread individual calculations over multiple cycles of input data acquisition and display update. Ugh! I'm trying to look at the worst now, identify the likely impasses, and focus some effort there even though I still

> > have much preliminary development to do. Multitasking/threaded would sure simplify things.

> I think in this case it will radically complicate things to try and implement

a prioritized pre-emptive multitasking engine that doesn't add an additional CPU

> load. I suggest you start by prototyping the functions in your app and

seeing
> just how long it takes to run your calculations; you may find you can do what
> you need to do much more simply. Small steps, building to a whole -- the best
> methodology for tackling big projects.

I've written 8086 executives that required only about 500 bytes of core code and 64 bytes of data per task. On a 10 MHz 8088, I could sustain 10K context switches per second using only 10% of the CPU instruction cycles. With the 68K instruction set being both more flexible and denser, I expect to be able to achieve 2K context switches per second on the Pilot, using a 400 byte executive. And in that space I would have not only fully independent contexts, but multiple process queues (states: idle, sleeping, waiting, ready, running), a round-robin prioritized scheduler (probably with priority aging), and a usable amount of debug support.

I find the mechanism of multitasking can be used to simplify greatly the structure of problems whose single-thread architecture would be extremely difficult to design and implement. While it is viewed as a high-level abstraction on most OS's, and as an almost alien construct in the scope of most C programming, to me it seems to be a natural and seamless extension of the Forth model itself, and OOP concepts in general. The Forth dictionary/wordlists already contain a complete shared memory model, with only the addition of semaphores and spin locks being needed to support mutexes and eliminate resource competition (think "Dining Philosophers").

I'm even trying to envision a protocol that would allow threads to share results and data on each other's stacks in a Just In Time mode, using a client-server or other similar model, possibly including halting detection and enforcement. I'm thinking of a thread-aware version of an "xt" that will permit "lazy" thread synchronization and greatly facilitate the implementation of a data-flow architecture.

> > One last thing: Let's assume my program won't fit within the interpreter as
> one
> > grand lump. Can I compile parts of it and have them execute together? That
> > is, can I create shared libraries (DLLs) of compiled code, and have that code
> > called from either the interpreter or another piece of compiled code? I'm
> > hoping I can do something like this to get completely away from any 64K

```
> limits,  
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Pilot,  
> > and also as one possible device to help implement multitasking/threaded.  
> > The main problem may be getting all the code libraries to cooperate in  
their  
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with  
> > the interpreter. If your executables retain (and use) the R stack, it  
might  
> > just be possible. If the S stack is kept as well, it would be much  
easier!  
  
> As I mentioned previously, you can write truly big applications in 64K of  
Forth  
> -- if there's a need, I'll expanding the compiler to allow multi-segment  
apps.  
> I've already mapped out how it'll be implemented. Nobody's banging their  
head  
> against the top yet, though.
```

And I hope I don't come near to that limit either!

As I said last time, I am considering problems I may never encounter. But being faced with a novel development environment on a new platform, I need to hope for the best and expect the worst. Toward that end, the limitations of finite CPU throughput and finite memory space should be minimized to the greatest extent possible. Which for starters means easing all limitations that are less than the physical hardware limits (a real-time embedded design mantra).

Multitasking gives me much of the programming flexibility of multiple shared-memory processors (remember, the final implementation of this project may well be spread across multiple physical processors), with a trivial performance penalty and a significant productivity increase in both design and implementation. I'm expecting the simplicity of the Forth architecture will reduce the normal hassle of multiple task debugging to near trivial levels, once the executive itself is stable.

Being able to use the full memory space of the Pilot will allow the precise needs of the final application to be determined, and remove what is essentially an arbitrary (but convenient) barrier.

My experience leads me to estimate a total memory budget of 1MB for this project, and that size is largely due to the horrendous amount of ugly math I may have to do (half of the equations aren't suitably fit by cubic splines, though I have yet to try NURBS). If I have to do the ugly stuff, I will need nearly half a meg of table space to make the algorithms execute in the time

available (by precomputing as much as possible). And I would like to use Forth to generate those tables, possibly on the fly as part of system initialization.

It all comes down to the customary space/time trade-offs, and I want my negotiating flexibility to be as broad as possible from the start. I'd hate to get 50% of the way through only to find the project can't be completed without multitasking and/or unrestricted memory use. I want to be thinking along those lines from the start, even if they turn out to be unneeded.

But I suspect they will be needed. The state machine needed to optimally process a data-flow architecture in a single thread will be about as complex as a small multitasking executive. And even if the code fits in less than 64KB, it seems certain the static and dynamic data will not.

Like I said, I'm going to use Quartus Forth ANYWAY, even if it proves unable to support my full application running in real-time on the Pilot. Just being able to prototype and debug one major piece at a time will be a huge benefit, since it will still enable me to precisely determine many of the target hardware requirements. Heck, if it works well enough, I may decide to implement a Forth kernel in the target system and avoid the need to port the code.

The most likely processor(s) for the target system are all from Hitachi: At least one central 7045 SH-2 16/32-bit RISC microcontroller (or maybe a 705x SH-DSP if the math stays too hairy) with as many subordinate H-8 (8/16 bit) microcontrollers as needed. I'm thinking one 7045 will do the job (it has 10x the power of the Pilot CPU). Anyone know of any Forth ports to the Hitachi SH?

-BobC

Re: How far can I push Quartus Forth?

Posted by [Ron Doerfler](#) on June 05, 1999 at 06:01:17:

In Reply to: [Re: How far can I push Quartus Forth?](#) posted by Bob Cunningham on June 05, 1999 at 04:07:43:

Hi Bob,

Fascinating discussion!

> And even if the code fits in less than 64KB,
> it seems certain the static and dynamic data will not.

But if I'm not mistaken, in a separate database you can create as many 64K records as you want to store your static data tables. Then, even though your code is <64K, you can open the separate database and get the record pointers at the start of your code, and then access your tables that way as needed, based on offsets into the records--right Neal?

Ron

Re: How far can I push Quartus Forth?

Posted by [Bob Cunningham](#) on June 05, 1999 at 16:43:25:

In Reply to: [Re: How far can I push Quartus Forth?](#) posted by Ron Doerfler on June 05, 1999 at 06:01:17:

> Hi Bob,

> Fascinating discussion!

> > And even if the code fits in less than 64KB,
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> your code is <64K, you can open the separate database
> and get the record pointers at the start of your code,
> and then access your tables that way as needed, based on
> offsets into the records--right Neal?

Knowing nothing about PalmOS itself, can I access the records directly, or must

I buffer them into my own memory area? I will need to have my data tables accessible from Forth via 32-bit pointers into the data itself (which will probably be a multidimensional array of floats or doubles). If I have to retrieve multiple records, or figure out which record contains the part of the table I need, then the cost may quickly become nearly as expensive as just doing the calculation itself (without the table).

-BobC

Re: How far can I push Quartus Forth?

Posted by [Neal Bridges](#) on June 05, 1999 at 20:37:13:

In Reply to: [Re: How far can I push Quartus Forth?](#) posted by Bob Cunningham on June 05, 1999 at 16:43:25:

> Knowing nothing about PalmOS itself, can I access the records directly, or must
> I buffer them into my own memory area? I will need to have my data tables
> accessible from Forth via 32-bit pointers into the data itself (which will
> probably be a multidimensional array of floats or doubles). If I have to
> retrieve multiple records, or figure out which record contains the part of
> the
> table I need, then the cost may quickly become nearly as expensive as just
> doing the calculation itself (without the table).

You can acquire the pointers at startup and use them thereafter with no additional overhead -- it's direct memory access.

You'd be well served at this stage to get an overview of what the Palm OS provides. I recommend you have a look at the "Palm Programming" -- check out my

"Recommended Books" page on my home page.

Also download the 3Com SDK information -- it's available free in Adobe Acrobat

PDF format from <http://palm.3com.com/devzone>. Also have a look at the "Online Resources" page of the Quartus Forth manual, available in the distribution .zip

and also on the Quartus Forth home page -- it points to the Palm docs, an online version of the book I mention above, and a whole collection of other useful info.

Neal

Re: How far can I push Quartus Forth?

Posted by [Neal Bridges](#) on June 05, 1999 at 08:26:33:

In Reply to: [Re: How far can I push Quartus Forth?](#) posted by Ron Doerfler on June 05, 1999 at 06:01:17:

> Hi Bob,

> Fascinating discussion!

> > And even if the code fits in less than 64KB,
> > it seems certain the static and dynamic data will not.

> But if I'm not mistaken, in a separate database
> you can create as many 64K records as you want to
> store your static data tables. Then, even though
> your code is <64K, you can open the separate database
> and get the record pointers at the start of your code,
> and then access your tables that way as needed, based on
> offsets into the records--right Neal?

You're correct Ron -- Bob, you can have as many 64K segments of static data in your application as you need, and you can use Quartus Forth to generate them as you wish.

I'll be happy to assist in your endeavours to multitask, Bob -- let me know how it goes!

Neal

Charles Moore's 63

Posted by [gunnar shogren](#) on June 04, 1999 at 10:55:57:

Good day Neal and all,
I've seen it mentioned throughout some of the literature and such but have never actually seen the list.

Just what are/would-be the 63 fundamental words in Forth?

Thanks for any and all help,

gunnar.

Re: Charles Moore's 63

Posted by [hans nordstrom](#) on June 06, 1999 at 16:19:29:

In Reply to: [Charles Moore's 63](#) posted by gunnar shogren on June 04, 1999 at 10:55:57:

> Good day Neal and all,
> I've seen it mentioned throughout some of the literature and such but have never actually seen the list.
> Just what are/would-be the 63 fundamental words in Forth?
> Thanks for any and all help,

The source I know of is an article by Glen B. Haydon.
Look it up at:

- [Levels of Forth](#)

Re: Charles Moore's 63

Posted by [Neal Bridges](#) on June 04, 1999 at 11:19:05:

In Reply to: [Charles Moore's 63](#) posted by gunnar shogren on June 04, 1999 at 10:55:57:

> Good day Neal and all,
> I've seen it mentioned throughout some of the literature and such but have never actually seen the list.
> Just what are/would-be the 63 fundamental words in Forth?
> Thanks for any and all help,

The original set of words was from Moore's cmForth, for a Novix chip. He has changed his mind about that set of words over time. He currently questions the need for SWAP, but then Chuck was and is a minimalist. SWAP is my friend. :)

Certainly any minimal set of words would include memory access words, and basic I/O words. However, there's no unique set of minimal words from which all other words can be built -- for instance you can build all the bitwise-logical operators out of others, so which ones you start from is unimportant. Likewise, + can be built from - or vice-versa; even + itself can be built from shift and logic operators. Multiplication can be built from repeated shifts and adds,

just as division can be built from repeated shifts and subtracts.

Such things are of course not much more than an exercise; from an implementation

standpoint, where a CPU has a native-code instruction or short code-sequence equivalent to a common Forth word, it would be inefficient to build that word from other Forth words.

Neal

LATEST or equiv?

Posted by [Serg Koren](#) on June 01, 1999 at 16:03:47:

Hi,

being the demented person I am, I'm trying to port some old code I had lying around (and think would be very useful in Quartus). It's a set of words which implement true classes, objects, inheritance (an oop package). However in my scanning thru the code there is a reference to LATEST which doesn't appear in Brodie's 2 books and doesn't seem to be implemented in Q. Can someone (or Neal)

explain what LATEST does and if there is a Q equivalent?

Thanks mu

Re: LATEST or equiv?

Posted by [Neal Bridges](#) on June 01, 1999 at 16:10:36:

In Reply to: [LATEST or equiv?](#) posted by Serg Koren on June 01, 1999 at 16:03:47:

> Hi,

> being the demented person I am, I'm trying to port some old code I had lying

> around (and think would be very useful in Quartus). It's a set of words which

> implement true classes, objects, inheritance (an oop package). However in my

> scanning thru the code there is a reference to LATEST which doesn't appear in

> Brodie's 2 books and doesn't seem to be implemented in Q. Can someone (or Neal)

> explain what LATEST does and if there is a Q equivalent?

LATEST is a pre-ANSI Standard word that usually points to the address of the

last definition. It has no exact equivalent in a Standard system. If you're desperate to get that particular code ported, mail it to me and I'll let you know if it's worth the effort to port it from whatever older dialect of Forth it uses.

There are a number of OOP packages available for ANSI Forth -- unless you're devoted to that one, or want to port it simply for the exercise, you might look at one of the newer ones.

Neal

Floats vs. fixed point

Posted by [Carl Jacobsen](#) on June 01, 1999 at 15:06:18:

I'm working out the details for a new program, and I need numbers with a couple places behind the decimal point. The trick of assuming a fixed decimal point and then forcing the '.' in during output looks like it should work just fine for me. And addition and subtraction continue to work around the fixed point, but multiplication will require some scaling; and gee, it looks like `*` (and `M*`) is/are well suited to this task, but, but...

Hmm, I'll need double cell integers for this (only four workable decimal places in a 16-bit integer, and two on either side of the '.' is too small a range for my needs) and I'll need multiplication (and perhaps division), but the ANS standard doesn't have a 32-bit (er, double cell) multiply -- I'm looking for a `D*` or a `D*/`, and there isn't one...? I can hack one together well enough for my purposes, with `M*/` and a couple of shifts and an add, but I'm not sure what to do about division...

Yeah, I know, an "obvious" fix is to use floats, but, well, I'm allergic to them (I've been forced to do monetary calculations with floats before, and it was such a pain -- the resulting code was quite robust, but was filled with calls to functions like `is_close(a, b)` and `is_nearly_zero(a)`, causing constant headaches for the programmers involved).

I've perused the local documentation, some of the online resources, the ANS standard, Forth Programmer's Handbook, and did some digging on DejaNews, and haven't come across any good discussion of how to handle the latter half of four-function math with double-cell ints -- any suggestions?

Anyone want to try to convince me that floats are *not*, in fact, a tool of the devil? :-)

Thanks for listening to me whine,

-- Carl

P.S. Despite the comments above, I'm not working with pennies here, actually with (probably) hundredths of inches this time.

Re: Floats vs. fixed point

Posted by [Neal Bridges](#) on June 01, 1999 at 15:13:06:

In Reply to: [Floats vs. fixed point](#) posted by Carl Jacobsen on June 01, 1999 at 15:06:18:

> Anyone want to try to convince me that floats are *not*, in fact,
> a tool of the devil? :-)

Use integers. For double-cell division, check out *dblmath.txt*.
Double-cell multiplication is just two M* and an M+. If you need examples,
let
me know.

> Thanks for listening to me whine,
> -- Carl

> P.S. Despite the comments above, I'm not working with pennies here,
> actually with (probably) hundredths of inches this time.

If it's not confidential, what are you working on?

Neal

Re: Floats vs. fixed point

Posted by [Carl Jacobsen](#) on June 04, 1999 at 16:23:52:

In Reply to: [Re: Floats vs. fixed point](#) posted by Neal Bridges on June 01, 1999 at 15:13:06:

> > Anyone want to try to convince me that floats are *not*, in fact,
> > a tool of the devil? :-)

> Use integers. For double-cell division, check out *dblmath.txt*.
> Double-cell multiplication is just two M* and an M+. If you need examples,
> let me know.

Thanks, I will use integers :-) And thanks for the pointer to *dblmath.txt*,
(sound of head hitting wall repeatedly) I *thought* I'd looked everywhere.
Hmm, the Standard says M* multiplies two single cell ints with a double cell

result -- if you can show me how to construct a double-cell multiply out of a pair of those, I'll be very impressed...

> > P.S. Despite the comments above, I'm not working with pennies here,
> > actually with (probably) hundredths of inches this time.
>
> If it's not confidential, what are you working on?

A couple of friends of mine want me to write them programs; one in particular seemed/seems like a nice gentle next step: she does weaving as a hobby, and wants a "weaving calculator", where one enters the length and width of the finished fabric, fringe length, number of threads, and various other numbers, and it tells you how many yards of thread you need, etc. Something useful for doing lots of "what if?" calculations when deciding which weaving project to do, what materials are necessary, and so on. Great vertical market app, eh? :-) Well, she'll get something she likes, I'll get to try a bunch of new ideas, and I'll probably put the thing up on PGHQ with source code, like my last program -- who knows, someone else may find it useful :-)

Meanwhile, I've worked up a quick and dirty fixed point library to use for this project; take a look...

Words provided in "fixed" memo:

Set the number of places behind the decimal point (default 2):

```
dx-set-places ( n -- )
```

Convert between double-cell integers and fixed-place doubles:

```
d>dx ( d. -- dx. )  
dx>d ( dx. -- d. )
```

Multiply and divide (add and subtract can use D+ and D-):

```
dx* ( dx1. dx2. -- dx1*dx2. )  
dx/ ( dx1. dx2. -- dx1/dx2. )  
dx*n ( dx. n -- dx*n )  
dx/n ( dx. n -- dx/n )
```

(The word dx/ is lousy right now -- with more than one or two places after the decimal, it will overflow for depressingly small values on on the left of the decimal place; rewriting it to use a triple word intermediate result would make it work in a much less astonishing way, but, hmm, that would be a lot of work and I don't need it :-)

Convert between strings and fixed place doubles:

```
string>dx ( c-addr u -- dx. )  
dx>string ( dx. -- c-addr u )
```

There are a bunch of other functions in the memo; they're all prefixed with "_" to, hmm, "hide" them from your namespace (old 'C' habits...).

So, there's what I've got (actual code below, hopefully it won't lose

too much in the translation), comments welcome, please :-)

-- Carl

\ fixed - 99.6.4 12:25pm CRJ

needs core-ext
needs string
needs dblmath

```
: _d>hi ( d. -- upper-cell-of-d ) NIP ;
: _d>lo ( d. -- lower-cell-of-d ) DROP ;
```

```
\ upper cell of d2 gets lower cell of d1
: _dlo>dhi ( d1. -- d2. )
  DROP 0 SWAP ;
```

```
VARIABLE _dx_places \ 12.34 => 2
VARIABLE _dx_shift   \ 12.34 => 100
```

```
\ for 16-bit cell, input range is 0..4
: dx-set-places ( n -- )
  DUP _dx_places !
  1 SWAP 0 ?DO 10 * LOOP
  _dx_shift ! ;
```

```
: d>dx ( d. -- dx. )
  _dx_shift @ 1 M*/ ;
```

```
: dx>d ( dx. -- d. )
  1 _dx_shift @ M*/ ;
```

```
: dx* ( dx1. dx2. -- dx1*dx2. )
  2OVER 2OVER
  _d>lo _dx_shift @ M*/ 2>R
  _d>hi _dx_shift @ M*/ _dlo>dhi
  2R> D+ ;
```

```
\ WARNING: dx/: range of dx1 lousy:
\      1 place   = 7.5 digit range
\      2 places = 5.5 digit range
\      3 places = 3.5 digit range
\      4 places = 1.5 digit range
```

```
: dx/ ( dx1. dx2. -- dx1/dx2. )
  2>R d>dx 2R>
  ud/mod 2SWAP 2DROP ;
```

```
: dx*n ( dx. n -- dx*n )
  1 M*/ ;
```

```

: dx/n ( dx. n -- dx/n )
  1 SWAP M*/ ;

CHAR 9 1+ CONSTANT '9'+1

: _digit? ( n -- flag )
  [CHAR] 0 '9'+1 WITHIN ;

: _c>digit ( c -- u ) [CHAR] 0 - ;

\ does: isdigit(*p) ? todigit(*p++) : 0
: _nxt-digit ( c-addr u -- c-addr u n )
  0 >R DUP IF
    OVER C@ DUP _digit? IF
      R> DROP _c>digit >R 1 /STRING
    ELSE
      DROP
    THEN
  THEN R> ;

CHAR . CONSTANT _dot

: string>dx ( c-addr u -- dx. )
  0. 2SWAP >NUMBER
  DUP IF
    OVER C@ _dot = IF 1 /STRING THEN
  THEN
  _dx_places @ 0 ?DO
    _nxt-digit ROT ROT 2>R >R
    10 1 M*/ R> M+ 2R>
  LOOP 2DROP ;

: dx>string ( dx. -- c-addr u )
  <# _dx_places @ 0 ?DO # loop
  _dot HOLD #S #> ;

2 dx-set-places \ init defaults

```



Re: Floats vs. fixed point

Posted by [Neal Bridges](#) on June 04, 1999 at 18:08:13:

In Reply to: [Re: Floats vs. fixed point](#) posted by Carl Jacobsen on June 04, 1999 at 16:23:52:

> > > Anyone want to try to convince me that floats are *not*, in fact,
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> Thanks, I will use integers :-). And thanks for the pointer to *dblmath.txt*,
> (sound of head hitting wall repeatedly) I *thought* I'd looked everywhere.
> Hmm, the Standard says M* multiplies two single cell ints with a double
cell
> result -- if you can show me how to construct a double-cell multiply out of
> a pair of those, I'll be very impressed...

Leaving aside the rest of your post till I can look at it properly, you can
multiply double-cell numbers the way you'd do it by hand. Treat each cell of
a
double-cell number as a big digit.

- Multiply the double-cell multiplicand by the low 'digit' (cell) of the multiplier to produce the first partial product. (Use M*)
- Multiply the double-cell multiplicand by the high 'digit' (cell) of the multiplier to produce the second partial product. (Use M*)
- Shift the second partial product one 'digit' (cell) to the right and add to it the first partial product. (In our terms, this means adding the high cell of the first partial product to the double-cell second partial product, using M+)

Properly ordered on the stack, the result -- the double-cell second partial product and the low cell of the first partial product -- represents the triple-cell product of the two double-cell numbers. If you only want a double-cell product, you can simplify the calculation of the second partial product so as to only produce a single-cell result (use * instead of M*), or alternately simply discard the highest cell of the triple-cell product.

The description is more difficult to understand than the implementation. Give it a try -- if you run into a wall, shout, and I'll write the code.

Neal

Re: Floats vs. fixed point

Posted by [Carl Jacobsen](#) on June 04, 1999 at 21:51:17:

In Reply to: [Re: Floats vs. fixed point](#) posted by Neal Bridges on June 04, 1999 at 18:08:13:

> > Hmm, the Standard says M* multiplies two single cell ints with a double cell
> > result -- if you can show me how to construct a double-cell multiply out of
> > a pair of those, I'll be very impressed...
>
> ..., you can
> multiply double-cell numbers the way you'd do it by hand. Treat each cell of
> a double-cell number as a big digit.

Right, I get this part...

> ...
> * Multiply the double-cell multiplicand by the low 'digit' (cell) of the
> multiplier to produce the first partial product. (Use M*)
> ...

Um, this would work, if M* did a 32bit x 16bit multiply (given our 16bit cell size), but it looks to me from the Standard like it only does a 16bit x 16bit multiply, yielding a 32bit result.

Grepping through the Standard for '*', it looks like these are the words available for multiplication:

Section	Word	Stack	Word Set
6.1.0090	*	(n1 u1 n2 u2 -- n3 u3)	CORE
6.1.0100	*/	(n1 n2 n3 -- n4)	CORE
6.1.0110	*/MOD	(n1 n2 n3 -- n4 n5)	CORE
6.1.1810	M*	(n1 n2 -- d)	CORE
6.1.2360	UM*	(u1 u2 -- ud)	CORE
8.6.1.1820	M*/	(d1 n1 +n2 -- d2)	DOUBLE

M*/ looks to be the only one that takes (at least one) 32bit input, which is why I used it in my code. Or am I missing something? (It'd be the first time, of course, I nevr maek mistakes :-)

-- Carl

P.S. Apropos of nothing, I picked up a copy of **The Essential Ellison** today; looks to be quite a book (seem to recall seeing your name associated with a.f.h-e at some point).

Re: Floats vs. fixed point

Posted by [Neal Bridges](#) on June 04, 1999 at 22:16:33:

In Reply to: [Re: Floats vs. fixed point](#) posted by Carl Jacobsen on June 04, 1999 at 21:51:17:

```
> > * Multiply the double-cell multiplicand by the low 'digit' (cell) of the
> > multiplier to produce the first partial product. (Use M*)
> > ...
```

```
> Um, this would work, if M* did a 32bit x 16bit multiply (given our 16bit
> cell size), but it looks to me from the Standard like it only does a 16bit
> x 16bit multiply, yielding a 32bit result.
```

Right, you'll need to do two multiplications and an add to multiply a 32-bit by a 16-bit. Or you could use M*/.

> P.S. Apropos of nothing, I picked up a copy of **The Essential Ellison**

> today; looks to be quite a book (seem to recall seeing your name
> associated with a.f.h-e at some point).

That's right -- I created the UseNet group alt.fan.harlan-ellison.

"The Essential Ellison" is a good book. The first part of it is writing from when he was very young -- of academic interest only. The rest of the book contains some of his best writing.

Neal

Re: Harlan Ellison (Was: Floats vs. fixed point)

Posted by [Bob Cunningham](#) on June 04, 1999 at 23:06:15:

In Reply to: [Re: Floats vs. fixed point](#) posted by Neal Bridges on June 04, 1999 at 22:16:33:

> > P.S. Apropos of nothing, I picked up a copy of **The Essential Ellison**

> > today; looks to be quite a book (seem to recall seeing your name
> > associated with a.f.h-e at some point).

> That's right -- I created the UseNet group alt.fan.harlan-ellison.

> "The Essential Ellison" is a good book. The first part of it is writing from

> when he was very young -- of academic interest only. The rest of the book
> contains some of his best writing.

I forget, is Mr. Ellison the author who "doesn't write science fiction" and hates the abbreviation "SF"? If so, what does he call what he writes? If not, then just who the heck am I misremembering?

Not that it matters to me: It still reads the same.

-BobC

Re: Harlan Ellison (Was: Floats vs. fixed point)

Posted by [Neal Bridges](#) on June 04, 1999 at 23:17:38:

In Reply to: [Re: Harlan Ellison \(Was: Floats vs. fixed point\)](#) posted by Bob Cunningham on June 04, 1999 at 23:06:15:

> I forget, is Mr. Ellison the author who "doesn't write science fiction" and
> hates the abbreviation "SF"? If so, what does he call what he writes? If
not,
> then just who the heck am I misremembering?
> Not that it matters to me: It still reads the same.

That's him -- he's a cross-genre writer who doesn't wish to be pigeonholed as
a
'science-fiction writer'. As far as I know he hasn't expressed an opinion
about
the acronym SF -- it's the moniker "Sci-Fi" that irks him.

I'm pretty sure he doesn't write any Forth. :)

Neal

Newbie Questions...

Posted by [Tom Clarke](#) on May 31, 1999 at 22:29:23:

I'm in FORTH evaluation mode... In going thru the "A Beginning Tutorial" I
found the following (Please note, I am a total novice to FORTH and to
integrated development env.... I have programmed in PocketC, NSBasic, DOS
Basic
and (and this dates me, Autocoder, an assembler language for 2nd generation
hardware)...

In order to learn more about FORTH, I felt the best way would be to try all
the
samples in the starting tutorial...

1) Using a CONSTANT only creates the constant for the current execution of
FORTH... the constant is not retained after a restart of FORTH... This does
not
seem correct (???)

Here's the exact sequence:

(Start FORTH)

300 constant multiplier ret ok

(Start FORTH again)

```
5 multiplier * . ret
multiplier? undefined word
```

2) When I used ' to get the address of a constant that I entered, I got the address (Good!), but when I tried to fetch (@), the palm system locked up and I had to reset it (I'm using a Palm IIIx)... the tutorial shows ' MULTIPLIER @ @

. which also did not work... I assume the double @ is a typo... I tried this at least 3 times and the system always froze (had to do a soft reset...)

Here's the sequence:

(Start FORTH)

```
300 constant multiplier ret ok
```

```
5 multiplier * . 1500 ok
```

```
' multiplier . -15278 ok
```

```
' multiplier @ . ret locks up the system... the return symbol on Grafitti is highlighted... can not turn system off... can do nothing except reset... I do NOT have Hack Master installed
```

3) When I used ! to change the contents of an entered constant, again, following the tutorial exactly, the system froze every time...

4) When I tried WORDS, the first first line that shows is cold registered CopyRscr NewRscr...

Is there any way to see all of the words? I read the thread on this list about this issue.

Re: Newbie Questions...

Posted by [Neal Bridges](#) on May 31, 1999 at 23:40:34:

In Reply to: [Newbie Questions...](#) posted by Tom Clarke on May 31, 1999 at 22:29:23:

> In order to learn more about FORTH, I felt the best way would be to try all the

> samples in the starting tutorial...

> 1) Using a CONSTANT only creates the constant for the current execution of FORTH... the constant is not retained after a restart of FORTH... This does not

> seem correct (???)

> Here's the exact sequence:

> (Start FORTH)

> 300 constant multiplier ret ok

```
> (Start FORTH again)
> 5 multiplier * . ret
> multiplier? undefined word
```

That's correct. The workspace is not retained from one Quartus Forth session to the next. This is a design decision; the Quartus Forth state may be intricately involved with the Palm GUI state, and there's no way to preserve that between incarnations.

If you wish to define a constant that appears each time you restart Quartus Forth, add the constant definition to your startup.quartus memo. This applies to any code you want to have available each time you start Quartus Forth.

```
> 2) When I used ' to get the address of a constant that I entered, I got the
> address (Good!), but when I tried to fetch (@), the palm system locked up
and
I
> had to reset it (I'm using a Palm IIIx)... the tutorial shows ' MULTIPLIER
@ @
> . which also did not work... I assume the double @ is a typo... I tried
this
at
> least 3 times and the system always froze (had to do a soft reset...)
```

You're right -- that example is for a specific Forth, long out of date. In ANSI Standard Forth, you can't do anything with a ' except pass the returned value to EXECUTE -- certainly you can't fetch or store from it.

Here's an example of what you're doing, but in Standard Forth, with CONSTANT redefined:

```
: constant create , does> @ ;
300 constant multiplier
' multiplier >body @ . (will display 300)
```

Note the redefinition of CONSTANT, and the use of >BODY to convert an execution token (returned by ') into a dataspace address.

>BODY won't work on CONSTANTS in Quartus Forth (or in many Standard Forths) without the above redefinition.

>BODY is a Standard word that works specifically on words created using CREATE.

Normal VARIABLES and CONSTANTS in Quartus Forth are not defined using CREATE, but rather using a technique that allows them to be better optimized at compile-time. The ANSI Standard permits such implementations, in the interest of producing better code. Such implementations are not necessarily based on CREATE, so the code in that old tutorial doesn't apply.

> 3) When I used ! to change the contents of an entered constant, again,
> following the tutorial exactly, the system froze every time...

See above.

> 4) When I tried WORDS, the first first line that shows is
> cold registered CopyRscr NewRscr...
> Is there any way to see all of the words? I read the thread on this list
about
> this issue.

Yes -- when you do WORDS, there's a "MORE" at the bottom of the screen. If
you
tap the screen, it'll continue on for an additional line; if you press PgUp
or
PgDown, it'll display another screenful, and a Graffiti Return will turn off
"MORE" mode and let it scroll through to the end. At any time, Abort from the
menu will stop the display.

Neal

Re: Newbie Questions...

Posted by [Tom Clarke](#) on June 01, 1999 at 06:05:06:

In Reply to: [Re: Newbie Questions...](#) posted by Neal Bridges on May 31, 1999
at 23:40:34:

Neal, thank you for responding so quickly!

I woke this morning and realized I had said in my post that it hung in
Grafitti... not!... it hung in FITALY... anyway, that's not the problem...

On May 28, a new tutorial called Simple FORTH was put up on your site... Is
this tutorial up to date?

Tom

> > In order to learn more about FORTH, I felt the best way would be to try
all
> the
> > samples in the starting tutorial...

> > 1) Using a CONSTANT only creates the constant for the current execution
of

> > FORTH... the constant is not retained after a restart of FORTH... This
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> not

> > seem correct (???)

> > Here's the exact sequence:

> > (Start FORTH)

```
> > 300 constant multiplier ret ok
> > (Start FORTH again)
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> > multiplier? undefined word
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to

> the next. This is a design decision; the Quartus Forth state may be intricately involved with the Palm GUI state, and there's no way to preserve that between incarnations.

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> > address (Good!), but when I tried to fetch (@), the palm system locked up and

> I

> > had to reset it (I'm using a Palm IIIx)... the tutorial shows ' MULTIPLIER

@ @

> > . which also did not work... I assume the double @ is a typo... I tried this

> at

> > least 3 times and the system always froze (had to do a soft reset...)

> You're right -- that example is for a specific Forth, long out of date. In ANSI

> Standard Forth, you can't do anything with a ' except pass the returned value

to

> EXECUTE -- certainly you can't fetch or store from it.

> Here's an example of what you're doing, but in Standard Forth, with CONSTANT

> redefined:

>

```
: constant create , does> @ ;
```

```
> 300 constant multiplier
```

```
> ' multiplier >body @ . (will display 300)
```

```
>
```

> Note the redefinition of CONSTANT, and the use of >BODY to convert an execution

> token (returned by ') into a dataspace address.

> >BODY won't work on CONSTANTS in Quartus Forth (or in many Standard Forths)
> without the above redefinition.

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CREATE.

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CREATE,
> but rather using a technique that allows them to be better optimized at
> compile-time. The ANSI Standard permits such implementations, in the
interest
> of producing better code. Such implementations are not necessarily based on
> CREATE, so the code in that old tutorial doesn't apply.

> > 3) When I used ! to change the contents of an entered constant, again,
> > following the tutorial exactly, the system froze every time...

> See above.

> > 4) When I tried WORDS, the first first line that shows is
> > cold registered CopyRscr NewRscr...

> > Is there any way to see all of the words? I read the thread on this list
about
> > this issue.

> Yes -- when you do WORDS, there's a "MORE" at the bottom of the screen. If
you
> tap the screen, it'll continue on for an additional line; if you press PgUp
or
> PgDown, it'll display another screenful, and a Graffiti Return will turn
off
> "MORE" mode and let it scroll through to the end. At any time, Abort from
the
> menu will stop the display.

> Neal

Simple Forth Tutorial was Re: Newbie Questions...

Posted by [Barry Marks](#) on June 01, 1999 at 12:13:23:

In Reply to: [Re: Newbie Questions...](#) posted by Tom Clarke on June 01, 1999 at 06:05:06:

> On May 28, a new tutorial called Simple FORTH was put up on your site... Is
> this tutorial up to date?

I can't find this tutorial unless this refers to Stephen Dononue's tutorial which has been here a while.

Can someone tell me where to look for it?

Barry

Re: Simple Forth Tutorial was Re: Newbie Questions...

Posted by [Neal Bridges](#) on June 01, 1999 at 12:21:13:

In Reply to: [Simple Forth Tutorial was Re: Newbie Questions...](#) posted by Barry Marks on June 01, 1999 at 12:13:23:

> > On May 28, a new tutorial called Simple FORTH was put up on your site...
Is
> > this tutorial up to date?

> I can't find this tutorial unless this refers to Stephen Dononue's tutorial
> which has been here a while.

> Can someone tell me where to look for it?

It's on the "Online Resources" page. It's a link to Leo Wong's "Simple Forth" tutorial, on his website.

Neal

Re: Newbie Questions...

Posted by [Neal Bridges](#) on June 01, 1999 at 10:48:19:

In Reply to: [Re: Newbie Questions...](#) posted by Tom Clarke on June 01, 1999 at 06:05:06:

> On May 28, a new tutorial called Simple FORTH was put up on your site... Is
> this tutorial up to date?

Leo's tutorial (Simple Forth) should certainly be ANSI Standard-compliant, yes.

Neal

Large data files

Posted by [Brent DeWitt](#) on May 31, 1999 at 17:15:21:

My data logging project has expanded a bit and I need to create some rather large files, 28k bytes minimum, with 48k being a better target. Are there any examples/ideas out there for this. The good news is that it is strictly sequential access.

Thanks!

Re: Large data files

Posted by [Neal Bridges](#) on May 31, 1999 at 17:22:37:

In Reply to: [Large data files](#) posted by Brent DeWitt on May 31, 1999 at 17:15:21:

> My data logging project has expanded a bit and I need to create some rather
> large files, 28k bytes minimum, with 48k being a better target. Are there
any
> examples/ideas out there for this. The good news is that it is strictly
> sequential access.

Any single data record you create in a PDB can be as large as 64K (less a few bytes). 48K will still fit in a single record.

Neal

First Quartus app posted...

Posted by [Serg Koren](#) on May 31, 1999 at 12:11:21:

This is just a simple app I always do when trying out a new platform/language.

It's a Quartus implementation of the standard sieve benchmark (with a nice GUI interface). This version iterates over 5120 primes (instead of 8192 because of memory limits) ten times. Hopefully, there aren't too many bugs ;-).

The source code, compiled standalone app, and instructions can be found by following the links at <http://www.VisualNewt.com/Sieve.html>

The code is fairly well structured (and documented succinctly). Hopefully, others may find it useful.

Thanks go to Neal for his help, patience and tips. (Neal, I'm emailing you a copy and you can post it or do with it what you like.)

FYI - The sieve executes in about 3.64 seconds on my Pal

- [Sieve](#)

Re: First Quartus app posted...

Posted by [Neal Bridges](#) on May 31, 1999 at 15:09:04:

In Reply to: [First Quartus app posted...](#) posted by Serg Koren on May 31, 1999 at 12:11:21:

> Thanks go to Neal for his help, patience and tips. (Neal, I'm emailing you a copy and you can post it or do with it what you like.)

Hi Serg. Thanks for posting that. I had a look at your page -- I see you haven't got the statistic for Quartus Forth on the line-chart yet.

Neal

Re: First Quartus app posted...

Posted by [Serg Koren](#) on May 31, 1999 at 15:49:59:

In Reply to: [Re: First Quartus app posted...](#) posted by Neal Bridges on May 31, 1999 at 15:09:04:

> > Thanks go to Neal for his help, patience and tips. (Neal, I'm emailing you a copy and you can post it or do with it what you like.)

> Hi Serg. Thanks for posting that. I had a look at your page -- I see you haven't got the statistic for Quartus Forth on the line-chart yet.

> Neal

No, I haven't updated the chart in a while. I'll probably do that later this week sometime as time permits.

Off Topic: Do not use OS 3.1.1 and StreakHack concurrently

Posted by [Erwin Schomburg](#) on May 30, 1999 at 06:12:26:

This is off topic, but since Neal is author of StreakHack....
You can either have the OS 3.1.1 Patch installed *or* StreakHack active. Both enhancements can not actively live together on the same machine. Crash, Fatal Screen and unnoticed battery burn-out after the next wake-up (alarm) event are the consequences.

/Erwin

StreakHack/OS 3.1.1 play OK together (was Re: Off Topic: Do not use OS 3.1.1 and StreakHack concurrently)

Posted by [Neal Bridges](#) on May 30, 1999 at 08:11:27:

In Reply to: [Off Topic: Do not use OS 3.1.1 and StreakHack concurrently](#)
posted by Erwin Schomburg on May 30, 1999 at 06:12:26:

> This is off topic, but since Neal is author of StreakHack....
> You can either have the OS 3.1.1 Patch installed *or* StreakHack active. Both
> enhancements can not actively live together on the same machine. Crash, Fatal
> Screen and unnoticed battery burn-out after the next wake-up (alarm) event
> are
> the consequences.

Hi Erwin. You're the only one who has reported any problem running them together. My tests show they play OK together.

I concur with your other message, however; the OS update doesn't work with most grayscale apps, whereas StreakHack does.

Neal

Re: Off Topic: Do not use OS 3.1.1 and StreakHack concurrently

Posted by Erwin on May 30, 1999 at 07:11:49:

In Reply to: [Off Topic: Do not use OS 3.1.1 and StreakHack concurrently](#)
posted by Erwin Schomburg on May 30, 1999 at 06:12:26:

> This is off topic, but since Neal is author of StreakHack....
> You can either have the OS 3.1.1 Patch installed *or* StreakHack active.
Both
> enhancements can not actively live together on the same machine. Crash,
Fatal
> Screen and unnoticed battery burn-out after the next wake-up (alarm) event
are
> the consequences.

> /Erwin

Following up on myself, with OS3.1.1 16 step grayscale images are a pain in
(you know where) to look at, it does strange things with the system stack when in
Emulator, so conclusion is: don't. Stick to StreakHack if you have a bleeding
line (streak) problem.

/Erwin

Wanted: original Pilot

Posted by [Neal Bridges](#) on May 29, 1999 at 21:23:55:

Hi folks. I have an original Pilot with a cracked screen. I'd like to bring
it
back to life -- I do testing all the way back to version 1 of the Palm OS. If
anyone has an original Pilot they'd like to sell, or a broken original Pilot
with an intact screen, please let me know -- I'll throw in a free copy of
Quartus Forth on top.

Neal

Re: Wanted: original Pilot

Posted by [Bob Cunningham](#) on June 04, 1999 at 22:59:14:

In Reply to: [Wanted: original Pilot](#) posted by Neal Bridges on May 29, 1999 at 21:23:55:

> Hi folks. I have an original Pilot with a cracked screen. I'd like to bring it
> back to life -- I do testing all the way back to version 1 of the Palm OS.
> If
> anyone has an original Pilot they'd like to sell, or a broken original Pilot
> with an intact screen, please let me know -- I'll throw in a free copy of
> Quartus Forth on top.

Does 3Com still offer the \$100 flat-fee repair policy? When I sat on the screen of my 5000 just weeks after buying it, \$100 had it repaired and back in my hands within 72 hours of making my request! (24 hours to get a shipping box to me, and 48 hours for the repair itself.)

Also, I suspect you can burn ANY PalmOS version into the flash in the Palm III, IIIx, or an earlier model with the upgrade card. Including PalmOS 1.x. This seems likely to me mainly because of my experience with the upgrade card in my 5000, which uses the same PalmOS 3.x as the III and IIIx. If you can go one way, why not the other? The main problem would be the actual installation...

-BobC

Re: Wanted: original Pilot

Posted by [Neal Bridges](#) on June 05, 1999 at 08:21:13:

In Reply to: [Re: Wanted: original Pilot](#) posted by Bob Cunningham on June 04, 1999 at 22:59:14:

> > Hi folks. I have an original Pilot with a cracked screen. I'd like to bring
> it
> > back to life -- I do testing all the way back to version 1 of the Palm OS.
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> > anyone has an original Pilot they'd like to sell, or a broken original

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> seems likely to me mainly because of my experience with the upgrade card in
my

> 5000, which uses the same PalmOS 3.x as the III and IIIx. If you can go one
> way, why not the other? The main problem would be the actual
installation...

I'm looking for one with a price tag of less than \$100 US (it's actually \$168
Cdn. for the same service up here).

Neal

Zero-delimited pictured numeric output

Posted by [Neal Bridges](#) on May 29, 1999 at 21:04:37:

Palm OS calls that take strings almost all require that those strings have a
trailing zero-byte.

It has occurred to me that it's trivially simple to modify the Quartus Forth
system such that all pictured numeric output created by your app produces
zero-delimited strings. The following code, included before any library code
that uses <# or #>, will make the resulting strings have a trailing
zero-byte:

```
: <#  <# 0 hold ;  
: #>  #> 1- ;
```

The redefinition of <# places a zero-byte at the end of the generated string,
and the redefinition of #> adjusts the resulting string length to exclude the
zero-byte.

Neal

Num to String conversions...

Posted by [Serg Koren](#) on May 29, 1999 at 20:37:05:

Hi gang,
I think I've gotten past my earlier mental blocks trying to convert standard PalmOS to FORTH (Hint: Ignore everything you've learned so far.). My first Quartus app (albeit very simple) is almost done. I have one problem (one of these days I'll dig out my Brodie books in whatever box I packed them away),
- Given a number, what is the best way to pass it to FrmCopyLabel?

I'm stumped in terms of how to convert a number to a string in FORTH.

Thanks much,
S

PS- Once I finish and document it a bit I'll post the app and sour

Re: Num to String conversions...

Posted by [Neal Bridges](#) on May 29, 1999 at 20:56:08:

In Reply to: [Num to String conversions...](#) posted by Serg Koren on May 29, 1999 at 20:37:05:

> Hi gang,
> I think I've gotten past my earlier mental blocks trying to convert standard
> PalmOS to FORTH (Hint: Ignore everything you've learned so far.). My first
> Quartus app (albeit very simple) is almost done. I have one problem (one of
> these days I'll dig out my Brodie books in whatever box I packed them
away),
> - Given a number, what is the best way to pass it to FrmCopyLabel?
> I'm stumped in terms of how to convert a number to a string in FORTH.

Numbers to strings are handled by the "picture numeric output words" --

<# #S #> HOLD and SIGN. Here's how to convert an unsigned double-cell integer to a string:

```
: (ud.) ( ud. -- ) <# #S #> ;
```

example:

```
1234567. (ud.) type cr
```

Building on that, here's how to convert a signed double-cell integer to a string:

```
: (d.) ( d. -- ) tuck dabs <# #s rot sign #> ;  
-1234567. (d.) type cr  
. 'dot' can be built on (d.), thus:  
: . ( n -- ) s>d (d.) type space ;
```

Having made your string, you can pass it to Palm OS routines using >ABS, after first making sure it's zero-delimited. Here's a version of (d.) that will zero-delimit the provided string:

```
: (d.) ( d. -- ) tuck dabs <# 0 hold #s rot sign #> ;
```

Let me know if you need further examples, etc.

Neal

String to Num conversions...

Posted by [Jesse Helton](#) on June 02, 1999 at 22:05:25:

In Reply to: [Re: Num to String conversions...](#) posted by Neal Bridges on May 29, 1999 at 20:56:08:

OK, I'm a newbie to Forth, so bear with me. I have a related question, so I'll post it here. How do you convert a string to a number?

I want to take the contents of a field, interpret it as a numerical value, perform an operation on it, and put the result in another field (so the current posting helps for part of my task).

Also, what is the proper way to allocate temporary storage for a string? I am trying to use PAD as the string address to have the contents of the field written to, but it crashes after about the third use of it.

You'll have to excuse me if the answers to my questions are standard fare in Forth reference manuals. I am trying to grog through a couple of references, but they both seem pretty dry |-P

Jesse Helton

```
> > Hi gang,  
> > I think I've gotten past my earlier mental blocks trying to convert  
standard  
> > PalmOS to FORTH (Hint: Ignore everything you've learned so far.). My  
first
```

```
> > Quartus app (albeit very simple) is almost done. I have one problem (one
of
> > these days I'll dig out my Brodie books in whatever box I packed them
away),
> > - Given a number, what is the best way to pass it to FrmCopyLabel?
> > I'm stumped in terms of how to convert a number to a string in FORTH.
> Numbers to strings are handled by the "picture numeric output words" --
> <# # #S #> HOLD and SIGN. Here's how to convert an unsigned double-cell
integer
> to a string:
> : (ud.) ( ud. -- ) <# #S #> ;
> example:
> 1234567. (ud.) type cr
> Building on that, here's how to convert a signed double-cell integer to a
> string:
> : (d.) ( d. -- ) tuck dabs <# #s rot sign #> ;
> -1234567. (d.) type cr
> . 'dot' can be built on (d.), thus:
> : . ( n -- ) s>d (d.) type space ;
>
> Having made your string, you can pass it to Palm OS routines using >ABS,
after
> first making sure it's zero-delimited. Here's a version of (d.) that will
> zero-delimit the provided string:
> : (d.) ( d. -- ) tuck dabs <# 0 hold #s rot sign #> ;
> Let me know if you need further examples, etc.
> Neal
```

Re: String to Num conversions...

Posted by [Neal Bridges](#) on June 02, 1999 at 22:43:39:

In Reply to: [String to Num conversions...](#) posted by Jesse Helton on June 02, 1999 at 22:05:25:

> OK, I'm a newbie to Forth, so bear with me. I have a related question, so I'll
> post it here. How do you convert a string to a number?

The heart of any string-to-integer conversion is the standard word >NUMBER.
needs double

```
: string>number ( c-addr u -- d. )  
  0. 2swap >number 2drop ;  
  
: example  
  s" 12345" string>number d. ;
```

If you want to convert a double-cell number to a single-cell number, use S>D
or
DROP (it's the same operation).

> I want to take the contents of a field, interpret it as a numerical value,
> perform an operation on it, and put the result in another field (so the
current
> posting helps for part of my task).

> Also, what is the proper way to allocate temporary storage for a string? I
am
> trying to use PAD as the string address to have the contents of the field
> written to, but it crashes after about the third use of it.

You shouldn't be able to 'wear out' an area of memory like that :) I suspect
something else is going on. If you'd like to post or send me the code, I'd be
happy to look it over.

> You'll have to excuse me if the answers to my questions are standard fare
in
> Forth reference manuals. I am trying to grog through a couple of
references,
> but they both seem pretty dry |-P

No problem -- ask away. That's why this forum exists.

Neal

Re: Num to String conversions...

Posted by [Serg Koren](#) on May 29, 1999 at 23:16:24:

In Reply to: [Re: Num to String conversions...](#) posted by Neal Bridges on May 29, 1999 at 20:56:08:

```
> Numbers to strings are handled by the "picture numeric output words" --
> <# # #S #> HOLD and SIGN. Here's how to convert an unsigned double-cell
integer
> to a string:
> : (ud.) ( ud. -- ) <# #S #> ;
> example:
> 1234567. (ud.) type cr
> Building on that, here's how to convert a signed double-cell integer to a
> string:
> : (d.) ( d. -- ) tuck dabs <# #s rot sign #> ;
> -1234567. (d.) type cr
> . 'dot' can be built on (d.), thus:
> : . ( n -- ) s>d (d.) type space ;
>
> Having made your string, you can pass it to Palm OS routines using >ABS,
after
> first making sure it's zero-delimited. Here's a version of (d.) that will
> zero-delimit the provided string:
> : (d.) ( d. -- ) tuck dabs <# 0 hold #s rot sign #> ;
> Let me know if you need further examples, etc.
```

Hi Neal,
Nope that does it perfectly...it's slowly coming back. Thank you for the help,
it's much appreciated. You should win whatever prizes they might give for best
user support.

Cheers,
S

Re: Num to String conversions...

Posted by [Neal Bridges](#) on May 29, 1999 at 23:18:37:

In Reply to: [Re: Num to String conversions...](#) posted by Serg Koren on May 29, 1999 at 23:16:24:

> Hi Neal,
> Nope that does it perfectly...it's slowly coming back. Thank you for the help,
> it's much appreciated. You should win whatever prizes they might give for best
> user support.

Hey, thanks. Glad to help.

Neal

Re: Num to String conversions...

Posted by [Barry Marks](#) on May 31, 1999 at 00:48:50:

In Reply to: [Re: Num to String conversions...](#) posted by Neal Bridges on May 29, 1999 at 23:18:37:

> > Hi Neal,
> > Nope that does it perfectly...it's slowly coming back. Thank you for the
> help,
> > it's much appreciated. You should win whatever prizes they might give for
> best
> > user support.

> Hey, thanks. Glad to help.

> Neal

I don't know what the big deal is. I'm sure all software providers provide this kind of personal support.

By the way, does anyone know where to log in to Bill Gate's personal support forum for Microsoft products? I haven't been able to find it. :)

Barry

Re: Num to String conversions...[Bill Gates]

Posted by [Serg Koren](#) on May 31, 1999 at 10:10:40:

In Reply to: [Re: Num to String conversions...](#) posted by Barry Marks on May 31, 1999 at 00:48:50:

> I don't know what the big deal is. I'm sure all software providers provide
> this kind of personal support.

> By the way, does anyone know where to log in to Bill Gate's personal
support

> forum for Microsoft products? I haven't been able to find it. :)

> Barry

Didn't you know that Neal IS Bill Gates? (and just as rich?) ;-P (or should
be)

S

Re: Num to String conversions...[Bill Gates]

Posted by [Neal Bridges](#) on May 31, 1999 at 10:30:28:

In Reply to: [Re: Num to String conversions...\[Bill Gates\]](#) posted by Serg
Koren on May 31, 1999 at 10:10:40:

> > I don't know what the big deal is. I'm sure all software providers
provide

> > this kind of personal support.

> > By the way, does anyone know where to log in to Bill Gate's personal
support

> > forum for Microsoft products? I haven't been able to find it. :)

> Didn't you know that Neal IS Bill Gates? (and just as rich?) ;-P
< (or should be)

:)

Neal

meaning of i'

Posted by [Ross Lonstein](#) on May 29, 1999 at 17:48:46:

For no particular reason, aside from it is cool to program the Pilot on the road (thanks Neal), I am relearning Forth after a 19 year hiatus and stumbling my way through porting some things from gforth. I ran across the word i' (i prime) in a loop. I could not find it mentioned in the ANS draft and since I am no expert at 68x00 assembly I hoped that someone could tell me what it does.

Thanks in advance.

- Ross

Re: meaning of i'

Posted by [Neal Bridges](#) on May 29, 1999 at 17:57:33:

In Reply to: [meaning of i'](#) posted by Ross Lonstein on May 29, 1999 at 17:48:46:

> For no particular reason, aside from it is cool to program the Pilot on the road
> (thanks Neal), I am relearning Forth after a 19 year hiatus and stumbling my way
> through porting some things from gforth. I ran across the word i' (i prime) in
a
> loop. I could not find it mentioned in the ANS draft and since I am no expert
at
> 68x00 assembly I hoped that someone could tell me what it does.

I'd expect that i' would refer to the index of the do..loop 'around' the current do..loop -- in ANSI Forth it's called J.

As a rule, if you find you have nested loops, odds are good the innermost loop should be factored into its own word.

: example
5 0 do

```
5 0 do
  j i * .
loop
cr
loop ;
```

Neal

SysTaskDelay vs. MS ?

Posted by [Carl Jacobsen](#) on May 29, 1999 at 15:09:42:

Hi Neal,

In a couple recent postings, you've recommended calling SysTaskDelay, whereas I've occasionally used the word MS from the facility-ext word set (though it isn't listed in the facility-ext memo, so I guess it's built into Quartus?). Is MS just a wrapper around SysTaskDelay? i.e. something like:

```
: MS >abs SysTaskDelay DROP ;
```

Or does it do something different? Is there an advantage to calling SysTaskDelay directly other than fewer layers of code? Is it better to sit on the ANS Forth side of the fence, or the PalmOS SDK side? :-)

Always trying to understand all the gory details,
-- Carl

Re: SysTaskDelay vs. MS ?

Posted by [Neal Bridges](#) on May 29, 1999 at 15:40:26:

In Reply to: [SysTaskDelay vs. MS ?](#) posted by Carl Jacobsen on May 29, 1999 at 15:09:42:

> In a couple recent postings, you've recommended calling SysTaskDelay, Well, I wouldn't say I've recommended calling it -- it's certainly in there, and it works, but yes, MS is the standard version.

In fact upon review I may have mislead -- SysTaskDelay takes ticks (100ths of a second), not milliseconds. MS takes milliseconds, but because it then uses SysTaskDelay, its effective resolution is in 100ths of a second.

> whereas I've occasionally used the word MS from the facility-ext word
> set (though it isn't listed in the facility-ext memo, so I guess it's
> built into Quartus?). Is MS just a wrapper around SysTaskDelay? i.e.
> something like:

>

```
> : MS >abs SysTaskDelay DROP ;
```

>

Something like, though >ABS is used for addresses -- it's actually like this:

```
: MS ( ms -- ) 10 / dup 0= 1 and + s>d SysTaskDelay drop ;
```

I divide the millisecond argument by 10 to get ticks, and then convert that to a 1 if it's a zero (there's a problem passing 0 to SysTaskDelay). Then S>D converts the single-cell argument to a double, and SysTaskDelay is called.

> Or does it do something different? Is there an advantage to calling
> SysTaskDelay directly other than fewer layers of code? Is it better to
> sit on the ANS Forth side of the fence, or the PalmOS SDK side? :-)

No advantage -- stay on the ANS side, I'd say. To be honest I'd forgotten that

MS existed when I posted the reply :)

> Always trying to understand all the gory details,
> -- Carl

Neal

Re: SysTaskDelay vs. MS ?

Posted by [Carl Jacobsen](#) on May 29, 1999 at 15:11:44:

In Reply to: [SysTaskDelay vs. MS ?](#) posted by Carl Jacobsen on May 29, 1999 at 15:09:42:

'course, soon as I hit the Submit button, I realized that should probably be S>D instead of >abs:

```
: MS S>D SysTaskDelay DROP ;
```

-- Carl

HowTo Environment Collection

Posted by [Erwin Schomburg](#) on May 29, 1999 at 08:40:49:

Trying not to duplicate the tutorial, I have set up some comments on how to set up a Quartus Design Environment. You are invited to comment on contents and quality of the information.

/Erwin

- [How to build an ODE](#)

Re: HowTo Environment Collection

Posted by [E. Ross Helton](#) on May 29, 1999 at 13:37:58:

In Reply to: [HowTo Environment Collection](#) posted by Erwin Schomburg on May 29, 1999 at 08:40:49:

Hi Erwin;

Looks like several of us are on the same wavelength. I had mentioned to Neal that I would like to see more tutorial information, and wanted to develop some very simple instructions. These would be for the very basic beginner in Forth such as myself.

Looks as if you have done a very good start in getting this going. Thanks. I would recommend your Eisbar program is a very good example of some things which are helpful in learning about other programming. As I said to you in an earlier posting, it helped me formulate a repeat option for my Retrek Program.

Maybe one of these days, my programming will qualify for induction into Neal's areas.

thanks again for helping those of us out there who don't have a big background in Forth, but who want to get going.

Of course, the BIG KUDDOS go to Neal for making all of this possible.

RAH! RAH! give the man a hand

Make it a good day!

Ross

Re: HowTo Environment Collection

Posted by Erwin on May 29, 1999 at 14:04:13:

In Reply to: [Re: HowTo Environment Collection](#) posted by E. Ross Helton on May 29, 1999 at 13:37:58:

--snip
> Of course, the BIG KUDDOS go to Neal for making all of this possible.
> RAH! RAH! give the man a hand
>
> Make it a good day!
> Ross

I think THAT one is kind of self-evident.
RAH!

/Erwin

Re: HowTo Environment Collection

Posted by [Barry Marks](#) on May 29, 1999 at 10:44:08:

In Reply to: [HowTo Environment Collection](#) posted by Erwin Schomburg on May 29, 1999 at 08:40:49:

Thanks for your tips and explanations. I've already done some of what you suggest but there were a lot of useful ideas that I'll be trying.

In particular I haven't looked into getting Pose at all. I wasn't really sure what it was, even. I knew there was an emulator around but that was about it. I used your links and downloaded it. I'll get around to installing it and trying it soon.

I also followed your link to Pop! and got it from PilotGEAR. That will make life much easier.

Thanks

Barry

Delays

Posted by [Barry Marks](#) on May 28, 1999 at 18:19:29:

I'm doing a simple little animation that simply moves a bitmap across the screen. But powered by the mighty 68000 it moves too fast. What is available to slow things down? Hopefully there's something other than a loop that will run the same speed on a faster Palm. I don't need that now but I will sometime and I'd like to learn to use it if it exists.

I did find SysTaskDelay but when I tried that with a 10 on the stack (hoping that was 10 millisecons) I waited about 5 minutes and finally did a soft reset. Is that the right function for short delays and did I use it wrong? Or is there something else?

Barry

Re: Delays

Posted by [Neal Bridges](#) on May 28, 1999 at 21:15:58:

In Reply to: [Delays](#) posted by Barry Marks on May 28, 1999 at 18:19:29:

> I'm doing a simple little animation that simply moves a bitmap across the
> screen. But powered by the mighty 68000 it moves too fast. What is
available
> to slow things down? Hopefully there's something other than a loop that
will
> run the same speed on a faster Palm. I don't need that now but I will
sometime
> and I'd like to learn to use it if it exists.

> I did find SysTaskDelay but when I tried that with a 10 on the stack
(hoping
> that was 10 millisecons) I waited about 5 minutes and finally did a soft
> reset. Is that the right function for short delays and did I use it wrong?
Or
> is there something else?

SysTaskDelay is what you want. If you have a look at its stack diagram:

```
SysTaskDelay ( delay. -- Err )
```

It takes a double-cell number as input, and returns a single cell.

10. SysTaskDelay drop would be the right form for a 10-millisecond delay.

Neal

Check out the Forth WebRing!

Posted by [Neal Bridges](#) on May 27, 1999 at 22:54:46:

If you go to my home page, you'll find the Forth WebRing links at the bottom. These will connect you with a series of Forth related sites.

Neal

- [Neal Bridges' Quartus Home Page](#)

First Quartus App: Porting some BASIC code. Help!

Posted by [Bob Cunningham](#) on May 27, 1999 at 18:58:46:

I thought I'd port the following chunk of BASIC code to test both Quartus Forth and the Pilot. I've spent a couple of weeks learning Forth, and I'm now convinced the program listed below isn't that trivial in Forth! (For me, at least.)

The application simply talks to a flight instrument (the "Graphics Comp" by Ball Variometers, Inc.) and repeatedly reads and displays four 16-bit data values: Altitude, Vario (rate of change of altitude), Airspeed, and Temperature. That's all!

First, here's the BASIC code:

```
=====
REM GC START TEST PROGRAM
REM WRITTEN 03-21-95 BY SirBud

DIM E2N(32), T(32), D(32), T1(32), D1(32)
ST:
CLS
PRINT "TURN UNIT OFF.....THEN BACK ON"
PRINT "PRESS ANY KEY TO CONTINUE....."
GG:
BB$ = INKEY$
IF BB$ = "" GOTO GG

GALT = 0: BN = 0: CLZ = 35: VL = 0: OTV = 0: POT = 0: TG = 0: CF = 0
```

```

OPEN "COM1: 4800,N,8,1,CS,DS" FOR RANDOM AS #1 LEN = 1
FIELD #1, 1 AS A$

PRINT #1, CHR$(151); : GOSUB TMX
PRINT #1, CHR$(152); : GOSUB TMX
PRINT #1, CHR$(151); : GOSUB TMX
PRINT #1, CHR$(152); : GOSUB TMX
PRINT #1, CHR$(151); : GOSUB TMX
PRINT #1, CHR$(152); : GOSUB TMX
PRINT #1, CHR$(151); : GOSUB TMX
PRINT #1, CHR$(152); : GOSUB TMX

```

```
CLS
```

```
rem === I'm going to hard-code my unit S/N (107) ===
```

```

START:
PRINT "ENTER THE SERIAL NUMBER FOR UNIT # ";
INPUT SN
SNH = INT(SN / 256)
SNL = SN - (SNH * 256)
IF SNL > 127 THEN SNL = SNL - 128
CLS

```

```

STMD:
LOCATE 1, 1

```

```
PRINT #1, CHR$(170); : GOSUB TMX 'ALT
```

```

PRINT #1, CHR$(174); : GOSUB TMX '\
PRINT #1, CHR$(SNL); : GOSUB TMX ' | READ UNIT
GET #1, 1 ' |
ALTH = ASC(A$) ' |
GET #1, 1 ' |
ALTL = ASC(A$) ' |
ALT = (256 * ALTH) + ALTL '/'

```

```
PRINT #1, CHR$(171); : GOSUB TMX 'TEMP
```

```

PRINT #1, CHR$(174); : GOSUB TMX '\
PRINT #1, CHR$(SNL); : GOSUB TMX ' | READ UNIT
GET #1, 1 ' |
TMPH = ASC(A$) ' |
GET #1, 1 ' |
TMPL = ASC(A$) ' |
TMP = (256 * TMPH) + TMPL '/'

```

```
PRINT #1, CHR$(173); : GOSUB TMX 'AIRSPEED
```

```

PRINT #1, CHR$(174); : GOSUB TMX '\
PRINT #1, CHR$(SNL); : GOSUB TMX ' | READ UNIT
GET #1, 1 ' |

```

```
ATMPH = ASC(A$) ' |
GET #1, 1 ' |
ATMPL = ASC(A$) ' |
ATMP = (256 * ATMPH) + ATMPL '/

PRINT #1, CHR$(172); : GOSUB TMX 'VARIO

PRINT #1, CHR$(174); : GOSUB TMX '\
PRINT #1, CHR$(SNL); : GOSUB TMX ' | READ UNIT
GET #1, 1 ' |
VARH = ASC(A$) ' |
GET #1, 1 ' |
VARL = ASC(A$) ' |
VAR = (256 * VARH) + VARL '/

LOCATE 1, 1: PRINT " # ALT TEMP AIRSPEED
VARIO"
LOCATE 2, 1
PRINT SNL; TAB(9); ALT; TAB(21); TMP; TAB(32); ATMP; TAB(48); VAR; " "
'STOP
BB$ = INKEY$
IF BB$ = "T" OR BB$ = "t" THEN CLS : CLOSE : END
PRINT "PRESS 'T' TO CONTINUE...";
GOTO STMD
```

```
TMX:
T = TIMER
TMX1:
IF TIMER > T + 0! THEN RETURN
GOTO TMX1
```

=====
Now, here's my newbie barf-o-matic Forth:

```
=====  
\ gc - 5/23/99 2:21 pm  
\ Print banner while loading...  
CR .( Ball Graphics Comp Serial I/O) CR  
\ -----  
\ Libraries  
\ -----  
\ Why so many errors from other libraries when these are included?  
\ NEEDS safe  
\ NEEDS redefine  
  
NEEDS events  
NEEDS facility  
NEEDS facility-ext  
NEEDS serial  
NEEDS string
```

```
NEEDS textalign
NEEDS tools-ext

CR .( Libs done.) CR

\ -----
\ Resources
\ -----
\ ...Future...

\ -----
\ Constants
\ -----

\ - Port speed
4800. 2constant GC_BAUD

\ - Initial "wake up" handshake
151 constant GC_ATT_N_A
152 constant GC_ATT_N_B
2 constant GC_NUM_ATT_N_CHAR
4 constant GC_ATT_N_REPEAT

\ - GC Serial number (16 bits)
\ - This should be entered by user...
107 constant GC_SERNO

\ Data Request Codes
170 constant GC_REQ_ALTI
171 constant GC_REQ_TEMP
172 constant GC_REQ_VARIO
173 constant GC_REQ_SPEED
174 constant GC_DO_REQ

\ -----
\ Variables
\ -----

variable gcCharRead

CR .( Consts and Vars done.) CR

\ -----
\ Algorithm
\ -----

\ Initialize
: Initialize
page
0 gcCharRead !
\ Init serial Library
InitSerLib
DUP IF
```

```

." Error: InitSerLib = " . CR
(bye)
ELSE DROP THEN
\ Set defaults
serSettings: serGetSettings DROP
serDefaultSettings serSet.flags !
serSettings: serSetSettings DROP
;

\ Cycle GC power, wait until done
: CyclePower ( --- )
."Turn unit off, then back on." CR
."Press any key to continue"
BEGIN
KEY?
UNTIL
KEY DROP
GC_BAUD serOpen DROP
;

\ Send handshake
: SendHandshake ( --- )
GC_ATTN_REPEAT 0 DO
CHAR GC_ATTN_A
CHAR GC_ATTN_B
LOOP
GC_ATTN_REPEAT
GC_NUM+ATTN_CH *
serSend DROP 2DROP
;

\ Get unit S/N (if not in a const)
\ ... future...

\ Req & Read data
: ReqAndRead ( Ccmd --- val )
CHAR GC_DO_REQ
CHAR GC_SERNO
3 serSend DROP 2DROP
DO
gcCharRead 1 serRecv 2DROP
DUP
WHILE
;

\ Get and display readings 'til done
\ -----
\ Main Program
\ -----

: go

```

```
\ Prepare  
Initialize  
CyclePower  
SendHandshake
```

```
\ Get & display readings
```

```
;
```

```
=====
```

Am I beyond all hope? I'm certain I'm handling my characters all wrong, and I'm equally certain I'm setting the serial port to toaster mode. When I include the SAFE and REDEFINE libraries, I get a zillion errors when the other libraries are included. My degugging hasn't gotten beyond loading the code, though I would kill for a "trace" function, so I can see the context where errors are generated (or get a line number and file name). Anyhow, I'm pretty much pulling a hard vacuum here...

Thanks, in advance, for any and all advice, code, criticism and prayer.

-BobC

Re: First Quartus App: Porting some BASIC code. Help!

Posted by [Neal Bridges](#) on May 27, 1999 at 20:19:12:

In Reply to: [First Quartus App: Porting some BASIC code. Help!](#) posted by Bob Cunningham on May 27, 1999 at 18:58:46:

A few pointers/comments:

```
> \ Initialize  
> : Initialize  
> page  
> 0 gcCharRead !  
> \ Init serial Library  
> InitSerLib  
> DUP IF  
> ." Error: InitSerLib = " . CR  
> (bye)  
> ELSE DROP THEN  
> \ Set defaults  
> serSettings: serGetSettings DROP  
> serDefaultSettings serSet.flags !
```

```
> serSettings: serSetSettings DROP
```

'serSettings:' is a defining word, and can't be used like this inside another defining word. Do this:

Up in your variable and constants section, use

```
serSettings: mysettings
```

to create a settings structure named 'mysettings'.

```
> ;
```

```
> \ Cycle GC power, wait until done
> : CyclePower ( --- )
> ."Turn unit off, then back on." CR
> ."Press any key to continue"
> BEGIN
> KEY?
> UNTIL
> KEY DROP
```

The BEGIN UNTIL you've listed here will work, but it's unnecessarily complex. Simply do

```
KEY DROP
```

```
> GC_BAUD serOpen DROP
```

I've worked with the *serial* library a bit recently. It's necessary to set the baud rate yourself after the SerOpen --

```
mysettings SerGetSettings
GC_BAUD mysettings serset.baud 2!
mysettings SerSetSettings
```

```
> ;
```

```
> \ Send handshake
> : SendHandshake ( --- )
> GC_ATTN_REPEAT 0 DO
> CHAR GC_ATTN_A
> CHAR GC_ATTN_B
```

CHAR is a parsing word used to process characters from the Quartus Forth console

-- not what you want. I presume you want to send the characters represented by GC_ATTN_A and GC_ATTN_B out of the serial port. The Palm OS doesn't provide a call that just sends one character, but you can simulate it by

storing your character using C! in a variable, and using SerSend to send a one-character string.

In your variable area:

```
variable buffer
```

and to send a character:

```
GC_ATT_N_B buffer c! buffer 1 SerSend drop
```

```
> LOOP
> GC_ATT_N_REPEAT
> GC_NUM+ATT_N_CH *
```

I'm not at all clear what GC_NUM+ATT_N_CH represents, or why you're multiplying these two values together. I'd recommend against creating a variable name with a + in it -- it's easily misread as an addition operation.

The serSend that you have coded next will try to send the buffer and length specified by the top two cells on the stack, and I don't see that you're putting a buffer address or a length on the stack here.

```
> serSend DROP 2DROP
> ;

> \ Get unit S/N (if not in a const)
> \ ... future...

> \ Req & Read data
> : ReqAndRead ( Ccmd --- val )
> CHAR GC_DO_REQ
> CHAR GC_SERNO
```

Again, the previous comments about CHAR apply here.

```
> 3 serSend DROP 2DROP
> DO
> gcCharRead 1 serRecv 2DROP
> DUP
> WHILE
> ;
>

> \ Get and display readings 'til done

> \ -----
> \ Main Program
> \ -----

> : go

> \ Prepare
> Initialize
> CyclePower
> SendHandshake

>
```

```
> \ Get & display readings
```

```
> ;
```

Let me know if any of that makes sense to you as a first pass.

When translating a program from another language, generally I'd first translate each line of the program almost verbatim, and then go back over the code to see what repeated sequences should be factored into their own words, etc. It looks like you're trying to re-write the program at the same time as translating it, which is difficult, and more difficult when you're unfamiliar with the target language.

I recommend you take your translation one small step at a time. Write the first word, get that running, then build on that. Open the port & configure settings, then work out how to send a byte out of the port, etc.

Also, take heart -- you've chosen to tackle serial i/o as your first project, and the Palm OS serial functions are far from intuitive. We can get you there eventually, though.

Neal

Re: First Quartus App: Porting some BASIC code. Help!

Posted by [Bob Cunningham](#) on May 27, 1999 at 22:28:49:

In Reply to: [Re: First Quartus App: Porting some BASIC code. Help!](#) posted by Neal Bridges on May 27, 1999 at 20:19:12:

I have incorporated your recommendations. My main problem now seems to be my unfamiliarity with character manipulation on and off the stack as numbers (instead of typed characters), and what the PalmOS functions want. Oddly enough, none of my Forth references seems to do much with numeric ASCII. I've allot'ed some larger variables to serve as character buffers, and I'm trying to figure out how to properly use them. Actually, I'm wondering how I'm going to do per-character manipulation on counted-strings.

My latest code is attached. This sequence of NEEDS causes core-ext to contain the following redefinitions: DO LOOP +LOOP WITHIN. And when toolkit loads, I get "is redefined" with no word in front of it.

Though the above are non-fatal, death occurs with the following message:

```
":? control structure mismatch"
```

Hopefully I'll have found my undoubtedly glaringly obvious error before you read this and are forced to publicly humiliate me!

Thanks!

-BobC

```
=====
\ gc - 5/27/99 7:11 pm

\ This Forth code re-implements the
\ BASIC code in the Ball program
\ "START.EXE". It places the GC in
\ data polling mode, then repeatedly
\ polls for Altitude, Vario, Speed and
\ Temperature. Exiting is via hitting
\ any key.

\ Print banner while loading...
CR .( Ball Graphics Comp Serial I/O) CR

\ -----
\ Libraries
\ -----

NEEDS announce
NEEDS safe
NEEDS redefine

NEEDS events
NEEDS facility
NEEDS facility-ext
NEEDS serial
NEEDS string
NEEDS textalign
NEEDS tools-ext

CR .( Libs done.) CR

\ -----
\ Resources
\ -----
\ ...Future...

\ -----
\ Constants
\ -----

\ - Port speed
```

```
4800. 2constant GC_BAUD

\ - Initial "wake up" handshake
151 constant GC_ATT_N_A
152 constant GC_ATT_N_B
2 constant GC_NUM_ATT_N_CHAR
4 constant GC_ATT_N_REPEAT

\ - GC Serial number (16 bits)
\ - This should be entered by user...
107 constant GC_SERNO

\ Data Request Codes
170 constant GC_REQ_ALTI
171 constant GC_REQ_TEMP
172 constant GC_REQ_VARIO
173 constant GC_REQ_SPEED
174 constant GC_DO_REQ

\ -----
\ Variables
\ -----

variable gcReadBuf 16 chars 0allot
variable gcInitStr 16 chars 0allot
variable gcReqStr 16 chars 0allot

SerSettings: mysettings

\ -----
\ Algorithm
\ -----

\ Utils
: 3DROP DROP 2DROP ;

\ Initialize
: Initialize

page
InitSerLib
DUP IF
CR ." Error: InitSerLib = " . CR
(bye)
ELSE DROP THEN

\ - Set defaults
serSettings: serGetSettings DROP
serDefaultSettings serSet.flags !
serSettings: serSetSettings DROP
;

\ Cycle GC power, wait until done
: CyclePower ( --- )
." Turn unit off, then back on." CR
```

```
." Press any key to continue"
KEY DROP
GC_BAUD serOpen DROP
mysettings SerGetSettings
GC_BAUD mysettings
SerSet.baud 2!
mysettings SerSetSettings
;

\ Send handshake
: SendHandshake ( --- )
GC_ATTN_REPEAT 0 DO
GC_ATTN_A
GC_ATTN_B
LOOP
GC_ATTN_REPEAT
GC_NUM_ATTN_CHAR *
serSend 3DROP
;

\ Get unit S/N (if not in a const)
\ ... future...

\ Request & Read data
: ReqAndRead ( Ccmd --- val )
CHAR GC_DO_REQ
CHAR GC_SERNO
3 serSend 3DROP
DO
gcReadBuf 1 serRecv 3DROP
DUP
WHILE
;

\ Get a full set of data

\ Get and display readings 'til done
\ -----
\ Main Program
\ -----

: go

\ Prepare
Initialize
CyclePower
SendHandshake

\ Get & display readings
```

;
=====

Re: First Quartus App: Porting some BASIC code. Help!

Posted by [Neal Bridges](#) on May 27, 1999 at 22:40:37:

In Reply to: [Re: First Quartus App: Porting some BASIC code. Help!](#) posted by Bob Cunningham on May 27, 1999 at 22:28:49:

> I have incorporated your recommendations. My main problem now seems to be my
> unfamiliarity with character manipulation on and off the stack as numbers
> (instead of typed characters), and what the PalmOS functions want. Oddly
> enough, none of my Forth references seems to do much with numeric ASCII.
I've
> allot'ed some larger variables to serve as character buffers, and I'm
trying
to
> figure out how to properly use them. Actually, I'm wondering how I'm going
to
> do per-character manipulation on counted-strings.

Please do ask any specific questions that come up -- glad to help.

To send one character:

```
variable buffer  
: charsend ( char -- )  
  buffer c!  buffer 1 SerSend drop 2drop ;
```

> My latest code is attached. This sequence of NEEDS causes core-ext to
contain
> the following redefinitions: DO LOOP +LOOP WITHIN. And when toolkit loads,
I
> get "is redefined" with no word in front of it.
> Though the above are non-fatal, death occurs with the following message:
> "?: control structure mismatch"
> Hopefully I'll have found my undoubtedly glaringly obvious error before you
> read this and are forced to publicly humiliate me!
>
> Thanks!

```
> -BobC

> =====
> \ gc - 5/27/99 7:11 pm

> \ This Forth code re-implements the
> \ BASIC code in the Ball program
> \ "START.EXE". It places the GC in
> \ data polling mode, then repeatedly
> \ polls for Altitude, Vario, Speed and
> \ Temperature. Exiting is via hitting
> \ any key.

> \ Print banner while loading...
> CR .( Ball Graphics Comp Serial I/O) CR

> \ -----
> \ Libraries
> \ -----

> NEEDS announce
> NEEDS safe
> NEEDS redefine

> NEEDS events
> NEEDS facility
> NEEDS facility-ext
> NEEDS serial
> NEEDS string
> NEEDS textalign
> NEEDS tools-ext

> CR .( Libs done.) CR

> \ -----
> \ Resources
> \ -----
> \ ...Future...

> \ -----
> \ Constants
> \ -----

> \ - Port speed
> 4800. 2constant GC_BAUD

> \ - Initial "wake up" handshake
> 151 constant GC_ATTN_A
> 152 constant GC_ATTN_B
> 2 constant GC_NUM_ATTN_CHAR
> 4 constant GC_ATTN_REPEAT

> \ - GC Serial number (16 bits)
> \ - This should be entered by user...
```

```

> 107 constant GC_SERNO

> \ Data Request Codes
> 170 constant GC_REQ_ALTI
> 171 constant GC_REQ_TEMP
> 172 constant GC_REQ_VARIO
> 173 constant GC_REQ_SPEED
> 174 constant GC_DO_REQ

> \ -----
> \ Variables
> \ -----

> variable gcReadBuf 16 chars 0allot
> variable gcInitStr 16 chars 0allot
> variable gcReqStr 16 chars 0allot

> SerSettings: mysettings

> \ -----
> \ Algorithm
> \ -----

> \ Utils
> : 3DROP DROP 2DROP ;

> \ Initialize
> : Initialize
> page
> InitSerLib
> DUP IF
> CR ." Error: InitSerLib = " . CR
> (bye)
> ELSE DROP THEN
> \ - Set defaults
> serSettings: serGetSettings DROP
> serDefaultSettings serSet.flags !
> serSettings: serSetSettings DROP
> ;

> \ Cycle GC power, wait until done
> : CyclePower ( --- )
> ." Turn unit off, then back on." CR
> ." Press any key to continue"
> KEY DROP
> GC_BAUD serOpen DROP
> mysettings SerGetSettings
> GC_BAUD mysettings
> SerSet.baud 2!
> mysettings SerSetSettings
> ;

> \ Send handshake

```

```
> : SendHandshake ( --- )
> GC_ATTEN_REPEAT 0 DO
> GC_ATTEN_A
> GC_ATTEN_B
> LOOP
> GC_ATTEN_REPEAT
> GC_NUM_ATTEN_CHAR *
> serSend 3DROP
> ;
```

There's still some oddities here. Your first loop

```
GC_ATTEN_REPEAT 0 DO ... LOOP
```

will simply place the values GC_ATTEN_A and GC_ATTEN_B on the stack

```
GC_ATTEN_REPEAT
```

times. I presume the subsequent multiplication is meant to specify the number

of characters to send for serSend. However, serSend doesn't send items from the

stack. The stack comment on serSend is (&addr len -- #. err). This means it accepts the address of a string, followed by the number of characters in that string; it sends that data, and returns a double number indicating the number of characters sent, and a single cell with an error status in it.

You'd need to either send your GC_ATTEN_A and GC_ATTEN_B characters one at a time

in your DO LOOP using the method I outlined above (this would be the simplest method), or assemble them into a longer string that you send all at once.

```
> \ Get unit S/N (if not in a const)
```

```
> \ ... future...
```

```
> \ Request & Read data
```

```
> : ReqAndRead ( Ccmd --- val )
```

```
> CHAR GC_DO_REQ
```

```
> CHAR GC_SERNO
```

```
> 3 serSend 3DROP
```

```
> DO
```

```
> gcReadBuf 1 serRecv 3DROP
```

```
> DUP
```

```
> WHILE
```

```
> ;
```

Your "control struct mismatch" comes from this word. DO..WHILE is not a valid Forth control structure. Try BEGIN UNTIL.

```
> \ Get a full set of data
```

```
>
```

```
> \ Get and display readings 'til done
```

```
> \ -----  
> \ Main Program  
> \ -----  
  
> : go  
  
> \ Prepare  
> Initialize  
> CyclePower  
> SendHandshake  
  
>  
> \ Get & display readings  
  
>  
> ;  
> =====
```

Neal

Well, at least it now loads...

Posted by [Bob Cunningham](#) on May 28, 1999 at 05:56:03:

In Reply to: [Re: First Quartus App: Porting some BASIC code. Help!](#) posted by Neal Bridges on May 27, 1999 at 22:40:37:

... But it soon hangs in SendHandshake. I suspect I also have lots of errors with my logical tests. I suppose only Forth could make a linear stack feel like a pretzel.

Here's the current code:

```
=====
```

```
\ gc - 5/27/99 7:11 pm  
  
\ Print banner while loading...  
CR .( Ball Graphics Comp Serial I/O) CR  
  
\ -----  
\ Libraries  
\ -----  
  
NEEDS announce  
NEEDS safe  
NEEDS redefine  
  
NEEDS dblmath  
\ NEEDS input  
NEEDS facility  
\ NEEDS facility-ext
```

```
NEEDS serial
NEEDS string
\ NEEDS textalign

CR .( Libs done.) CR

\ -----
\ Resources
\ -----
\ ...Future...

\ -----
\ Constants
\ -----

\ - Port speed
4800. 2constant GC_BAUD

\ - Initial "wake up" handshake
151 constant GC_ATTN_A
152 constant GC_ATTN_B
2 constant GC_NUM_ATTN_CHAR
4 constant GC_ATTN_REPEAT

\ - GC Serial number (16 bits)
\ - This should be entered by user...
107 constant GC_SERNO

\ Data Request Codes
170 constant GC_REQ_ALTI
171 constant GC_REQ_TEMP
172 constant GC_REQ_VARIO
173 constant GC_REQ_SPEED
174 constant GC_DO_REQ

\ -----
\ Variables
\ -----

variable gcReadBuf 16 0allot
variable gcInitStr 16 0allot
variable gcReqStr 16 0allot

SerSettings: mysettings

\ -----
\ Algorithm
\ -----

\ Utils

\ Send one character
variable buffer
: charsend ( char -- )
buffer c! buffer 1 SerSend 3DROP
```

```

;

\ Get one char
: charget ( -- char )
0 gcReadBuf !
BEGIN
gcReadBuf 1 serRecv DROP
DO= 0=
UNTIL
gcReadBuf C@
;

\ Get an int
: intget ( -- d )
charget 256 * \ Get MSB
charget + \ Add in LSB
;

\ Initialize
: Initialize ( -- )
\ page
." InitSerLib" CR
InitSerLib
0<> IF
CR ." Error: InitSerLib = " . CR
(bye)
THEN
\ - Set defaults
." SerSettings" CR
mysettings serGetSettings DROP
serDefaultSettings mysettings serSet.flags 2!
GC_BAUD mysettings serSet.baud 2!
mysettings serSetSettings DROP
;

\ Cycle GC power, wait until done
: CyclePower ( -- )
CR ." Turn unit off, then back on."
CR ." Press any key to continue"
KEY DROP
GC_BAUD serOpen DROP
mysettings SerGetSettings
GC_BAUD mysettings
SerSet.baud 2!
mysettings SerSetSettings
;

\ Send handshake
: SendHandshake ( --- )
GC_ATTN_REPEAT 0 DO
GC_ATTN_A charsend
GC_ATTN_B charsend

```

```
LOOP
;

\ Get unit S/N (if not in a const)
\ ... future...

\ Request & Read data item
: ReqAndRead ( Ccmd --- d )
charsend
GC_DO_REQ charsend
GC_SERNO charsend
intget
;

\ Get a full set of data
: GetDataSet ( -- spd var tmp alt )
GC_REQ_ALTI ReqAndRead
GC_REQ_TEMP ReqAndRead
GC_REQ_VARIO ReqAndRead
GC_REQ_SPEED ReqAndRead
;

\ Get and Show readings 'til done
: GetAndShow ( -- )
GetDataSet
CR ." Speed = " . ." Vario = " .
." Temp = " . ." Altitude = " .
;

\ -----
\ Main Program
\ -----

: go

\ Prepare
Initialize
CyclePower
SendHandshake

\ Get & display readings
BEGIN
GetAndShow
KEY?
UNTIL
;

CR .( Done! Type "go" to run it.) CR

=====
```

Many thanks,

-BobC

Re: Well, at least it now loads...

Posted by [Neal Bridges](#) on May 28, 1999 at 14:30:59:

In Reply to: [Well, at least it now loads...](#) posted by Bob Cunningham on May 28, 1999 at 05:56:03:

> ... But it soon hangs in SendHandshake. I suspect I also have lots of errors
> with my logical tests. I suppose only Forth could make a linear stack feel
> like a pretzel.

The problem comes of tackling the program as a whole, instead of working on it a piece at a time. I'd start with sending just one character, get that working, and then build on it.

I'll load your code on my Palm today, and experiment with sending data to my PC;
I'll let you know what I find.

Neal

Good news! (was Re: Well, at least it now loads...)

Posted by [Neal Bridges](#) on May 28, 1999 at 15:25:10:

In Reply to: [Re: Well, at least it now loads...](#) posted by Neal Bridges on May 28, 1999 at 14:30:59:

> I'll load your code on my Palm today, and experiment with sending data to my PC;
> I'll let you know what I find.

Good news! I put a Palm in a HotSync cradle, and fired up HyperTerminal on the PC, set it to 4800 baud, direct to com1, and ran your code. It works -- sends four pairs of codes down, and then waits for input. I typed some random

characters on the screen -- it responds several times with another sequence of characters, and reports Speed, Vario, Temp, and Altitude three times on the screen.

Now, I don't know if your serial stop-bit/parity/etc. settings are correct, but your program logic appears intact. Also, after the run there are two 0s on the stack; not sure what's leaving them there, but they should be easy to find.

Neal

Re: Good news! (was Re: Well, at least it now loads...)

Posted by [Neal Bridges](#) on May 28, 1999 at 15:29:47:

In Reply to: [Good news! \(was Re: Well, at least it now loads...\)](#) posted by Neal Bridges on May 28, 1999 at 15:25:10:

> Good news!

By the way -- you'll want to definitely do a SerClose at the end of your run, as otherwise the serial port is left open; that eats battery.

Neal

Re: Good news! (was Re: Well, at least it now loads...)

Posted by [Bob Cunningham](#) on May 29, 1999 at 07:23:39:

In Reply to: [Re: Good news! \(was Re: Well, at least it now loads...\)](#) posted by Neal Bridges on May 28, 1999 at 15:29:47:

It runs for me too, when talking to a terminal. But it doesn't talk to my instrument. The PC version (compiled BASIC) talks to the instrument fine. Using a terminal program and manually typing to my instrument does not work for me.

I suspect a couple of things:

1. The Palm serial port may not be set to be "8-bit clean". It seems to send 8-bit data OK, but I have not yet verified if it can receive 8-bit (non-ASCII) data, and if it will pass control codes through without interpreting them. I expect it is OK, I just haven't verified it.
2. The inter-character timing in the original BASIC program may be critical. When I tried adding delays by polling TimGetTicks until the value changed, my Pilot reset. Right now I'm using "1000 0 DO 1 DROP LOOP", but I have no idea how long that takes. This might also explain why my manual typing doesn't work.

Any thoughts?

BTW, many thanks for all the help so far! I'm beginning to appreciate Forth, but only in the way a monkey would appreciate having a clarinet to use as a club. I can make it swing, but not the way Benny Goodman could... It sure is a different way of thinking about program implementation!

-BobC

Re: Good news! (was Re: Well, at least it now loads...)

Posted by [Neal Bridges](#) on May 29, 1999 at 12:31:27:

In Reply to: [Re: Good news! \(was Re: Well, at least it now loads...\)](#) posted by Bob Cunningham on May 29, 1999 at 07:23:39:

> I suspect a couple of things:

- > 1. The Palm serial port may not be set to be "8-bit clean". It seems to send 8-bit data OK, but I have not yet verified if it can receive 8-bit (non-ASCII) data, and if it will pass control codes through without interpreting them. I expect it is OK, I just haven't verified it.

I'm pretty sure it passes 8-bit data cleanly.

- > 2. The inter-character timing in the original BASIC program may be critical.
> When I tried adding delays by polling TimGetTicks until the value changed,

my

> Pilot reset. Right now I'm using "1000 0 DO 1 DROP LOOP", but I have no idea
> how long that takes. This might also explain why my manual typing doesn't work.

1000 0 do 1 drop loop will run very fast indeed. If you want to put in, say, a

10 millisecond delay, use

10. SysTaskDelay drop

(note the . after the 10 is important).

> BTW, many thanks for all the help so far! I'm beginning to appreciate Forth,

> but only in the way a monkey would appreciate having a clarinet to use as a club. I can make it swing, but not the way Benny Goodman could... It sure is

> a different way of thinking about program implementation!

Hey, no problem. Once you work with Forth for a while, it'll 'click in' and you'll be sailing.

Neal

Re: Good news! (was Re: Well, at least it now loads...)

Posted by [Neal Bridges](#) on May 29, 1999 at 15:43:33:

In Reply to: [Re: Good news! \(was Re: Well, at least it now loads...\)](#) posted by Neal Bridges on May 29, 1999 at 12:31:27:

> If you want to put in, say, a
> 10 millisecond delay, use

> 10. SysTaskDelay drop

As I mention in another thread -- the code above is actually a 10/100ths of a second delay, not a 10 millisecond delay. Sorry for the confusion.

Neal

Re: First Quartus App: Porting some BASIC code. Help!

Posted by [Bob Cunningham](#) on May 27, 1999 at 19:09:47:

In Reply to: [First Quartus App: Porting some BASIC code. Help!](#) posted by Bob Cunningham on May 27, 1999 at 18:58:46:

Ugh! Looks like all the spaces were crunched out by the wwwboard program. I SWEAR it was all nicely formatted when I pasted and posted it!

-BobC

Re: First Quartus App: Porting some BASIC code. Help!

Posted by [Neal Bridges](#) on May 27, 1999 at 19:55:14:

In Reply to: [Re: First Quartus App: Porting some BASIC code. Help!](#) posted by Bob Cunningham on May 27, 1999 at 19:09:47:

> Ugh! Looks like all the spaces were crunched out by the wwwboard program. I
> SWEAR it was all nicely formatted when I pasted and posted it!

It still is, in the 'Post Followup' window. No problem reading the code.

I need more information, Bob. I don't have the gadget you're attaching to for testing, and I'd need to know what errors you're getting at compile-time.

safe and *redefine* shouldn't give you any errors when loading library code -- they don't here. What errors are you getting?

As to context: when an error occurs, the 'Go Last Error' option in the menu will take you to the exact point in the memo where the error occurred.

Any info you can provide would be helpful. In the meantime I'll look at your code and see if I can see any obvious problems.

Neal

Another newbie question & suggestions

Posted by [Serg Koren](#) on May 27, 1999 at 17:37:47:

Hi Neal, et.al.

I've just registered (via web). Thanks!

Now to the question(s).

Is there a Quartus framework for Palm systrap based apps somewhere? That is I'm looking for something like the Starter.c file that you get when you create a project under Metrowerks. Something that has the skeletal portions of an app. If not maybe I'll try to convert Starter.c to FORTH (my FORTH has been dusty for about 15 years...the FUN part of coding is slowly coming back)

Also, any gotchas one should worry about in terms of writing a purely systrap based app within the Quartus memory space, etc? Any docs I should pour over?

Suggestions for Neal:

- The file library is great! However, it would be nice if each library file had some built-in comments that explain usage and purpose (stack diagrams are ok for syntax, but when you're trying to figure out what arcfour.txt does without access to the web its a pain ;-)
 - Examples of use for lots of the library files would be nice (see first suggestion)
 - Any plan on printed docs/a real manual?
 - Is anyone writing a "Quartus FORTH for Dummies" book yet?
 - Better integration of Quartus with DOC readers (maybe a plug-in module). Specifically direct read/write of DOC formats (without needing docinc); and more importantly having a DOC friendly Cmd-E to jump to errors within DOC documents.
- Right now if you have an error in a DOC executing CmdE wil drop you into a meaningless note in the notepad.
- Documentation for Quartus plug-in APIs (see last suggestion if you decide to do it.)
 - There are no more suggestions (for now.)

Thanks much Neal,
S

PS - When's the next rev coming out and what can we look f

Re: Another newbie question & suggestions

Posted by [Neal Bridges](#) on May 27, 1999 at 18:26:10:

In Reply to: [Another newbie question & suggestions](#) posted by Serg Koren on May 27, 1999 at 17:37:47:

> I've just registered (via web). Thanks!

Thank you!

> Now to the question(s).

> Is there a Quartus framework for Palm systrap based apps somewhere? That is I'm
> looking for something like the Starter.c file that you get when you create a
> project under Metrowerks. Something that has the skeletal portions of an app.

Quartus Forth provides that skeleton for you. Here's a Hello World app:

```
: hello
  MainForm
  ." Hello, World!"
  begin key drop again ;
needs ids
' hello (ID) myid MakePRC Hello!
```

And that's it. No launch code checking, no SysHandleEvent(), no appStopEvent checking, no FrmOpenEvent handling, nothing. Just your application code. That's one of the big strengths of the system; all the event and form handling is done for you transparently by the kernel itself.

> If not maybe I'll try to convert Starter.c to FORTH (my FORTH has been dusty
> for
> about 15 years...the FUN part of coding is slowly coming back)

Forth is certainly fun :) As I say, I don't believe there's anything in starter.c that you need -- Quartus Forth takes care of all that.

> Also, any gotchas one should worry about in terms of writing a purely systrap
> based app within the Quartus memory space, etc? Any docs I should pour over?

I'm not sure what you mean by 'a purely systrap based app', but there's nothing lurking in the shadows to worry about. The only thing that comes to mind is the

necessity to convert 16-bit addresses to 32-bit addresses using
>ABS when passing addresses to Palm OS systrops. Check out the
sample applications in the manual -- Year and Duco. Both do event handling
and
use systrops.

> Suggestions for Neal:

> - The file library is great! However, it would be nice if each library file
>had some built-in comments that explain usage and purpose (stack diagrams
are
>ok for
> syntax, but when you're trying to figure out what arcfour.txt does without
> access to the web its a pain ;-)

There's a Library section in the manual that gives some description, and
there
are comments throughout the library files. Please let me know when you find a
confusing spot; I'm happy to amend the material.

> - Examples of use for lots of the library files would be nice (see first
> suggestion)

There are sample apps in the manual, and a number of other examples in the
File
Area.

> - Any plan on printed docs/a real manual?

I presume by 'real' you mean a printed manual. I hadn't planned to print the
manual and sell it, no -- certainly you can print it if it's easier for you
to
use that way.

> - Is anyone writing a "Quartus FORTH for Dummies" book yet?

There's a tutorial in the File Area by Steven Donahue. I'm working on further
tutorial information presently.

> - Better integration of Quartus with DOC readers (maybe a plug-in module).
> Specifically direct read/write of DOC formats (without needing docinc); and
more
> importantly having a DOC friendly Cmd-E to jump to errors within DOC
documents.
> Right now if you have an error in a DOC executing CmdE wil drop you into a
> meaningless note in the notepad.

Yes -- it proves to be difficult to launch a DOC file with the cursor at a
specific point -- I haven't managed it yet, though honestly I haven't
invested a
great deal of time in so doing. Personally, I don't use DOC files for
development; the MemoPad is entirely adequate for what I do.

How would a 'plug-in' be better than *docinc*?

> - Documentation for Quartus plug-in APIs (see last suggestion if you decide to do it.)
>
> - There are no more suggestions (for now.)
>
> Thanks much Neal,
> S

> PS - When's the next rev coming out and what can we look f

There will be a version 1 update shortly; I'm at work on version 2, which has a more sophisticated optimizer and a number of other enhancements.

Neal

Re: Another newbie question & suggestions

Posted by [Serg Koren](#) on May 27, 1999 at 21:31:58:

In Reply to: [Re: Another newbie question & suggestions](#) posted by Neal Bridges on May 27, 1999 at 18:26:10:

> > Is there a Quartus framework for Palm systrap based apps somewhere? That is
> I'm
> > looking for something like the Starter.c file that you get when you create a
> > project under Metrowerks. Something that has the skeletal portions of an app.

> Quartus Forth provides that skeleton for you. Here's a Hello World app:

```
>  
> : hello  
>   MainForm  
>   ." Hello, World!"  
>   begin key drop again ;  
>  
needs ids  
> ' hello (ID) myid MakePRC Hello!  
>
```

Ok, to be more specific...I have a resource with forms and stuff in it. I want to be able to call FrmGotoForm etc., in a manner I'm familiar with. Is there

some code that I can steal that lets me display the form and react to events? I've looked at Duco but it isn't much help from this standpoint. I guess I'm confused as to WHAT exactly Quartus hides and what I have to worry about.

My basic newbie question is...given a form in a resource, how do I load and display it and react to events? How do I attach an event handler to a control?

How do I attach a menu handler to a menu item? (In Q?)

> Forth is certainly fun :) As I say, I don't believe there's anything in
> starter.c that you need -- Quartus Forth takes care of all that.

> > Also, any gotchas one should worry about in terms of writing a purely
systrap

> > based app within the Quartus memory space, etc? Any docs I should pour
over?

> I'm not sure what you mean by 'a purely systrap based app', but there's
nothing

> lurking in the shadows to worry about. The only thing that comes to mind is
the

> necessity to convert 16-bit addresses to 32-bit addresses using

> >ABS when passing addresses to Palm OS systraps. Check out the

> sample applications in the manual -- Year and Duco. Both do event handling
and

> use systraps.

The fact that I don't have to do all that is great, but as I said I guess I'm
not sure WHAT I have to worry about and when. I have a small test app written
in pure FORTH that I just through together, and as a next step I'd like to
put a

GUI around it. A nice commented example of PalmOS gui handling with a
resource

file would be useful (at least to me). That would certainly save some effort
in

trying to port my knowledge of "normal" PalmOS apps to Quartus. Otherwise
I'll

just get frustrated and try to port starter.c as I originally mentioned.

> > Suggestions for Neal:

> > - The file library is great! However, it would be nice if each library
file

> > had some built-in comments that explain usage and purpose (stack diagrams
are

> > ok for

> > syntax, but when you're trying to figure out what arcfour.txt does
without

> > access to the web its a pain ;-)

> There's a Library section in the manual that gives some description, and
there

> are comments throughout the library files. Please let me know when you find

a

> confusing spot; I'm happy to amend the material.

As I said it would be nice to have inline comments when all you have is your Palm and the source code. (No one claimed FORTH was a readable language (like COBOL (ack))) (Sorry "Lisp syntax")

> > - Examples of use for lots of the library files would be nice (see first
> > suggestion)

> There are sample apps in the manual, and a number of other examples in the
File
> Area.

Ditto, I don't always have the manual (but I always have the source code).

> > - Any plan on printed docs/a real manual?

> I presume by 'real' you mean a printed manual. I hadn't planned to print
the
> manual and sell it, no -- certainly you can print it if it's easier for you
to
> use that way.

Hm but it doesn't look as nice and isn't bound and isn't as well organized
and
full of great examples (as a real manual would be ;-). (I'd be willing to
pay
\$30 for one).

> > - Is anyone writing a "Quartus FORTH for Dummies" book yet?

> There's a tutorial in the File Area by Steven Donahue. I'm working on
further
> tutorial information presently.

Hm I guess my warped sense of humor got away from me. I was being literal
here...has anyone considered writing a "Programming the PalmOS in Quartus for
Dummies" book? If not maybe I'll toy with this in my (subminimal) free time.

> > - Better integration of Quartus with DOC readers (maybe a plug-in
module).

> > Specifically direct read/write of DOC formats (without needing docinc);
and

> more

> > importantly having a DOC friendly Cmd-E to jump to errors within DOC
> documents.

> > Right now if you have an error in a DOC executing CmdE wil drop you into
a

> > meaningless note in the notepad.

> Yes -- it proves to be difficult to launch a DOC file with the cursor at a
> specific point -- I haven't managed it yet, though honestly I haven't
invested

a

> great deal of time in so doing. Personally, I don't use DOC files for
> development; the MemoPad is entirely adequate for what I do.

> How would a 'plug-in' be better than *docinc*?

It would remove the clutter in my notepad for one. For another it would be cleaner (and somewhat faster since you wouldn't have to load the memos). Or better still is there a way to save a workspace environment and reuse it in Quartus (short of having to reload notes)? I seem to vaguely remember being able to do that back in my Brodie days.

Thanks & cheers,

S

> > - Documentation for Quartus plug-in APIs (see last suggestion

Re: Another newbie question & suggestions

Posted by [Neal Bridges](#) on May 27, 1999 at 22:07:15:

In Reply to: [Re: Another newbie question & suggestions](#) posted by Serg Koren on May 27, 1999 at 21:31:58:

> Ok, to be more specific...I have a resource with forms and stuff in it. I want

> to be able to call `FrmGotoForm` etc., in a manner I'm familiar with. Is there

> some code that I can steal that lets me display the form and react to events?

> I've looked at Duco but it isn't much help from this standpoint. I guess I'm

> confused as to WHAT exactly Quartus hides and what I have to worry about.

EKEY returns only those events not handled by the system. You need also never worry about `FormOpen` and `FormLoad` events -- just display your form with `ShowForm`. I'm not sure what you find lacking in Duco -- can you explain? It does exactly what you're after.

> My basic newbie question is...given a form in a resource, how do I load and
> display it and react to events? How do I attach an event handler to a
> control?

Here's a snippet, abstracted directly from the Duco source:

```
needs events
```

```
needs resources
```

```
needs ids
```

```
\ This assumes your resource database has
\ an ID of myid and a type of rsrc:
(id) myid (id) rsrc use-resources
\ This assumes your form has an ID of 2000,
\ and it has one button, with an ID of 2010:
2000 constant MyFormID
2010 constant MyButtonID
```

```
: go
  MyFormID ShowForm
  begin
    ekey ctlSelectEvent = if
      event >abs itemid
      MyButtonID = if beep then
    then
  again ;
```

The code shown will beep every time the button on the form is pushed.

Duco is exactly what you should look at. It's a short, minimal app that does just what you want. It displays a form (using ShowForm) and then handles events as they are provided by EKEY.

> How do I attach a menu handler to a menu item? (In Q?)

Duco does this as well -- although I've revised Duco, so it now does it more simply. Drop me an email and I'll send you the latest code; I haven't posted it yet but will shortly.

> The fact that I don't have to do all that is great, but as I said I guess I'm

> not sure WHAT I have to worry about and when. I have a small test app written

> in pure FORTH that I just through together, and as a next step I'd like to put

a

> GUI around it. A nice commented example of PalmOS gui handling with a
> resource file would be useful (at least to me).

Again -- not to sound like a broken record -- Duco puts up a GUI and handles events, and is (I trust) well commented. No amount of discussion will substitute for a little experimentation -- try the snippet above, look at Duco

and Year and Steven Donahue's tutorial, and see how simply events can be handled

in Quartus Forth apps. It's a doddle, really -- just load the form, and start a

loop that acts on the events that pop out of EKEY.

Donahue's tutorial also covers this ground in some detail.

> That would certainly save some effort
>in trying to port my knowledge of "normal" PalmOS apps to Quartus. Otherwise
>I'll just get frustrated and try to port starter.c as I originally
mentioned.

With existing knowledge of Palm OS apps, knowing that EKEY is equivalent to
one
pass through the 'event loop' should be all you need to get going.

> As I said it would be nice to have inline comments when all you have is
your
> Palm and the source code. (No one claimed FORTH was a readable language
(like
> COBOL (ack))) (Sorry "Lisp syntax")
> Ditto, I don't always have the manual (but I always have the source code).

Perhaps converting the manual to DOC format would be helpful for you; then
you'd
have it handy when you were away from your PC.

> > > - Any plan on printed docs/a real manual?

> > I presume by 'real' you mean a printed manual. I hadn't planned to print
> > the manual and sell it, no -- certainly you can print it if it's easier
for
> > you to use that way.

> Hm but it doesn't look as nice and isn't bound and isn't as well organized
and
> full of great examples (as a real manual would be ;-). (I'd be willing to
> pay \$30 for one).

Do you think the existing manual is poorly organized? Most example sources
are
in fact in the File Area and not in the manual, but there's a fair few of
them,
both there and in the archives of the Discussion Forum. And I'm always happy
to
write new examples on request.

I'm also working on new material, and revisions/additions to the manual.

> > > - Is anyone writing a "Quartus FORTH for Dummies" book yet?

> Hm I guess my warped sense of humor got away from me. I was being literal
> here...has anyone considered writing a "Programming the PalmOS in Quartus
for
> Dummies" book? If not maybe I'll toy with this in my (subminimal) free
> time.

I certainly won't discourage efforts to produce instructional material.
However, the Palm OS isn't trivial to understand; it requires a bit of study,
a
read-through of the 3Com SDK docs, examination of sample sources, etc.

Quartus

Forth helps with some of the details, but I'm not sure either handheld systems development or Forth can be usefully taught in the conceptual space a 'dummies' or 'idiots' book offers.

> > How would a 'plug-in' be better than *docinc*?

> It would remove the clutter in my notepad for one.

And it would shift that clutter into the DOC reader.

> For another it would be

> cleaner (and somewhat faster since you wouldn't have to load the memos). Or

> better still is there a way to save a workspace environment and reuse it in

> Quartus (short of having to reload notes)? I seem to vaguely remember being

> able to do that back in my Brodie days.

I'm not sure how much work a plug-in interface would entail, but it seems a lot

of trouble to go to just to replace needs *docinc*, or an include myprogram in the *startup.quartus* memo.

Quartus Forth doesn't retain the workspace between invocations. This is a deliberate design decision; the internal state of the Quartus Forth dictionary

may be intricately involved with the Palm OS GUI state, and there's no way to properly preserve the Palm OS GUI state.

Neal

A lightbulb goes off...

Posted by [Serg Koren](#) on May 27, 1999 at 23:33:16:

In Reply to: [Re: Another newbie question & suggestions](#) posted by Neal Bridges on May 27, 1999 at 22:07:15:

Hm...I just double checked the docs against my copy of Duco and it looks like the copy I have doesn't use use-resources nor does it include resources. (that's just an aside).

> Here's a snippet, abstracted directly from the Duco source:

>

needs events

> needs resources

> needs ids

```
>  
>  
> \ This assumes your resource database has  
> \ an ID of myid and a type of rsrc:  
> (id) myid (id) rsrc use-resources  
> \ This assumes your form has an ID of 2000,  
> \ and it has one button, with an ID of 2010:  
> 2000 constant MyFormID  
> 2010 constant MyButtonID  
>
```

```
>  
>  
> : go  
>   MyFormID ShowForm  
>   begin  
>     ekey ctlSelectEvent = if  
>       event >abs itemid  
>       MyButtonID = if beep then  
>     then  
>   again ;  
>
```

> The code shown will beep every time the button on the form is pushed.
> Duco is exactly what you should look at. It's a short, minimal app that does just what you want. It displays a form (using ShowForm) and then handles events as they are provided by EKEY.

Ah ok, now the lightbulb shines. Understanding the exact function of EKEY was the problem. Ok, I guess I must have another problem somewhere. With the above code but using my own resources all I get is a blank form (none of the controls show up). Creator and type are correct. I guess I'll have to do a bit more digging.

Oh a question I forgot earlier... in the stack diagrams how does one interpret the & (e.g. FtrGet(&valueP, featureNum creator. -- Err))? I understand its an address, does that mean I need to pass it via a >abs ?

> Do you think the existing manual is poorly organized? Most example sources are in fact in the File Area and not in the manual, but there's a fair few of them, both there and in the archives of the Discussion Forum. And I'm always happy

to
> write new examples on request.

Neal, no please don't take what I said to mean that the manual is poorly organized. It's not. It's a personal problem/preference I have of not liking to view documentation via hyperlinks. I like to sit down and read a manual linearly at least once, and I can't really do that in HTML without jumping all over.

I appreciate much your patience and help. I didn't mean to come off sounding critical, to the contrary I'm very impressed by both the product and the level of support you provide on here (don't you ever sleep?).

Thank you much :-)
S

Re: A lightbulb goes off...

Posted by [Neal Bridges](#) on May 27, 1999 at 23:51:39:

In Reply to: [A lightbulb goes off...](#) posted by Serg Koren on May 27, 1999 at 23:33:16:

> Hm...I just double checked the docs against my copy of Duco and it looks like
> the copy I have doesn't use use-resources nor does it include resources.
> (that's just an aside).

I believe the older Duco resources explicitly do a DmOpen on the resource database in question. use-resources is merely shorthand for that.

> > Here's a snippet, abstracted directly from the Duco source:

> Ah ok, now the lightbulb shines. Understanding the exact function of EKEY was
> the problem. Ok, I guess I must have another problem somewhere. With the
> above code but using my own resources all I get is a blank form (none of the
> controls show up). Creator and type are correct. I guess I'll have to do a
> bit more digging.

Are you using RsrcEdit? It's handy for checking that a form or other resource is properly formed -- if it previews properly in RsrcEdit, it ought to function properly in Quartus Forth also. If you're stumped, mail me your code and resources; I'll have a look.

> Oh a question I forgot earlier... in the stack diagrams how does one interpret
> the & (e.g. FtrGet(&valueP, featureNum creator. -- Err))? I understand its
> an address, does that mean I need to pass it via a >abs ?

That's in the manual -- there's a legend for all the notation I devised to document the Palm OS systrops. &valueP. is a double-cell address (32-bits), created from a 16-bit address (say, a variable) using >ABS. The & indicates an address, the . at the end indicates a double-cell value.

> > Do you think the existing manual is poorly organized? Most example sources
> are
> > in fact in the File Area and not in the manual, but there's a fair few of
> them,
> > both there and in the archives of the Discussion Forum. And I'm always happy
> to
> > write new examples on request.

> Neal, no please don't take what I said to mean that the manual is poorly
> organized. It's not. It's a personal problem/preference I have of not
liking
> to view documentation via hyperlinks. I like to sit down and read a manual
> linearly at least once, and I can't really do that in HTML without jumping
all
> over.

I can relate to the frustration that comes of getting lost in a maze of
twisty
little hyperlinks. Fortunately the Quartus Forth manual isn't too tangled --
it
generally only runs one level deep from the table of contents.

> I appreciate much your patience and help. I didn't mean to come off
sounding
> critical, to the contrary I'm very impressed by both the product and the
level
> of support you provide on here (don't you ever sleep?).

Thanks -- I appreciate that. Certainly criticism is always welcome; my
interest
is in improving the product.

Some people, upon first encountering Quartus Forth, would like to have a very
large, very simple document that takes them from zero to proficient, with an
working example of every Palm OS system call. That's a tall order, but I'm
working on it.

I encourage those starting out to experiment a little, and to ask questions
here

in the forum; considerable forward progress can be made that way in very short time.

Neal

Postings

Posted by [E. Ross Helton](#) on May 27, 1999 at 17:04:27:

Hi Neal;

If you get this posting, great. Have tried two other times to post a reply about the AOL chat and they didn't get listed

Make it a good day!

Ross

Re: Postings

Posted by [Neal Bridges](#) on May 27, 1999 at 17:07:15:

In Reply to: [Postings](#) posted by E. Ross Helton on May 27, 1999 at 17:04:27:

> Hi Neal;

> If you get this posting, great. Have tried two other times to post a reply
> about the AOL chat and they didn't get listed

> Make it a good day!

> Ross

All three of them show in the forum here -- perhaps there's a refresh issue with your browser.

Neal

Transcript of May 25, 1999 PDA Forum discussion now available

Posted by [Neal Bridges](#) on May 27, 1999 at 01:57:23:

Check out `quartus_conference.log`, just posted in the File Area. It's a transcript of the discussion hosted on AOL in the PDA Forum on May 25th. I've cleaned up the text and formatted it for easy reading.

Neal

Re: Transcript of May 25, 1999 PDA Forum discussion now available

Posted by [E. Ross Helton](#) on May 27, 1999 at 16:25:58:

In Reply to: [Transcript of May 25, 1999 PDA Forum discussion now available](#) posted by Neal Bridges on May 27, 1999 at 01:57:23:

Hi Neal;

Read the transcript of the AOL chat. You did a great job. Learned a couple of new things. Thanks for posting it. Emailed it to my son, who is now interested in Forth for the Pilot.

Make it a good day!

Ross

Re: Transcript of May 25, 1999 PDA Forum discussion now available

Posted by [Steve Graham](#) on May 28, 1999 at 00:07:55:

In Reply to: [Re: Transcript of May 25, 1999 PDA Forum discussion now available](#) posted by E. Ross Helton on May 27, 1999 at 16:25:58:

Neal,

Looked around your site and could not find the actual transcript. Can you

post the entire URL to it?

Thanks.

Steve Graham

===

> Hi Neal;

> Read the transcript of the AOL chat. You did a great job. Learned a couple of

> new things. Thanks for posting it. Emailed it to my son, who is now interested

> in Forth for the Pilot.

> Make it a good day!

> Ross

Re: Transcript of May 25, 1999 PDA Forum discussion now available

Posted by [Neal Bridges](#) on May 28, 1999 at 00:17:07:

In Reply to: [Re: Transcript of May 25, 1999 PDA Forum discussion now available](#) posted by Steve Graham on May 28, 1999 at 00:07:55:

> Neal,

> Looked around your site and could not find the actual transcript. Can you
> post the entire URL to it?

No problem -- it's below. To navigate to it, go to the File Area, choose Quartus Forth Files, and it's the first in the list.

Neal

- [Quartus Forth PDA Forum transcript from AOL, May 25 1999](#)

Re: Transcript of May 25, 1999 PDA Forum discussion now available

Posted by [E. Ross Helton](#) on May 27, 1999 at 16:23:10:

In Reply to: [Transcript of May 25, 1999 PDA Forum discussion now available](#)
posted by Neal Bridges on May 27, 1999 at 01:57:23:

Hi Neal;

You did a great job with the interview. I learned a couple of things from it, and I mailed it to my son to look at, since he is interested in Forth.

Make it a good day!

Ross

Newbie questions

Posted by [Serg Koren](#) on May 26, 1999 at 22:05:56:

1 - Are there a set of workspace words that ease having to reload a project each time Quartus is launched. Right now I'm just including my root memo each time I enter Quartus...there must be an easier way. (There should be a menu or shortcut item "include " and other common words.

2 - Am I confused, or does issuing a WORDS scroll more than one screenful before prompting for more? (This is probably a bug/oversight, Neal ;-)).

3 - (offtopic) is there an easy way to import Palm notes into a DOC editor/reader (I'm using QED) ON the Palm?

Thanks much,

S

Re: Newbie questions

Posted by [Carl Jacobsen](#) on May 26, 1999 at 23:50:36:

In Reply to: [Newbie questions](#) posted by Serg Koren on May 26, 1999 at 22:05:56:

> 1 - Are there a set of workspace words that ease having to reload a project
> each time Quartus is launched. Right now I'm just including my root memo
each
> time I enter Quartus...there must be an easier way. (There should be a menu
or
> shortcut item "include " and other common words.

I asked Neal some time back about a menu/dialog/whatever of recently included memos, I think it's still on his list :-). In the meantime, I've found Rick Bram's Pop! hack quite useful: for each of the projects I'm working on, I keep an entry in Pop! that says, for example, "include PhoneDecode" -- a couple stylus strokes, and it'll feed it in for me. (Yes, you could use PalmOS shortcuts for this, but this way there's fewer strokes, you get to select from a menu of strings, and you can add/delete items on the fly).

Alternatively, as discussed here a few months back, Popup Note is a hack that will let you edit your memos from inside Quartus -- you still need to get the "include programname" text entered some way, but you don't lose the environment of words that are already loaded each time you edit -- can make things a little quicker if you have a large program comprised of numerous smaller memos; if your code uses "needs" instead of "include" internally, changes to an upper-level memo can be recompiled without the supporting memos getting needlessly read back in and recompiled.

Hmm, did that make any sense?

> 3 - (offtopic) is there an easy way to import Palm notes into a DOC
> editor/reader (I'm using QED) ON the Palm?

I switched a while ago from QED to SmartDoc, which includes (amongst many other things) an "append memo to doc file" function (or something like that). And along the lines of what Neal said, EEdit Hack is one of several hacks that will expand your clipboard so you can Edit->SelectAll, Edit->Copy in MemoPad, and then Edit->Paste in your doc editor.

-- Carl

- [Pop!](#)

Re: Newbie questions

Posted by [Serg Koren](#) on May 27, 1999 at 17:24:12:

In Reply to: [Re: Newbie questions](#) posted by Carl Jacobsen on May 26, 1999 at 23:50:36:

>
> I asked Neal some time back about a menu/dialog/whatever of recently
> included memos, I think it's still on his list :-)

Yes that's what I meant, it would be nice to have a menu for recent memos and also common words such as include, need, and a few others.

> I switched a while ago from QED to SmartDoc, which includes (amongst
> many other things) an "append memo to doc file" function (or something
> like that). And along the lines of what Neal said, EEdit Hack is one
> of several hacks that will expand your clipboard so you can
Edit->SelectAll,
> Edit->Copy in MemoPad, and then Edit->Paste in your doc editor.

I just tried SmartDoc...great! The footprint is pretty big in comparison to QED..I guess it's what Microsoft Word is to DOS EDIT.

thanks,
S

PS - the WORDS do scroll a single page, but I swear it's doing more work than it has to

Re: Newbie questions

Posted by [Neal Bridges](#) on May 27, 1999 at 18:12:30:

In Reply to: [Re: Newbie questions](#) posted by Serg Koren on May 27, 1999 at 17:24:12:

> >
> > I asked Neal some time back about a menu/dialog/whatever of recently
> > included memos, I think it's still on his list :-)

> Yes that's what I meant, it would be nice to have a menu for recent memos and
> also common words such as include, need, and a few others.

For the latter, I recommend shortcuts; for the former, it's indeed on my

list.

> > I switched a while ago from QED to SmartDoc, which includes (amongst
> > many other things) an "append memo to doc file" function (or something
> > like that). And along the lines of what Neal said, EEdit Hack is one
> > of several hacks that will expand your clipboard so you can
Edit->SelectAll,
> > Edit->Copy in MemoPad, and then Edit->Paste in your doc editor.

> I just tried SmartDoc...great! The footprint is pretty big in comparison to
> QED..I guess it's what Microsoft Word is to DOS EDIT.

> thanks,
> S

> PS - the WORDS do scroll a single page, but I swear it's doing more work
than
> it has to

Not sure what you mean there. When so much information scrolls up on the LCD
display at once, it can look pretty busy for a moment.

Neal

Re: Newbie questions

Posted by [Neal Bridges](#) on May 26, 1999 at 22:20:50:

In Reply to: [Newbie questions](#) posted by Serg Koren on May 26, 1999 at
22:05:56:

> 1 - Are there a set of workspace words that ease having to reload a project
> each time Quartus is launched. Right now I'm just including my root memo
each
> time I enter Quartus...there must be an easier way. (There should be a menu
or
> shortcut item "include " and other common words.

Certainly "include " is a handy shortcut to define -- on my Palm it's
shortcut-i. If you want reload a project each time you start, the easiest
thing
to do is to put the appropriate 'include' statement in your startup.quartus
memo.

> 2 - Am I confused, or does issuing a WORDS scroll more than one screenful
> before prompting for more? (This is probably a bug/oversight, Neal ;-)).

Should just be one screenful each time. I'll look at it. I seldom use WORDS,
but yours is the only report I've had of a problem.

> 3 - (offtopic) is there an easy way to import Palm notes into a DOC

> editor/reader (I'm using QED) ON the Palm?

If you mean from the MemoPad to the Doc reader -- you can use cut and paste. The cut and paste limit is quite short, but there's a HackMaster hack available

(name escapes me at the moment, but probably ClipHack) that expands the limit considerably.

> Thanks much,

> S

No problem -- questions are always welcome. :)

Heal

Re: Newbie questions

Posted by [Erwin Schomburg](#) on May 27, 1999 at 00:13:30:

In Reply to: [Re: Newbie questions](#) posted by Neal Bridges on May 26, 1999 at 22:20:50:

> > 2 - Am I confused, or does issuing a WORDS scroll more than one screenful
> > before prompting for more? (This is probably a bug/oversight, Neal ;-)).

> Should just be one screenful each time. I'll look at it. I seldom use WORDS,

> but yours is the only report I've had of a problem.

> > 3 - (offtopic) is there an easy way to import Palm notes into a DOC

> > editor/reader (I'm using QED) ON the Palm?

> If you mean from the MemoPad to the Doc reader -- you can use cut and paste.

> The cut and paste limit is quite short, but there's a HackMaster hack available

> (name escapes me at the moment, but probably ClipHack) that expands the limit

> considerably.

> > Thanks much,

> > S

> No problem -- questions are always welcome. :)

> Heal

/\
/ \
Dr. Forth?

No, it does not scroll over, it just gives the impression. I often got the impression that it at least scrolled 3 pages, to realize that it didn't. To check just define a variable. It will then be seen at the top left position on the first screenful.

/Erwin

Forth C interface: Context??

Posted by [Dennis Misener](#) on May 24, 1999 at 18:23:12:

Is there special setup in dispatching to C routines from Quartus?

The following C code when built from Codewarrior and run through thier debugger behaves correctly (after uncommenting the first comment in PilotMain to force the Barcode scanner SPT1500_setup invocation).

Running the same code "dispatched" from Quartus.. causes a fatal exception error in SysLibFind called from ScanOpenDecoder(). Is there some stack/context information which must be passed/preserved (A5 globals) etc??

Tracing the code after dispatch from Quartus using the debugger shows the actual dispatch code has worked correctly. If I substitute code which doesn't use any system traps... (i.e. just return an error code)... all is fine

Any assistance would be appreciated

From Quartus -- The dispatcher

```
\ c-linkage
```

```
needs zStrings
```

```
variable cardNo
```

```
2variable dbID
```

```
hex 9000 constant remote decimal
```

```
: appName z" DySLib" ;
```

```
: UseCard cardNo ! ;
```

```
0 UseCard
```

```
create params 100 chars allot
```

```
2variable result
```

```
: Go
```

\ Get dbID for Application

```
appName drop >abs
cardNo @ DmFindDatabase
dbID 2!
```

\ Perform Dispatch

```
result >abs \ &resultP
params >abs \ &cmpPBP
remote \ launchcode
0 \ cmdLaunchFlags
dbID 2@ \ dbID
cardNo @ \ cardNo
SysAppLaunch \ -> Err
;
```

Go params @ .s cr

On the C side -- the library DySLib

```
#include
#include
#include "ScanMgrStruct.h" // include scan manager structure defs
#include "ScanMgrDef.h" // scan manager constant defs
#include "ScanMgr.h" // scan manager API function defs */

#define Q4th_EXTERNAL_FUNC_LOOKUP_LAUNCH_CODE sysAppLaunchCmdCustomBase
#define Q4th_EXTERNAL_FUNC_BASE_LAUNCH_CODE
Q4th_EXTERNAL_FUNC_LOOKUP_LAUNCH_CODE+0x1000)

void SPT1500_setup(Ptr stack_ptr);

DWord PilotMain(Word cmd, Ptr cmdPBP, Word launchFlags){
// cmd=Q4th_EXTERNAL_FUNC_BASE_LAUNCH_CODE; <- Comment out to run from
debugger
if (cmd return(0);
}else{
cmd-=Q4th_EXTERNAL_FUNC_BASE_LAUNCH_CODE;
SPT1500_setup(cmdPBP);
}
return(0);
}

void SPT1500_setup(Ptr stack_ptr){
Err error = 0;
if (ScanIsPalmSymbolUnit()){ // works fine
error=ScanOpenDecoder(); // dies when called from Quartus
}
*(Word *)stack_ptr=error;
}
```

Re: Forth C interface: Context??

Posted by [Neal Bridges](#) on May 24, 1999 at 23:41:52:

In Reply to: [Forth C interface: Context??](#) posted by Dennis Misener on May 24, 1999 at 18:23:12:

> Is there special setup in dispatching to C routines from Quartus?

You'll need to save registers before your dispatch and restore them afterward.

needs asm68k

To save regs:

```
(hex) ffff a7 -) .L movem>
```

To restore regs:

```
(hex) ffff a7 )+ .L movem<
```

Let me know how that goes -- if it works I can make a kernel word that does it for you, as well as allowing D0 and A0 as return registers.

Neal

Re: Forth C interface: Saving Registers

Posted by [Dennis Misener](#) on May 25, 1999 at 19:44:05:

In Reply to: [Re: Forth C interface: Context??](#) posted by Neal Bridges on May 24, 1999 at 23:41:52:

```
> needs asm68k
> To save regs:
> (hex) ffff a7 -) .L movem>
> To restore regs:
> (hex) ffff a7 )+ .L movem<
```

I trust the above have to appear as code words, something like:

```
code saveRegs
(hex) ffff a7 -) .L movem>
end-code
```

```
code RestoreRegs
(hex) ffff a7 )+ .L movem<
```

end-code

but since a7 == RP wouldn't the end-code be upset with the modified RP??
Empirically testing:

```
: test
1 2 3 .s cr
saveRegs
.s cr
RestoreRegs
.s cr ;
```

Exits with a fatal error. Substituting SP for A7, 'test' gave the desired results.

Is there another way of using the assembler in high level forth words (I'm used to ITC and so am rusty on DST forths).

BTW I noticed that the library code for .regs has

```
code getregs
] dup [
ffff sp -) .l movem>
] drop [
end-code
```

the ']' dup '[' and ']' drop '[' sure confuses me {grin}.

Next question:

Since my SP1500 example dies in the 'called' code when dispatched from Quartus, how is saving and restoring the registers going to help? I can see it would facilitate re-entry back into Quartus (i.e. restoring the Quartus context assuming registers aren't preserved thru the SysAppLaunch call -- a reasonable assumption) but it doesn't get that far!

I've traced the code using the Codewarrior debugger and the execution path is the same (not surprising). I can only assume that some entry condition (register convention) is not being adhered to. Very puzzling indeed. I wish I was more proficient in this stuff. Anymore hints?

> Let me know how that goes-- if it works I can make a kernel word that does it

> for you, as well as allowing D0 and A0 as return registers.

Sounds like a lovely addition.

Again ... thanks for your patience.

Re: Forth C interface: Saving Registers

Posted by [Neal Bridges](#) on May 25, 1999 at 20:38:26:

In Reply to: [Re: Forth C interface: Saving Registers](#) posted by Dennis Misener on May 25, 1999 at 19:44:05:

```
>
> > needs asm68k
> > To save regs:
> > (hex) ffff a7 -) .L movem>
> > To restore regs:
> > (hex) ffff a7 )+ .L movem<

> I trust the above have to appear as code words, something like:

> code saveRegs
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> (hex) ffff a7 )+ .L movem<
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> but since a7 == RP wouldn't the end-code be upset with the modified RP??
> Empirically testing:

> : test
> 1 2 3 .s cr
> saveRegs
> .s cr
> RestoreRegs
> .s cr ;

> Exits with a fatal error. Substituting SP for A7, 'test' gave the desired
> results.
```

That's a good thought, Dennis -- SP would be a better choice.

```
> Is there another way of using the assembler in high level forth words (I'm
> used to ITC and so am rusty on DST forths).
```

```
> BTW I noticed that the library code for .regs has
```

```
> code getregs
> ] dup [
> ffff sp -) .l movem>
> ] drop [
> end-code
```

```
> the ' ] dup [ ' and ' ] drop [ ' sure confuses me {grin}.
```

That's for loading the TOS (Top Of Stack) register for that particular piece of

code; in your case it wouldn't be required.

> Next question:

> Since my SP1500 example dies in the 'called' code when dispatched from
> Quartus, how is saving and restoring the registers going to help? I can
> see it would facilitate re-entry back into Quartus (i.e. restoring the
> Quartus context assuming registers aren't preserved thru the
> SysAppLaunch call -- a reasonable assumption) but it doesn't get that far!

I missed this point on the first pass. I'd like to replicate the error here,
see if I can puzzle out why it fails. Can you mail me the required bits &
pieces?

Neal

Re: Forth C interface: Saving Registers

Posted by [Dennis Misener](#) on May 25, 1999 at 21:24:36:

In Reply to: [Re: Forth C interface: Saving Registers](#) posted by Neal Bridges
on May 25, 1999 at 20:38:26:

On its way... just mailed it.

> I missed this point on the first pass. I'd like to replicate the error
here,
> see if I can puzzle out why it fails. Can you mail me the required bits &
> pieces?

> Neal

Re: Forth C interface: Saving Registers

Posted by [Neal Bridges](#) on May 26, 1999 at 12:40:04:

In Reply to: [Re: Forth C interface: Saving Registers](#) posted by Dennis Misener
on May 25, 1999 at 21:24:36:

> On its way... just mailed it.

Dennis -- just so you don't think I'm slacking, nothing arrived. Might try a
re-send.

Neal

Re: Forth C interface: Saving Registers

Posted by [Dennis Misener](#) on May 26, 1999 at 17:11:59:

In Reply to: [Re: Forth C interface: Saving Registers](#) posted by Neal Bridges on May 26, 1999 at 12:40:04:

> > On its way... just mailed it.

> Dennis -- just so you don't think I'm slacking, nothing arrived. Might try a
> re-send.

> Neal

2nd iteration just mailed... no notice of bounced mail... such is my luck.

Reminder: PDA Forum Chat on AOL, May 25th

Posted by [Neal Bridges](#) on May 24, 1999 at 00:10:59:

AOL members, I hope you'll join me for the PDA Forum's Palm chat on Tuesday, May 25, at 9:30 ET. We'll be talking about Quartus Forth, of course. If you don't have your own AOL account, perhaps you can borrow a friend's for the evening.

Once you've signed on, use keyword: PDA, which will take you to the Personal Digital Assistants Forum. The fourth button on the right side of the screen will place you to the conference room area.

If you have any questions, send a note to the forum leader, Susan Gustafson pdasusan@aol.com. If you are online but lost, send an Instant Message to PDA Susan. She'll toss you a link.

I look forward to answering your questions and learning more about how you are using Quartus Forth.

Neal

Turtle bug?

Posted by [Mike Kass](#) on May 23, 1999 at 18:19:28:

The library Turtle "goto" word adds 80 to the x and y coordinates to make the center of the screen 0,0. The "drawto" word doesn't do this. Is this a bug or a feature?

Great product, BTW. I'm new to Forth, and this forum is an excellent source of information. Keep up the great work!

Mike

Re: Turtle bug?

Posted by [Neal Bridges](#) on May 23, 1999 at 21:10:28:

In Reply to: [Turtle bug?](#) posted by Mike Kass on May 23, 1999 at 18:19:28:

> The library Turtle "goto" word adds 80 to the x and y coordinates to make the center of the screen 0,0. The "drawto" word doesn't do this. Is this a bug or a feature?

I'd guess it's a bug. *turtle.txt* is just a quick sketch designed to illustrate some basic concepts -- feel free to modify it as suits you best.

> Great product, BTW. I'm new to Forth, and this forum is an excellent source of information. Keep up the great work!

Thanks!

Neal

DaVinci?

Posted by [Erwin Schomburg](#) on May 23, 1999 at 12:01:10:

The DaVinci SDK and Emulator (including ROM image!) are available. Guess what it says at the beginning of the SDK docs?

"The following people were instrumental in putting together this SDK.

Neal Bridges"

Hmmmm.

/Erwin

- [DaVinci SDK is here.](#)

Re: DaVinci?

Posted by [Neal Bridges](#) on May 23, 1999 at 14:28:28:

In Reply to: [DaVinci?](#) posted by Erwin Schomburg on May 23, 1999 at 12:01:10:

> The DaVinci SDK and Emulator (including ROM image!) are available. Guess what

> it says at the beginning of the SDK docs?

> "The following people were instrumental in putting together this SDK.

> Neal Bridges"

> Hmmmm.

Hi Erwin. My input to that SDK was peripheral at best; I suggested my name be removed from the credits, but the company felt that my input had been instrumental, and wished to leave the credit in place; I acquiesced.

By alphabetical chance, my name appears first in the list.

Do you own a daVinci?

Neal

Re: DaVinci?

Posted by Erwin on May 24, 1999 at 00:35:55:

In Reply to: [Re: DaVinci?](#) posted by Neal Bridges on May 23, 1999 at 14:28:28:

> > The DaVinci SDK and Emulator (including ROM image!) are available. Guess what

> > it says at the beginning of the SDK docs?

> > "The following people were instrumental in putting together this SDK.

> > Neal Bridges"

> > Hmmm.

> Hi Erwin. My input to that SDK was peripheral at best; I suggested my name be

> removed from the credits, but the company felt that my input had been instrumental, and wished to leave the credit in place; I acquiesced.

> By alphabetical chance, my name appears first in the list.

> Do you own a daVinci?

> Neal

No I don't own one, but I've been pointed to the SDK, and there are some interesting pricing rumors over here regarding the Pro version. Looks like it could use a decent app or two, so with the upcoming Quartus/DaVinci.....

/Erwin

Re: DaVinci?

Posted by [Neal Bridges](#) on May 24, 1999 at 01:01:13:

In Reply to: [Re: DaVinci?](#) posted by Erwin on May 24, 1999 at 00:35:55:

> No I don't own one, but I've been pointed to the SDK, and there are some interesting pricing rumors over here regarding the Pro version. Looks like it

> could use a decent app or two, so with the upcoming Quartus/DaVinci.....

The initial daVinci Forth release won't create stand-alone apps, as the desktop

daVinci software doesn't support file transfer in the PDA->Desktop direction.

The whole daVinci platform is still in its infancy, and they're struggling to get their heads around what's required to succeed in the market.

Neal

Re: DaVinci?

Posted by Erwin on May 24, 1999 at 05:57:15:

In Reply to: [Re: DaVinci?](#) posted by Neal Bridges on May 24, 1999 at 01:01:13:

> The whole daVinci platform is still in its infancy, and they're struggling to

> get their heads around what's required to succeed in the market.

> Neal

I am aware of the infant status of the whole thing, but its interesting to see the potential.

If you can't upload I assume you can't make a full backup, so if sticking to this status the thing is dead for power users before it even hits the roads. Since the Olivetti/Royal people seem to be of the listening kind, lets wait and see.

/Erwin

Re: DaVinci?

Posted by Erwin on May 24, 1999 at 09:55:22:

In Reply to: [Re: DaVinci?](#) posted by Erwin on May 24, 1999 at 05:57:15:

>

> > The whole daVinci platform is still in its infancy, and they're struggling to

> >

> > get their heads around what's required to succeed in the market.

> > Neal

> I am aware of the infant status of the whole thing, but its interesting to see the potential.

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> this status the thing is dead for power users before it even hits the roads.

> Since the Olivetti/Royal people seem to be of the listening kind, lets wait and

> see.

> /Erwin

BTW: Have you ever considered a dual target crosscompiler running on Palm?
Would that be possible/feasible?

/Erwin

Re: DaVinci?

Posted by [Neal Bridges](#) on May 24, 1999 at 12:40:36:

In Reply to: [Re: DaVinci?](#) posted by Erwin on May 24, 1999 at 09:55:22:

> BTW: Have you ever considered a dual target crosscompiler running on Palm?
> Would that be possible/feasible?

It would be impractical -- the ROM functions of the daVinci only overlap about 10% of the Palm ROM functions, and the daVinci parameter-passing interface dictates a 32-bit cell-size, whereas the Palm's interface requires the finer granularity a 16-bit cell-width provides. I think it's probably best to wait for Royal to repair the PIM, as you say.

Neal

Re: DaVinci?

Posted by [Mike Will](#) on May 24, 1999 at 19:22:58:

In Reply to: [Re: DaVinci?](#) posted by Neal Bridges on May 24, 1999 at 12:40:36:

Has anyone seen the 2Meg unit anywhere (Canada or US) yet? It seems to me that doing development in a 256k space would be difficult. (even with daVinci Forth :)

Mike

Re: DaVinci?

Posted by [Neal Bridges](#) on May 24, 1999 at 23:38:15:

In Reply to: [Re: DaVinci?](#) posted by Mike Will on May 24, 1999 at 19:22:58:

> Has anyone seen the 2Meg unit anywhere (Canada or US) yet? It seems to me that
> doing development in a 256k space would be difficult.
> (even with daVinci Forth :)

Not difficult, but certainly you'd run out of space by and by.

Neal

Re: DaVinci?

Posted by [Kashif Shah](#) on June 10, 1999 at 13:49:52:

In Reply to: [Re: DaVinci?](#) posted by Neal Bridges on May 24, 1999 at 23:38:15:

> > Has anyone seen the 2Meg unit anywhere (Canada or US) yet? It seems to me that
> > doing development in a 256k space would be difficult.
> > (even with daVinci Forth :)

> Not difficult, but certainly you'd run out of space by and by.

> Neal

The 2mb unit is in circuit city for sure, I dont know of other stores, but I havent looked either :) You can also order it from davinciworld.com

new posting of Quartus software

Posted by [E. Ross Helton](#) on May 21, 1999 at 15:24:23:

Hi;

Just letting you know that I have posted a new software package done in Quartus.

It is on the PilotGearHG and Websoft pages as well as on my own site.

The software is called 'RConvert' It is a simple conversion for temperature and speed.

You will also find my other software called 'Rtrek' which is a space game

Thanks. Any comments are appreciated.

Make it a good day!

Ross

- [RConvert and Rtrek](#)

Re: new posting of Quartus software

Posted by [E. Ross Helton](#) on May 21, 1999 at 15:26:54:

In Reply to: [new posting of Quartus software](#) posted by E. Ross Helton on May 21, 1999 at 15:24:23:

> Hi;

> Just letting you know that I have posted a new software package done in Quartus.

> It is on the PilotGearHG and Websoft pages as well as on my own site.

> The software is called 'RConvert' It is a simple conversion for temperature and speed.

> You will also find my other software called 'Rtrek' which is a space game

> Thanks. Any comments are appreciated.

> Make it a good day!

> Ross

- [RConvert and Rtrek](#)

Re: new posting of Quartus software

Posted by [Barry Marks](#) on May 21, 1999 at 18:56:40:

In Reply to: [Re: new posting of Quartus software](#) posted by E. Ross Helton on May 21, 1999 at 15:26:54:

The links on your site to to your games don't seem to work.

Barry

Re: new posting of Quartus software

Posted by [E. Ross Helton](#) on May 21, 1999 at 23:22:39:

In Reply to: [Re: new posting of Quartus software](#) posted by Barry Marks on May 21, 1999 at 18:56:40:

Hi Barry;

Try the one below and then go down the page and choose the Pilot software line..

- [Rconvert and Rtrek](#)
-

Re: new posting of Quartus software

Posted by [Barry Marks](#) on May 22, 1999 at 14:18:01:

In Reply to: [Re: new posting of Quartus software](#) posted by E. Ross Helton on May 21, 1999 at 23:22:39:

> Hi Barry;

> Try the one below and then go down the page and choose the Pilot software line..

Thanks. That time they worked. I'll give them a try.

Barry

Re: new posting of Quartus software

Posted by [Erwin Schomburg](#) on May 22, 1999 at 07:44:18:

In Reply to: [Re: new posting of Quartus software](#) posted by E. Ross Helton on May 21, 1999 at 23:22:39:

> Hi Barry;

> Try the one below and then go down the page and choose the Pilot software line..

Do I see re-usage of Eisbär sources in RTrek or am I dreaming this up? 8-)
If so, glad to see the exercise served its purpose.

/Erwin

Re: new posting of Quartus software

Posted by [E. Ross Helton](#) on May 22, 1999 at 21:23:15:

In Reply to: [Re: new posting of Quartus software](#) posted by Erwin Schomburg on May 22, 1999 at 07:44:18:

Hi Erwin;

> Do I see re-usage of Eisbär sources in RTrek or am I dreaming this up? 8-)
> If so, glad to see the exercise served its purpose.

I did look at an try to use a module that was in Eisbar. It gave me some ideas for a repeating part of the game.

The just of the program is built on a program that I worked with when I was doing some programming with Apple basic and early PC basic. The program was called something like "Miner's Dilemma" That one was based on having dynamit sticks which were being lit in amounts of 1 to 3. Of course the last one blew up.

What prompted me to think of it was a program called 'Sticks' which I saw in some Forth examples.

I do thank you for having the code to look at. If you would like to see the code for Rtrek email and let me know.

GPS NMEA sentence parser in Forth?

Posted by [Eugene Leitl](#) on May 20, 1999 at 21:25:41:

I know I'm a Bad Person for asking this, but is anybody aware of a NMEA sentence parser written in Forth? AltaVista is mute on this. I've got a Garmin OEM GPS board I'd like to put to some use. It is probably even more insane to ask about map plotting words I guess...

TIA,

Eugene Leitl

P.S. Running Quartus on xcopilot under Linux is kinda cute. Any ideas how much used Pilots are worth these times?

Re: GPS NMEA sentence parser in Forth?

Posted by [Bob Cunningham](#) on June 04, 1999 at 17:01:34:

In Reply to: [GPS NMEA sentence parser in Forth?](#) posted by Eugene Leitl on May 20, 1999 at 21:25:41:

> I know I'm a Bad Person for asking this, but is anybody aware of a NMEA sentence parser written in Forth? AltaVista is mute on this. I've got a Garmin OEM GPS board I'd like to put to some use. It is probably even more insane to ask about map plotting words I guess...

Oh! Oh! Oh! I need this too!

I did find some NMEA sentence parsing source code, and some Garmin as well, but it is embedded in the midst of six year old MS-DOS code that was written in thoroughly obfuscated C. I'm not nearly masochistic enough to want to even try to translate that into my own NooBee Forth dialect.

There are also a few Palm programs that speak NMEA and Garmin, but I haven't found any sources for them, and haven't yet bothered to nag the authors.

-BobC

Re: GPS NMEA sentence parser in Forth?

Posted by [Carl Jacobsen](#) on June 08, 1999 at 12:38:14:

In Reply to: [Re: GPS NMEA sentence parser in Forth?](#) posted by Bob Cunningham on June 04, 1999 at 17:01:34:

> I did find some NMEA sentence parsing source code, and some Garmin as well,
> but it is embedded in the midst of six year old MS-DOS code that was
written
> in thoroughly obfuscated C. ...

>
> There are also a few Palm programs that speak NMEA and Garmin, but I
haven't
> found any sources for them, and haven't yet bothered to nag the authors.

Actually, I just noticed the other day that the "Sample Serial Application"
on pages 259-268 in the Serial chapter of O'Reilly's Palm Programming book
is called "GPS Reader", and they show it hooked up to a "Garmin 12 GPS".

I won't try to characterize how sophisticated their code is, as I know little
about GPS interfacing, but it's C source code, for the PalmPilot, and they
give some explanation and a few references...

-- Carl

Re: GPS NMEA sentence parser in Forth?

Posted by [Carl Jacobsen](#) on May 20, 1999 at 22:01:30:

In Reply to: [GPS NMEA sentence parser in Forth?](#) posted by Eugene Leitl on May 20, 1999 at 21:25:41:

> I know I'm a Bad Person for asking this,

Nah, ask away, we like questions here...

> ... but is anybody aware of a NMEA sentence
> parser written in Forth? AltaVista is mute on this.

Don't know of one offhand, but you might wander through www.forth.org;
they've got archives of a lot of publically available Forth code.

[Actually, this ought to be sorta home ground for Forth; didn't it

start out in the astronomy field?]

> I've got a Garmin OEM GPS
> board I'd like to put to some use. It is probably even more insane to ask
> about map plotting words I guess...

Interfacing GPS's with Pilots is a well-travelled path (though not by me);
if you type "gps" into the search engine at www.pilotgear.com, you'll see
lots of software -- though perhaps you have something special in mind? I'm
certainly not going to try to talk you out of writing code :-)

> P.S. Running Quartus on xcopilot under Linux is kinda cute. Any ideas how
much
> used Pilots are worth these times?

Dunno 'bout used ones, but www.shopper.com (sort of a clearinghouse for
hardware prices) shows new PalmPilot Pros going for US\$120 and new Palm
III's for US\$175...

-- Carl

Re: GPS NMEA sentence parser in Forth?

Posted by [Neal Bridges](#) on May 20, 1999 at 21:47:57:

In Reply to: [GPS NMEA sentence parser in Forth?](#) posted by Eugene Leidl on May
20, 1999 at 21:25:41:

>
> I know I'm a Bad Person for asking this, but is anybody aware of a NMEA
sentence
> parser written in Forth? AltaVista is mute on this. I've got a Garmin OEM
GPS
> board I'd like to put to some use. It is probably even more insane to ask
about
> map plotting words I guess...

I suggest you ask this on [comp.lang.forth](#) -- if anybody's written such a
thing,
somebody there will know.

> P.S. Running Quartus on xcopilot under Linux is kinda cute. Any ideas how
much
> used Pilots are worth these times?

Depends on the model. They're often up for sale on [comp.sys.palmtops.pilot](#),
or
Ebay.

Neal

Me Too: New Quartus Forth Application

Posted by [Erwin Schomburg](#) on May 20, 1999 at 03:56:47:

I have written Quintominoes, an adaptation of the Pentomino puzzle. Its presently a fairly stable beta, Neal is presently looking at it if its worth to find a place in the Quartus file area. Read about Pentominoes at http://www.schoolnet.ca/vp-pv/ECOS/e_pentI.htm {Hi Neal: Canadian Schoolnet 8-)}

I am open for suggestions for the user interface.

Warning, its either immediate dislike or slowly growing total addiction.

/Erwin

- [Get Quint](#)

Re: Me Too: New Quartus Forth Application

Posted by [Barry Marks](#) on May 20, 1999 at 13:34:56:

In Reply to: [Me Too: New Quartus Forth Application](#) posted by Erwin Schomburg on May 20, 1999 at 03:56:47:

I downloaded this to take a look but when I tried to copy the source to my Palm, it wouldn't let me. Then I realized the file is 9k long and the memopad limit is 4k. How do you get around this?

Barry

Re: Me Too: New Quartus Forth Application

Posted by [Steve Gibson](#) on May 20, 1999 at 14:53:11:

In Reply to: [Re: Me Too: New Quartus Forth Application](#) posted by Barry Marks on May 20, 1999 at 13:34:56:

> I downloaded this to take a look but when I tried to copy the source to my
> Palm, it wouldn't let me. Then I realized the file is 9k long and the

memopad

> limit is 4k. How do you get around this?

He may be using a Doc editor/reader. I personally use SmartDoc for all of my Quartus programming and have 'include docinc' in my startup.quartus file.

It's

awesome -- allows cut n paste of much larger blocks, imports memos from memopad

for append, and a nice find/replace function that is very handy. Plus I keep the ANS Standard and the Quartus Systraps Doc files in it for reference (if only

I could get the SDK in Doc format...).

-Steve

Re: Me Too: New Quartus Forth Application

Posted by [Barry Marks](#) on May 20, 1999 at 16:16:26:

In Reply to: [Re: Me Too: New Quartus Forth Application](#) posted by Steve Gibson on May 20, 1999 at 14:53:11:

I have both TealDoc and SmartDoc installed. I had no idea Quartus would read them for source files. I thought it only read the memopad files. This is very good news. Thanks.

Does docinc add the functionality that lets it read SmartDoc? Will it still read the memopad text?

Barry

> > I downloaded this to take a look but when I tried to copy the source to my

> > Palm, it wouldn't let me. Then I realized the file is 9k long and the memopad

> > limit is 4k. How do you get around this?

> He may be using a Doc editor/reader. I personally use SmartDoc for all of my

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> for append, and a nice find/replace function that is very handy. Plus I keep

> the ANS Standard and the Quartus Systraps Doc files in it for reference (if

only

> I could get the SDK in Doc format...).

> -Steve

Re: Me Too: New Quartus Forth Application

Posted by [Steve Gibson](#) on May 20, 1999 at 17:22:54:

In Reply to: [Re: Me Too: New Quartus Forth Application](#) posted by Barry Marks on May 20, 1999 at 16:16:26:

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> them for source files. I thought it only read the memopad files. This is very
> good news. Thanks.

> Does docinc add the functionality that lets it read SmartDoc? Will it still
> read the memopad text?

Yes. After you have done 'include docinc', you can then include doc files by using:

```
docinclude mydoc
```

And including memos still works as usual:

```
include mymemo
```

Since 'docinclude ' is a lot of typing, I made a graffiti shortcut (di) that makes it much easier than writing the whole thing.

The only disadvantage of using doc files is, when you get an error message in Quartus, the /E command won't take you to the error in the doc file. But I think the advantages far outweigh this inconvenience.

-Steve

Re: Me Too: New Quartus Forth Application

Posted by Erwin on May 20, 1999 at 14:52:36:

In Reply to: [Re: Me Too: New Quartus Forth Application](#) posted by Barry Marks on May 20, 1999 at 13:34:56:

> I downloaded this to take a look but when I tried to copy the source to my
> Palm, it wouldn't let me. Then I realized the file is 9k long and the
memopad
> limit is 4k. How do you get around this?

> Barry

The source is the .pdb file in doc format. The .txt file is for you to read
it
on the desktop, so you wouldn't necessarily need a DocReader on your Palm
machine. It compiles or runs in the Quartus environment using the supplied
scripts, which are to go into memopad and expect the Quartus library modules
also to be present as memos. No matter if you want to compile it or run it in
the environment, you also need to install Quintominoes.prc, however, if you
just
want to play it the only file needed to install is Quint.prc

/Erwin

Re: Me Too: New Quartus Forth Application

Posted by [Barry Marks](#) on May 20, 1999 at 16:20:30:

In Reply to: [Re: Me Too: New Quartus Forth Application](#) posted by Erwin on May 20, 1999 at 14:52:36:

> The source is the .pdb file in doc format. The .txt file is for you to read
it
> on the desktop, so you wouldn't necessarily need a DocReader on your Palm
> machine. It compiles or runs in the Quartus environment using the supplied
> scripts, which are to go into memopad and expect the Quartus library
modules
> also to be present as memos. No matter if you want to compile it or run it
in
> the environment, you also need to install Quintominoes.prc, however, if you
just
> want to play it the only file needed to install is Quint.prc

I'm a little confused about the prc's. Is Quint.prc the executable and
Quintominoes.prc the resource file?

I might want to run it and play with it but I'm very interested in seeing how it was made. Thanks for posting it.

Barry

Re: Me Too: New Quartus Forth Application

Posted by Erwin on May 21, 1999 at 00:13:22:

In Reply to: [Re: Me Too: New Quartus Forth Application](#) posted by Barry Marks on May 20, 1999 at 16:20:30:

> > The source is the .pdb file in doc format. The .txt file is for you to read
> it
> > on the desktop, so you wouldn't necessarily need a DocReader on your Palm
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> I'm a little confused about the prc's. Is Quint.prc the executable and
> Quintominoes.prc the resource file?
> I might want to run it and play with it but I'm very interested in seeing how
> it was made. Thanks for posting it.
> Barry

Nobody reads readmes (THE.txt) these days anymore? Yes, Quint is the executeable
and Quitominoes holds the resources for compilation.

/Erwin

Re: Me Too: New Quartus Forth Application

Posted by [Barry Marks](#) on May 21, 1999 at 13:49:24:

In Reply to: [Re: Me Too: New Quartus Forth Application](#) posted by Erwin on May 21, 1999 at 00:13:22:

> Nobody reads readmes (THE.txt) these days anymore? Yes, Quint is the executeable

> and Quitominoes holds the resources for compilation.

> /Erwin

I did read the readme. I didn't understand it. But then I didn't go back and re-read it when I found myself confused about the source.

Thanks for explaining.

Barry

debug ROM?

Posted by [Eugene Leitl](#) on May 19, 1999 at 23:18:53:

Hi,

I'm very excited about Quartus, but I don't own a Pilot yet (unfortunately, there is no Forth for the Newton). USR has a ridiculous policy re distribution of their debug ROM images, so I've tried to find a bootleg image on the Net, unfortunately without success?

Any warez earls? ;)

TIA,

Eugene

P.S. Please Cc: me under eugene.leitl@lrz.de as well.

Re: debug ROM?

Posted by [Neal Bridges](#) on May 19, 1999 at 23:47:13:

In Reply to: [debug ROM?](#) posted by Eugene Leitl on May 19, 1999 at 23:18:53:

> I'm very excited about Quartus, but I don't own a Pilot yet (unfortunately,
> there is no Forth for the Newton). USSR has a ridiculous policy re
distribution
> of their debug ROM images, so I've tried to find a bootleg image on the
Net,
> unfortunately without success?

> Any warez earls? ;)

Glad you like Quartus Forth. :)

Palm's ROM distribution policy is not particularly ridiculous - just takes a
stamp, an envelope, and a couple of sheets of paper.

Neal

Re: debug ROM?

Posted by [Eugene Leitl](#) on May 20, 1999 at 19:37:47:

In Reply to: [Re: debug ROM?](#) posted by Neal Bridges on May 19, 1999 at
23:47:13:

> > [Eugene looking for bootleg Debug ROM image for xcopilot]
> Glad you like Quartus Forth. :)

Thanks, but I haven't made it to run yet. I liked Forth fine enough on my
Amiga,
though.

> Palm's ROM distribution policy is not particularly ridiculous - just takes
a
> stamp, an envelope, and a couple of sheets of paper.

Not even that, as I discovered. I searched for 'debug ROM' and found a site
pointing to this: <http://palmpilot.3com.com/devzone/rom2/debugrom2.html>

After filling out a short form & downloading the debug ROM image for Windoze,
and unzipping it, I copied rom_debu.1mb to ~/.xcopilot/pilot.rom , which did
the trick. I'm using xcopilot-0.6.6-linux-i386 , btw.

Now let's try getting xcopilot to load Quartus...

> Neal

dbID in SysAppLaunch

Posted by [Dennis Misener](#) on May 19, 1999 at 21:19:25:

I'm looking for sample code showing how to interface Quartus with external C based code (Symbol Technologies Barcode Scanner API to be specific).

I can build a resident library PRC and process requests through a dispatch table based on the incoming launch code parameters. This is how the CASL people have done their interface.

I should be able to invoke such a routine from QUARTUS by using SysAppLaunch. The Quartus/3COM docs document this call as requiring a LocalID dbID. What is this and how do I get one (3COM API docs indicate the offset from the start of the card??). Is this the result of a "DmFindDatabase"?

Any assistance would be appreciated.

Re: dbID in SysAppLaunch

Posted by [Neal Bridges](#) on May 19, 1999 at 22:00:55:

In Reply to: [dbID in SysAppLaunch](#) posted by Dennis Misener on May 19, 1999 at 21:19:25:

> I'm looking for sample code showing how to interface
> Quartus with external C based code (Symbol Technologies
> Barcode Scanner API to be specific).

> I can build a resident library PRC and process requests through
> a dispatch table based on the incoming launch code parameters.
> This is how the CASL people have done their interface.

> I should be able to invoke such a routine from QUARTUS
> by using SysAppLaunch. The Quartus/3COM docs
> document this call as requiring a LocalID dbID. What is this
> and how do I get one (3COM API docs indicate the offset from the
> start of the card??). Is this the result of a "DmFindDatabase"?

> Any assistance would be appreciated.

You can get the dbID. of a database using DmFindDatabase.

```
needs zstrings
```

```
: dbname z" SomeDatabase" ;
```

```
dbname drop >abs 0 DmFindDatabase .s
```

Neal

Re: New Quartus app (with source code): PhoneDecode

Posted by [E. Ross Helton](#) on May 19, 1999 at 09:54:47:

In Reply to: [New Quartus app \(with source code\): PhoneDecode](#) posted by Carl Jacobsen on May 18, 1999 at 16:43:06:

Hi Carl;

I liked your program. Although I don't call it trivial. It's too good for that! There are lots of phone numbers that are coded with 'Names' and many times the phone pads don't have all the letters on the keys. This makes it hard to figure out the actual number you're dialing.

It is a good looking program. Thanks

Make it a good day!

Ross

Re: Socket programming in QForth

Posted by [Neal Bridges](#) on May 18, 1999 at 19:37:34:

In Reply to: [Re: Socket programming in QForth](#) posted by Philippe de Rochambeau on May 18, 1999 at 17:29:24:

```
> I have started translating W. Richard Stevens's "simple daytime client  
example"  
> which appears on p. 6 of his "Unix Network Programming" book, into  
PalmPilot  
C,  
> but have not gotten very far since I am not a C programmer. Would anyone
```

care
to
> join me in porting this "simple" client program to QForth?
> Here is the original code and an attempted translation:
[code snipped]

Philippe, I recommend you start from an existing Palm TCP/IP app, say ping.c or similar. That way you won't be facing the dual challenge of translating from C, and simultaneously translating from an entirely different network library.
Neal

New RsrcEdit

Posted by [Erwin Schomburg](#) on May 17, 1999 at 05:07:34:

New RsrcEdit v.0.9991 beta at Individeo website. Apparently the groupnumber byte vs integer bug is fixed.

/Erwin

- [RsrcEdit at Individeo.Net](#)

Quartus Forth in Sams "Teach Yourself Palm Programming in 24 hours"

Posted by [Neal Bridges](#) on May 16, 1999 at 22:28:46:

Quartus Forth made its way onto the CD, if not into the actual text, of this book -- thought I'd mention it. I've only just received a copy of the book, and haven't yet had an in-depth look at its value for beginning Palm developers.
Neal

Event handling problems

Posted by [Garry](#) on May 16, 1999 at 20:05:36:

Thanks to all who responded to my last query, here's another though:
I create an event with ekey, store the ID it makes in a variable, then compare the variable to constants to see what's happened, problem is repeated pressing of buttons and other events leads to a full blown crash, although for a time, it all works swimmingly. After diagnosis, pen presses can cause a crash even with the word which looks for buttons disabled, but not the one that looks for penevents. Flushqueue is used with no change. Any ideas? Is storing the event a problem with memory being claimed but not released? An occasional error message on crashing refers to MemoryMgr.c

Thanks if you can help, it's getting to be a little annoying now!

Garry

Re: Event handling problems

Posted by [Neal Bridges](#) on May 16, 1999 at 20:51:38:

In Reply to: [Event handling problems](#) posted by Garry on May 16, 1999 at 20:05:36:

> Thanks to all who responded to my last query, here's another though:
> I create an event with ekey, store the ID it makes in a variable, then compare the variable to constants to see what's happened, problem is repeated pressing of buttons and other events leads to a full blown crash, although for a time, it all works swimmingly. After diagnosis, pen presses can cause a crash even with the word which looks for buttons disabled, but not the one that looks for penevents. Flushqueue is used with no change. Any ideas? Is storing the event a problem with memory being claimed but not released? An occasional error message on crashing refers to MemoryMgr.c

> Thanks if you can help, it's getting to be a little annoying now!

As with many such code-related problems, it'd be much easier to diagnose if you could post or mail me a snippet -- I suspect you're either underflowing or overflowing the stack, and I'll be able to spot what's happening if you can give

me a code snippet whittled down to just the code that produces the problem.

Neal

Re: Event handling problems

Posted by [Erwin Schomburg](#) on May 17, 1999 at 01:49:07:

In Reply to: [Re: Event handling problems](#) posted by Neal Bridges on May 16, 1999 at 20:51:38:

> > Thanks to all who responded to my last query, here's another though:
> > I create an event with ekey, store the ID it makes in a variable, then
compare
> the variable to constants to see what's happened, problem is repeated
pressing
> of buttons and other events leads to a full blown crash, although for a
time,
it
> all works swimmingly. After diagnosis, pen presses can cause a crash even
with
> the word which looks for buttons disabled, but not the one that looks for
> penevents. Flushqueue is used with no change. Any ideas? Is storing the
event
a
> problem with memory being claimed but not released? An occasional error
message
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> could post or mail me a snippet -- I suspect you're either underflowing or
> overflowing the stack, and I'll be able to spot what's happening if you can
give
> me a code snippet whittled down to just the code that produces the problem.
> Neal

I experienced that rapidly repeating events like Hard Button presses and
leaving
your finger on the button, seem to perform some re-entrant actions that
every now and then clutter and ultimately overflow the Quartus stack. That
is,
stack gets filled with values that can not logically be there and definitely
have values indicating event related context. My interim solution is to find
a

position in code at the beginning of event handling where I know the expected stack depth and just remove everything that is redundant from under the current event code on stack.

Please someone tell me if this a kludge or a veritable workaround?

/Erwin

Re: Event handling problems

Posted by [Neal Bridges](#) on May 17, 1999 at 09:23:40:

In Reply to: [Re: Event handling problems](#) posted by Erwin Schomburg on May 17, 1999 at 01:49:07:

> I experienced that rapidly repeating events like Hard Button presses and leaving your finger on the button, seem to perform some re-entrant actions that every now and then clutter and ultimately overflow the Quartus stack. That is, stack gets filled with values that can not logically be there and definitely have values indicating event related context. My interim solution is to find a position in code at the beginning of event handling where I know the expected stack depth and just remove everything that is redundant from under the current event code on stack.

> Please someone tell me if this a kludge or a veritable workaround?

That's a kludge, and not something that should be occurring. I'd very much like to see a code snippet that exhibits that behaviour, so I can track it down. Event generation does not place values on the Quartus Forth stack -- unless you call EKEY. Even then, each call to EKEY can at most place one event (one cell) on the stack. The only way they'd build up is if for some reason the application's logic isn't handling them.

Neal

snippet for displaying bitmaps

Posted by [Wayne Carson](#) on May 14, 1999 at 01:31:16:

Neal,

I couldn't find a Quartus example so I updated your Pilot Forth icon example to display the Quartus icon and bitmap. Is this the best way?

Wayne

```
\ icon&bitmap 99.5.13 12:30 am

: DefType ( "name type" --)
create parse-word here swap move
4 chars allot
does> ( -- dtype)
dup cell+ @ swap @ ;

: DrawBitmapResource
( y x id dtype --)
DmGetResource 2dup >r >r
MemHandleLock WinDrawBitmap
r> r> 2dup MemHandleUnlock
DmReleaseResource ;

\ Draw the Quartus icon:
DefType tAIB tAIB
30 64 1000 tAIB DrawBitmapResource

\ Draw the Quartus header:
DefType Tbmp Tbmp
50 5 1005 Tbmp DrawBitmapResource
```

Re: snippet for displaying bitmaps

Posted by [Ron Doerfler](#) on May 14, 1999 at 12:59:16:

In Reply to: [snippet for displaying bitmaps](#) posted by Wayne Carson on May 14, 1999 at 01:31:16:

Hi Wayne,

```
> : DrawBitmapResource
> ( y x id dtype --)
> DmGetResource 2dup >r >r
> MemHandleLock WinDrawBitmap
> r> r> 2dup MemHandleUnlock
```

> DmReleaseResource ;

You need to add a drop after MemHandleUnlock and a drop after DmReleaseResource, as each return an error or success word.

Ron

Re: snippet for displaying bitmaps

Posted by [Neal Bridges](#) on May 14, 1999 at 13:04:03:

In Reply to: [Re: snippet for displaying bitmaps](#) posted by Ron Doerfler on May 14, 1999 at 12:59:16:

> Hi Wayne,

```
> > : DrawBitmapResource
> > ( y x id dtype --)
> > DmGetResource 2dup >r >r
> > MemHandleLock WinDrawBitmap
> > r> r> 2dup MemHandleUnlock
> > DmReleaseResource ;
```

> You need to add a drop after MemHandleUnlock and a drop after DmReleaseResource, as each return an error or success word.

Thanks Ron -- I missed that when I looked it over. I prefer to THROW the returned value from MemHandleUnlock and DmReleaseResource.

Neal

Re: snippet for displaying bitmaps

Posted by [Neal Bridges](#) on May 14, 1999 at 03:06:15:

In Reply to: [snippet for displaying bitmaps](#) posted by Wayne Carson on May 14, 1999 at 01:31:16:

> I couldn't find a Quartus example so I updated your Pilot Forth icon example

to

> display the Quartus icon and bitmap. Is this the best way?

[code snipped]

'DefType' has been entirely replaced by *ids.txt*. Otherwise, the technique and sequence of Palm OS calls is correct -- DmGetResource, MemHandleLock, WinDrawBitmap, MemHandleUnlock, DmReleaseResource.

Neal

Quartus Discussion Forum threads started before May 14, 1999.

[Return to the Quartus Discussion Forum](#)

Memory problems and reading from databases

Posted by [Garry Taylor](#) on May 13, 1999 at 19:14:34:

Can anyone help with the following:

I get 'MemoryMgr.c Line:3926 Invalid Handle', and Fatal Exceptions, but it only happens when Showform is used and sometime popupform. The only thing I can think of may be to do with plotting bitmaps, using the bitmap library, do I have to free memory.

Is there an easy to read from databases, creation and writing is no problem, but reading....

Is there an easy way to change strings into zstrings and vice-versa?

How can I change numbers into strings?

Forgive my ignorance of Forth's ways, thanks in advance.

Garry

Re: Memory problems and reading from databases

Posted by [Steve Gibson](#) on May 14, 1999 at 10:55:59:

In Reply to: [Memory problems and reading from databases](#) posted by Garry Taylor on May 13, 1999 at 19:14:34:

> Can anyone help with the following:

[snip]

> Is there an easy way to change strings into zstrings and vice-versa?

Gary, here's a word that I use to easily convert a string to a zstring:

```
: string>zstring ( c-addr u -- z-addr u )
2dup + 0 swap c! ;
```

-Steve

Re: Memory problems and reading from databases

Posted by [Neal Bridges](#) on May 14, 1999 at 11:11:19:

In Reply to: [Re: Memory problems and reading from databases](#) posted by Steve Gibson on May 14, 1999 at 10:55:59:

```
> > Can anyone help with the following:
> [snip]
> > Is there an easy way to change strings into zstrings and vice-versa?
> Gary, here's a word that I use to easily convert a string to a zstring:
> : string>zstring ( c-addr u -- z-addr u )
> 2dup + 0 swap c! ;
```

Bear in mind that this usage would be bad:

```
: myword
  s" My String" string>zstring ;
```

as the string isn't long enough to hold the extra zero-byte. Make sure any string to which you add a byte has the space allocated to hold it.

Neal

Re: Memory problems and reading from databases

Posted by [Steve Gibson](#) on May 14, 1999 at 12:16:31:

In Reply to: [Re: Memory problems and reading from databases](#) posted by Neal Bridges on May 14, 1999 at 11:11:19:

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> > > Can anyone help with the following:
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>   s" My String" string>zstring ;
```

```
> as the string isn't long enough to hold the extra zero-byte. Make sure any  
> string to which you add a byte has the space allocated to hold it.
```

Wow, good point. I assume the danger is that you might run into address space allocated to the next word? Would the same hold true for the following?:

```
radius f@ (f.) string>zstring
```

I'm not sure how address space gets allocated/deallocated on the fly. SO far I haven't had any problems with the above...but perhaps this is blind luck.

-Steve

Re: Memory problems and reading from databases

Posted by [Neal Bridges](#) on May 14, 1999 at 12:31:14:

In Reply to: [Re: Memory problems and reading from databases](#) posted by Steve Gibson on May 14, 1999 at 12:16:31:

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> allocated to the next word? Would the same hold true for the following?:  
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> I'm not sure how address space gets allocated/deallocated on the fly. SO far  
> I  
> haven't had any problems with the above...but perhaps this is blind luck.  
I just checked the kernel code. If you have 8 floats on the floating-point  
stack, and you store a zero-byte beyond a formatted string as you're doing,  
you'll corrupt the eighth float value. That'd be a fun bug to find :)  
I'll add a padding byte to the end of the pictured numeric output buffer to
```

facilitate what you're doing -- in fact I'll hard-code it as a zero so that formatted numbers are automatically zero-delimited.

Neal

Re: Memory problems and reading from databases

Posted by [Steve Gibson](#) on May 14, 1999 at 13:06:33:

In Reply to: [Re: Memory problems and reading from databases](#) posted by Neal Bridges on May 14, 1999 at 12:31:14:

```
> > > > Can anyone help with the following:
> > > > [snip]
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> > > far
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> > > haven't had any problems with the above...but perhaps this is blind luck.
> > > I just checked the kernel code. If you have 8 floats on the floating-point
> > > stack, and you store a zero-byte beyond a formatted string as you're doing,
> > > you'll corrupt the eighth float value. That'd be a fun bug to find :)
```

Ugh, I would've ended up bald from all the hair-pulling if I had run into that one! (:-/

```
> I'll add a padding byte to the end of the pictured numeric output buffer to
> facilitate what you're doing -- in fact I'll hard-code it as a zero so that
```

> formatted numbers are automatically zero-delimited.

Great! Thanks! So (f.) will do (F:r --) (-- z-addr u) in the next release?

-Steve

Re: Memory problems and reading from databases

Posted by [Neal Bridges](#) on May 14, 1999 at 13:42:37:

In Reply to: [Re: Memory problems and reading from databases](#) posted by Steve Gibson on May 14, 1999 at 13:06:33:

> Great! Thanks! So (f.) will do (F:r --) (-- z-addr u) in the next release?

Yes -- any words using <# #S #> will return a string with an additional zero byte just past the end.

Neal

Re: Memory problems and reading from databases

Posted by [Neal Bridges](#) on May 13, 1999 at 20:44:24:

In Reply to: [Memory problems and reading from databases](#) posted by Garry Taylor on May 13, 1999 at 19:14:34:

> Can anyone help with the following:

> I get 'MemoryMgr.c Line:3926 Invalid Handle', and Fatal Exceptions, but it only happens when Showform is used and sometime popupform. The only thing I can think of may be to do with plotting bitmaps, using the bitmap library, do I have to free memory.

If you can provide a code-snippet whittled down far enough so as to reproduce the problem, that'd be very helpful. It's possible to run out of dynamic memory when showing a form -- it depends on how much dynamic memory you're using, and what model of Palm/Pilot you have.

You don't need to explicitly free any memory when using inline bitmaps created via the *bitmap* library. You may be simply using up all the dynamic memory with your bitmaps. How many do you have, and how large are they? If you have a large number, you'd be better served to keep them as *Tbmp* resources.

> Is there an easy to read from databases, creation and writing is no problem, but reading....

Reading is simpler than writing -- *doc.txt* provides an example and shows what Palm OS routines you need to call. Fundamentally, you **DmGetRecord** the record you want, **MemHandleLock** the provided handle, and use **@a** or **c@a** to read from the absolute address. When you're done with a record, **MemHandleUnlock** and **DmReleaseRecord**. Examples speak a thousand words -- have a look at *doc.txt* for starters.

> Is there an easy way to change strings into zstrings and vice-versa?

A zstring is a string in which the last byte is a zero.

```
create mystring 40 chars allot
```

```
: init
```

```
  s" Hello!" mystring swap move ;
```

```
init \ mystring is now "Hello!"
```

```
0 mystring 6 chars + c! \ mystring is now a zero-delimited string
```

```
mystring >abs StrLen . \ this will display '6 ok'
```

> How can I change numbers into strings?

To produce strings from numbers, use the pictured numeric output words. For example:

```
: u>string ( u -- c-addr len )
```

```
  0 <# #S #> ;
```

```
35 u>string type cr \ displays '35 ok'
```

> Forgive my ignorance of Forth's ways, thanks in advance.

Anytime!

Neal

Quartus Forth interactive chat on AOL, May 25th

Posted by [Neal Bridges](#) on May 12, 1999 at 23:18:42:

AOL members, I hope you'll join me for the PDA Forum's Palm chat on Tuesday, May 25, at 9:30 ET. We'll be talking about Quartus Forth, of course. If you don't have your own AOL account, perhaps you can borrow a friend's for the evening.

Once you've signed on, use keyword: PDA, which will take you to the Personal Digital Assistants Forum. The fourth button on the right side of the screen will place you to the conference room area.

If you have any questions, send a note to the forum leader, Susan Gustafson pdasusan@aol.com. If you are online but lost, send an Instant Message to PDA

Susan. She'll toss you a link.

I look forward to answering your questions and learning more about how you are using Quartus Forth.

Neal

Re: Quartus Forth interactive chat on AOL, May 25th

Posted by [Barry Marks](#) on May 13, 1999 at 11:09:02:

In Reply to: [Quartus Forth interactive chat on AOL, May 25th](#) posted by Neal Bridges on May 12, 1999 at 23:18:42:

Thanks for the invitation. I'm looking forward to it.

Will the topic be Forth and Pilot development or will it be more general?

Barry

Re: Quartus Forth interactive chat on AOL, May 25th

Posted by [Neal Bridges](#) on May 13, 1999 at 11:17:28:

In Reply to: [Re: Quartus Forth interactive chat on AOL, May 25th](#) posted by Barry Marks on May 13, 1999 at 11:09:02:

> Thanks for the invitation. I'm looking forward to it.

> Will the topic be Forth and Pilot development or will it be more general?

Forth and Pilot development. I'll try and handle any other questions that arise, but certainly it would of greater use to deal with questions specific to Quartus Forth.

Neal

Re: Quartus Forth interactive chat on AOL, May 25th

Posted by [Mark Beckman](#) on May 13, 1999 at 12:02:57:

In Reply to: [Re: Quartus Forth interactive chat on AOL, May 25th](#) posted by Neal Bridges on May 13, 1999 at 11:17:28:

As much as I would like to "attend" I have no way to access an AOL chat. Would it be possible for someone to post a log of the evening ?

> > Thanks for the invitation. I'm looking forward to it.

> > Will the topic be Forth and Pilot development or will it be more general?

> Forth and Pilot development. I'll try and handle any other questions that
> arise, but certainly it would of greater use to deal with questions specific
> to
> Quartus Forth.

> Neal

Re: Quartus Forth interactive chat on AOL, May 25th

Posted by [E. Ross Helton](#) on May 13, 1999 at 13:15:20:

In Reply to: [Re: Quartus Forth interactive chat on AOL, May 25th](#) posted by Mark Beckman on May 13, 1999 at 12:02:57:

HI Neal;

I add my second to Mark's request below

> As much as I would like to "attend" I have no way to access an AOL chat.
Would
> it be possible for someone to post a log of the evening ?

I also cannot attend, but would like a way to see what happened.

Make it a good day!

Ross

Re: Quartus Forth interactive chat on AOL, May 25th

Posted by [Neal Bridges](#) on May 13, 1999 at 13:21:16:

In Reply to: [Re: Quartus Forth interactive chat on AOL, May 25th](#) posted by E. Ross Helton on May 13, 1999 at 13:15:20:

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> Would

> > it be possible for someone to post a log of the evening ?

> I also cannot attend, but would like a way to see what happened.

I'll ask the moderator what's possible.

Neal

Re: Quartus Forth interactive chat on AOL, May 25th

Posted by [E. Ross Helton](#) on May 13, 1999 at 19:35:54:

In Reply to: [Re: Quartus Forth interactive chat on AOL, May 25th](#) posted by Neal Bridges on May 13, 1999 at 13:21:16:

Hi Neal;

Thanks for anything that can be done.

> I'll ask the moderator what's possible.

One other question. Did the Beginners' Quartus manual that was being started get moved to another area? It used to be with the files.

Make it a good day!

Ross

Re: Quartus Forth interactive chat on AOL, May 25th

Posted by [Neal Bridges](#) on May 13, 1999 at 20:46:15:

In Reply to: [Re: Quartus Forth interactive chat on AOL, May 25th](#) posted by E. Ross Helton on May 13, 1999 at 19:35:54:

> > I'll ask the moderator what's possible.

Good news -- Susan tells me that transcripts are made available, and that I'm welcome to post it after the fact.

> One other question. Did the Beginners' Quartus manual that was being started > get moved to another area? It used to be with the files.

tutorial.htm in the Quartus Forth File Area.

Neal

OnBoard Debugging Techniques

Posted by [Ron Doerfler](#) on May 12, 1999 at 15:41:45:

Hi everyone,

I'm curious--what sort of techniques are you using for debugging Quartus code on the PalmPilot? Since I do all of my coding on the PalmPilot on the fly, and since my app replaces the Quartus standard form with its own forms, I find myself wanting to know what's going on as the program runs, but I can't just emit a value into the Quartus form.

So far, this is what I've been doing:

1. I put a beeps into legs of code so I know if a leg is entered, at least.

2. In cases where I suspect that the stack is not being cleared sufficiently, or is left with an extra value, I insert a word I wrote that beeps once for each value on the stack every time it's encountered in the code:

```
: s? ( -- )  
2000 ms depth 0 ?do beep 1000 msec loop 2000 ms ;
```

(we're talking sophisticated stuff here...)

3. I dump the top value of the stack onto the window in some area that won't be overwritten normally. I insert this word:

```
: int>disp (u -- u)
dup 0 <# #S #> swap >R 0 130 rot R> >abs WinDrawChars ;
```

This prints the value on the upper edge at (0,130). You may wish to print it lower, as it may scroll immediately off the top if it's in a field area. Also, I don't bother to erase the previous value there, so if a 3-digit number is printed, and then a 2-digit value, the last digit of the 3-digit number is still there. As I say, this is quick and dirty. WinEraseRectangle can be used to erase the area first.

4. I am very interested in the assert set created by Neal in the file area. I would really like to see an example of it. I do have the appropriate field added to my form, I think, to abort into a Quartus field, according to a past post:

```
FIELD ID 1103 AT (0 80 160 11) LEFTALIGN SINGLELINE MAXCHARS 80 NONUSABLE
```

but I'm not sure how it works, since it overlays my main field in my form. Also, it does abort the program so you can't see how a value changes, for example, every time you press a hardkey, as you can in #4.

5. It seems quite possible to collect debug information and write it into a memo, using the memo routines by Neal or by Allen Chen (whom I'm indebted to for his memo routines). Then the memo can be read after exiting the Quartus app--or would PopUpNote allow you to read it while the app is running? I haven't thought much about this, but it seems that a debug set of words could be written for this.

6. OK, one thing about debugging on the PC. I don't know much about this. If I create a stand-alone app with the line:

```
true generate-symbols
```

typed before I include the makefile, I do get a larger PRC file out. Then I start Debuffer, load the app into POSE, and start the app. Needless to say, I hit an error at some point. I select the Debug option on the error screen and Debuffer comes up and I can, for example, use a Forth-like command such as "pc @ 10 dis" to disassemble the next 10 op-codes. But I don't see where the generated symbols come in--it still shows absolute addresses for the assembly code instructions. How do I use the symbols?

Whew! Thanks for any suggestions.

Ron Doerfler

Re: OnBoard Debugging Techniques

Posted by [Neal Bridges](#) on May 12, 1999 at 16:40:41:

In Reply to: [OnBoard Debugging Techniques](#) posted by Ron Doerfler on May 12, 1999 at 15:41:45:

> I'm curious--what sort of techniques are you using for debugging
> Quartus code on the PalmPilot? Since I do all of my coding on
> the PalmPilot on the fly, and since my app replaces the Quartus
> standard form with its own forms, I find myself wanting to know
> what's going on as the program runs, but I can't just emit a
> value into the Quartus form.

A thought -- you could use a popup form to display a number, akin to what is done in *input.txt*.

> So far, this is what I've been doing:
> 1. I put a beeps into legs of code so I know if a leg is
> entered, at least.

Good idea. With *sound.txt* you can generate differing tones.

> 2. In cases where I suspect that the stack is not being
> cleared sufficiently, or is left with an extra value, I
> insert a word I wrote that beeps once for each value on the
> stack every time it's encountered in the code:

```
> : s? ( -- )  
> 2000 ms depth 0 ?do beep 1000 msec loop 2000 ms ;
```

I do

```
0 0 at .s
```

to display the stack at the top of the screen while debugging, sometimes followed by

key drop

to wait for a Graffiti character (or up/down button press) to continue.

> (we're talking sophisticated stuff here...)

> 3. I dump the top value of the stack onto the window in
> some area that won't be overwritten normally. I insert
> this word:

```
> : int>disp (u -- u)  
> dup 0 <# #S #> swap >R 0 130 rot R> >abs WinDrawChars ;
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> This prints the value on the upper edge at (0,130). You
> may wish to print it lower, as it may scroll immediately off
> the top if it's in a field area. Also, I don't bother to
> erase the previous value there, so if a 3-digit number is
> printed, and then a 2-digit value, the last digit of the
> 3-digit number is still there. As I say, this is quick and

> dirty. WinEraseRectangle can be used to erase the area first.

That's a similar idea to my technique above. I prefer to display the entire stack.

Similarly, I'll put

```
DEPTH THROW
```

in my main loop, to ensure that the stack is empty each time through -- during debugging, this generates an exception if there's a stack underflow/overflow. Simple, but effective.

> 4. I am very interested in the assert set created by Neal
> in the file area. I would really like to see an example of
> it. I do have the appropriate field added to my form, I think,
> to abort into a Quartus field, according to a past post:

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> field in my form. Also, it does abort the program so you  
> can't see how a value changes, for example, every time you  
> press a hardkey, as you can in #4.
```

Here's an example of assert:

```
needs assert
```

```
: demo  
  assert( depth 0= )  
  ...  
;
```

'demo' will abort with an "Assertion failure!" if the stack depth is not zero.

Remember that an ABORT is the same as a -1 THROW. If you call your main routine using CATCH, you can catch ABORTs as you would any other throw code, and take appropriate action (display variable values, bring up the MainForm, etc.).

> 5. It seems quite possible to collect debug information and
> write it into a memo, using the memo routines by Neal or
> by Allen Chen (whom I'm indebted to for his memo routines). Then
> the memo can be read after exiting the Quartus app--or would
> PopUpNote allow you to read it while the app is running? I
> haven't thought much about this, but it seems that a debug
> set of words could be written for this.

It sounds like it would work, but I'd consider it major overkill for debugging. Watching the stack and displaying the contents of a couple of memory locations are all I've ever required.

> 6. OK, one thing about debugging on the PC. I don't know
> much about this. If I create a stand-alone app with the
> line:
> true generate-symbols
> typed before I include the makefile, I do get a larger
> PRC file out. Then I start Debuffer, load the app into POSE,

> and start the app. Needless to say, I hit an error at some
> point. I select the Debug option on the error screen and
> Debuffer comes up and I can, for example, use a Forth-like
> command such as "pc @ 10 dis" to disassemble the next 10
> op-codes. But I don't see where the generated symbols come
> in--it still shows absolute addresses for the assembly code
> instructions. How do I use the symbols?

Word names will show in stack back-traces (I don't remember the DeBuffer command for this off-hand), and they'll show quite nicely in profiling reports, with which you can see exactly how often each word is called, and how long it takes to execute.

VARIABLE and CONSTANT names don't generate symbols in compiled apps (they're optimized directly into the code).

If you redefine VARIABLE and CONSTANT, you can get the symbols generated in compiled PRCs --

```
: VARIABLE CREATE 1 CELLS ALLOT ;  
: CONSTANT CREATE , DOES> @ ;
```

Bear in mind that the above replacement definitions do not generate optimized code.

> Whew! Thanks for any suggestions.

Anytime!

Neal

Re: OnBoard Debugging Techniques

Posted by [Ron Doerfler](#) on May 12, 1999 at 21:40:16:

In Reply to: [Re: OnBoard Debugging Techniques](#) posted by Neal Bridges on May 12, 1999 at 16:40:41:

Hi Neal,

Thanks for your reply! I thought of two more things:

1. How does the "tester" word set work? I think you mentioned once that you use this sometimes.

2. It occurred to me that for correctly generated symbols, maybe the app has to be compiled into the standalone PRC file right on the emulator.

I've been creating the PRC file on the PalmPilot and then hotsyncing it and loading it into the emulator. Does it have to be compiled into the PRC on the emulator for the symbols to be valid?

Ron

Re: OnBoard Debugging Techniques

Posted by [Neal Bridges](#) on May 12, 1999 at 21:51:41:

In Reply to: [Re: OnBoard Debugging Techniques](#) posted by Ron Doerfler on May 12, 1999 at 21:40:16:

> 1. How does the "tester" word set work? I think you
> mentioned once that you use this sometimes.

needs tester

TESTING EXAMPLE

decimal

```
{ -> }
{ true invert -> false }
{ 3 5 + -> 8 }
{ 42 23 2drop -> }
{ 15 negate -> -15 }
{ 7 dup -> 7 7 }
```

> 2. It occurred to me that for correctly generated
> symbols, maybe the app has to be compiled into the
> standalone PRC file right on the emulator.
> I've been creating the PRC file on the
> PalmPilot and then hotsyncing it and loading it
> into the emulator. Does it have to be compiled into
> the PRC on the emulator for the symbols to be valid?

Not at all -- I could generate a PRC with symbols here, mail it to you, and you'd be able to use it without any problem. I suspect you're expecting the symbols to appear someplace they don't. Using the DeBuffer, they'll show in backtraces; using the Emulator, they'll show when profiling. Are you looking for them elsewhere?

Neal

Re: OnBoard Debugging Techniques

Posted by [Ron Doerfler](#) on May 13, 1999 at 03:10:14:

In Reply to: [Re: OnBoard Debugging Techniques](#) posted by Neal Bridges on May 12, 1999 at 21:51:41:

Hi Neal,

> Not at all -- I could generate a PRC with symbols here, mail it to you, and

> you'd be able to use it without any problem. I suspect you're expecting the
> symbols to appear someplace they don't. Using the DeBuffer, they'll show in
> backtraces; using the Emulator, they'll show when profiling. Are you looking
> for them elsewhere?

Well, I'm digging further into Debuffer. I'd only played with briefly, and I thought I did something wrong. I see now that when a disassembly is done, Debuffer also labels jumps to subroutines with the Quartus name of the subroutine. However, I was looking for a mapping of Quartus word names to physical addresses, so I could set a breakpoint at the address of a Quartus word. Debuffer seems to only offer the name given the address, using the "ln" command. Is there such a thing as a hard breakpoint in Quartus for stopping the emulator at a word? All it has to do is something illegal 8^).

I had surmised that the physical addresses that are assigned to PRC files at compile time can only be known by the unit or emulator doing the compiling at that time. I guess, though, that everything is just offset by some beginning physical address that the emulator has to know to call the app.

I'm looking for a two-way mapping of words vs. addresses so I can set breakpoints at words easily.

And can I dump the contents of the Quartus Forth stack as well as the call stack after I stop at a breakpoint? Again, it seems that I would need to know the physical address of the Forth stack pointer, no?

Or do your Quartus disassembly routines do some of this? I have to admit I have also not looked much at it.

Ron
who's off to read up on these (de)buggers

Re: OnBoard Debugging Techniques

Posted by [Neal Bridges](#) on May 13, 1999 at 06:22:40:

In Reply to: [Re: OnBoard Debugging Techniques](#) posted by Ron Doerfler on May 13, 1999 at 03:10:14:

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> played with briefly, and I thought I did something wrong.
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> at the address of a Quartus word. Debuffer seems to only offer
> the name given the address, using the "ln" command. Is there
> such a thing as a hard breakpoint in Quartus for stopping
> the emulator at a word? All it has to do is something
> illegal 8^).

You could store something at an odd address to generate an exception:

```
: breakpoint 0 1 ! ;
```

> I had surmised that the physical addresses that are assigned
> to PRC files at compile time can only be known by the unit
> or emulator doing the compiling at that time. I guess,
> though, that everything is just offset by some beginning
> physical address that the emulator has to know to call
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> And can I dump the contents of the Quartus Forth
> stack as well as the call stack after I stop at a breakpoint?
> Again, it seems that I would need to know the physical address
> of the Forth stack pointer, no?

The address of the stack pointer is in the A4 register, with the top of the stack cached in D7.

> Or do your Quartus disassembly routines do some of this?
> I have to admit I have also not looked much at it.

The Quartus Forth disassembler/decompiler will do a disassembly from within the Forth console similar to what "DeBuffer" does with symbols active -- word names are filled in.

Neal

Control Group IDs, anyone?

Posted by [Carl Jacobsen](#) on May 12, 1999 at 01:13:32:

The Palm OS SDK Reference (Reference.pdf), under "Palm OS Resources", lists the "Group ID" field for pushbuttons (p88) and checkboxes (p74) as taking a value between 0 and 65535 (i.e. 16 bits), while the docs for the Frm[GS]etControlGroupSelection functions describe the parameter as being a Byte. There also seems to be some confusion between PilRC and RsrcEdit, as a group ID set in PilRC to 2 comes out in RsrcEdit as 512 (2 << 8). Looks like "Palm OS Resources" and RsrcEdit are wrong, and Byte is the winner, yes?

Just checking my sanity...

-- Carl

Re: Control Group IDs, anyone?

Posted by [Neal Bridges](#) on May 12, 1999 at 10:41:52:

In Reply to: [Control Group IDs, anyone?](#) posted by Carl Jacobsen on May 12, 1999 at 01:13:32:

> The Palm OS SDK Reference (Reference.pdf), under "Palm OS Resources",
> lists the "Group ID" field for pushbuttons (p88) and checkboxes (p74)
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> RsrcEdit, as a group ID set in PilRC to 2 comes out in RsrcEdit as 512
> (2 << 8). Looks like "Palm OS Resources" and RsrcEdit are wrong,
> and Byte is the winner, yes?

The Group ID is an 8-bit value (a byte). RsrcEdit misrepresents the value by shifting it 8 bits left, as you suggest, even with groups created within RsrcEdit; I recommend you report the bug to Roger Lawrence.

Neal

Re: Control Group IDs, anyone?

Posted by [Carl Jacobsen](#) on May 13, 1999 at 16:21:49:

In Reply to: [Re: Control Group IDs, anyone?](#) posted by Neal Bridges on May 12, 1999 at 10:41:52:

> The Group ID is an 8-bit value (a byte). RsrcEdit misrepresents the value by
> shifting it 8 bits left, as you suggest, even with groups created within
> RsrcEdit; I recommend you report the bug to Roger Lawrence.

Will do (I'm making a small list of things to send his way, actually).

Thanks,
-- Carl

Re: Control Group IDs, anyone?

Posted by [Neal Bridges](#) on May 13, 1999 at 16:28:35:

In Reply to: [Re: Control Group IDs, anyone?](#) posted by Carl Jacobsen on May 13, 1999 at 16:21:49:

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> > shifting it 8 bits left, as you suggest, even with groups created within
> > RsrcEdit; I recommend you report the bug to Roger Lawrence.

> Will do (I'm making a small list of things to send his way, actually).

Add to your list: if you're editing a large bitmap, and you scroll over to the right to change pixels there, the changes actually occur in the part of the bitmap that is already scrolled off.

Neal

Re: Control Group IDs, anyone?

Posted by [Roger Lawrence](#) on May 15, 1999 at 17:38:33:

In Reply to: [Re: Control Group IDs, anyone?](#) posted by Neal Bridges on May 13, 1999 at 16:28:35:

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> Add to your list: if you're editing a large bitmap, and you scroll over to the
> right to change pixels there, the changes actually occur in the part of the
> bitmap that is already scrolled off.

> Neal

Hi Neal, Carl,

I just posted v0.9991, (sigh, i had hoped to go to v1.0 next, but it looks like I've got a bit more to do yet). This version fixes the bugs mentioned in this thread - the group number and the bitmap editing after scrolling. Carl, I'd love to see that list whenever you have it finished.

I was wondering about implementing a template for handling Font resources - would that be of any interest to anyone? Another idea I had bouncing around was some kind of dynamic template for viewing generic record/resource contents - the user would specify a struct-like data layout which would be overlaid on the data - any takers for that?

Re: Control Group IDs, anyone?

Posted by [Neal Bridges](#) on May 15, 1999 at 17:46:35:

In Reply to: [Re: Control Group IDs, anyone?](#) posted by Roger Lawrence on May 15, 1999 at 17:38:33:

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> I've got a bit more to do yet). This version fixes the bugs mentioned in this
> thread - the group number and the bitmap editing after scrolling. Carl, I'd
> love
> to see that list whenever you have it finished.

Thanks for the update, Roger! RsrcEdit is a good program.

> I was wondering about implementing a template for handling Font resources -
> would that be of any interest to anyone? Another idea I had bouncing around
was
> some kind of dynamic template for viewing generic record/resource contents -
the
> user would specify a struct-like data layout which would be overlaid on the
data
> - any takers for that?

I'm not sure I'd use a font resource handler very often, but if it's not hard to implement, it may be of value.

If I understand your latter idea, you're suggesting a sort of configurable browser for arbitrary data -- an interesting idea. I've been trying to think of a circumstance where it'd be handy, but haven't come up with one yet.

Neal

Re: Control Group IDs, anyone?

Posted by [Barry Marks](#) on May 21, 1999 at 19:38:08:

In Reply to: [Re: Control Group IDs, anyone?](#) posted by Neal Bridges on May 15, 1999 at 17:46:35:

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>> viewing generic record/resource contents - the user would specify a
>> struct-like data layout which would be overlaid on the data
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> browser for arbitrary data -- an interesting idea. I've been trying to
> think of a circumstance where it'd be handy, but haven't come up with one yet.

We had an unusual low level database system on a DG mini that used to be our major database. I wrote a generic viewer for it that let the user specify the record size and field information and also specify how he wanted to view the data. I really did this for my own use but I made it available to the other programmers and it quickly became a very heavily used tool. In fact it went through several upgrades.

Barry

BMP import

Posted by [Dennis Misener](#) on May 11, 1999 at 22:47:56:

What is the easiest way to import and convert a Windows .BMP file into tBmp resource format or better still a direct import into Quartus.

There has to be a better way than using ResEdit to recreate locally on the Palm Pilot.

I've searched and located PRC->BMP extractors and BMP to flash screen utilities.

Reusing the vast array of PC based graphics must be of interest to others than me.

As usual, any pointers would be appreciated.

Re: BMP import

Posted by [Neal Bridges](#) on May 11, 1999 at 23:00:04:

In Reply to: [BMP import](#) posted by Dennis Misener on May 11, 1999 at 22:47:56:

> What is the easiest way to import and convert a Windows .BMP file into tBmp
> resource format or better still a direct import into Quartus.

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> Pilot.

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utilities.

> Reusing the vast array of PC based graphics must be of interest to others than
> me.

> As usual, any pointers would be appreciated.

RsrcEdit 0.999 will directly import TealPaint images, and TealPaint provides utilities to convert BMP files to TealPaint format. This is likely to be the simplest route.

Alternatively, you can use PilRC to create bitmap resources, and Pila to compile them into a PRC -- see the Duco or Year sources for a batch file that does something similar with PilRC resources.

Neal

Interfacing with 3rd party SDK's

Posted by [Dennis Misener](#) on May 11, 1999 at 22:28:34:

Any suggestions for interfacing with 3rd party SDK's
(I'm interested the Symbol Technologies scanner SDK).

Can Quartus displace Codewarrior for such applications?

Are there any examples of interfacing to "C/C++ oriented" SDK's. I'm not sure how linkages to these "runtime like" entites is acomplished.

Any light on the matter would be appreciated.

Re: Interfacing with 3rd party SDK's

Posted by [Neal Bridges](#) on May 11, 1999 at 22:34:32:

In Reply to: [Interfacing with 3rd party SDK's](#) posted by Dennis Misener on May 11, 1999 at 22:28:34:

> Any suggestions for interfacing with 3rd party SDK's
> (I'm interested the Symbol Technologies scanner SDK).

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> Are there any examples of interfacing to "C/C++ oriented" SDK's. I'm not
> sure how linkages to these "runtime like" entites is acomplished.

> Any light on the matter would be appreciated.

I haven't looked at the Symbol SDK -- I wrote to Symbol offering to integrate Quartus Forth with their devices, but received no reply. I haven't revisited it yet.

If the Symbol library is an on-board library, or an additional set of systraps,

there'll be no problem using Quartus Forth to interface with it. I believe the information can be downloaded from www.symbol.com -- I'd be interested in knowing what you discover.

Neal

Re: Interfacing with 3rd party SDK's

Posted by [Dennis Misener](#) on May 11, 1999 at 22:54:09:

In Reply to: [Re: Interfacing with 3rd party SDK's](#) posted by Neal Bridges on May 11, 1999 at 22:34:32:

I'll keep you posted. The SDK can be freely downloaded from their site as you point out (after a simple registration screen). I'm hoping the interface is through SYSTRAP's -- I'm not sure the implementation is visible.

They could be hidden though their supplied libraries (which I doubt source is provide -- haven't had time to do much exploring).

PS. I noted that CASL offers a SYMBOL interface... so I'm hoping this isn't in the realm of impossible.

Re: Interfacing with 3rd party SDK's

Posted by [Neal Bridges](#) on May 11, 1999 at 23:00:54:

In Reply to: [Re: Interfacing with 3rd party SDK's](#) posted by Dennis Misener on May 11, 1999 at 22:54:09:

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> They could be hidden though their supplied libraries (which I doubt source is
> provide -- haven't had time to do much exploring).

> PS. I noted that CASL offers a SYMBOL interface... so I'm hoping this
> isn't in the realm of impossible.

If CASL provides such an interface, Quartus Forth most certainly can. Keep me in the loop!

Neal

"Recommended Books" page

Posted by [Neal Bridges](#) on May 11, 1999 at 21:16:02:

Hi folks -- I've put up a Recommended Books page at the link below. It's a selection of books from my own bookshelf that I recommend to any developer.

Most of the book links point to Chapters -- a Canadian bookseller; this will be convenient for Canadians, and beneficial to non-Canadians, as all their prices are in Canadian dollars (currently worth \$0.69 US dollars). They ship internationally.

Neal

- [Recommended Books](#)

Palm UI design standards?

Posted by [Carl Jacobsen](#) on May 11, 1999 at 16:44:20:

I've spent some time fruitlessly searching for a single document that details the gory details of how Palm thinks the various user interface elements should be laid out in an application...

I'm kinda shocked that I haven't found such a document...? I've found lots of philosophical stuff ("you should make your app run fast, you should make your app's common functions easily accessible"). I've got a pretty good handle on these design concepts already...

I'm looking for the document that gathers into one place all the bits about "buttons should be three pixels up from the bottom of the form", "buttons should be [this many] pixels apart", "vertically stacked labels or checkboxes should be given 12 pixels from the top of one to the top of the next", and that kind of stuff.

Perhaps with CodeWarrior and their gui-based interface designer (or whatever it's called) this stuff is just taken care of for you magically? With RsrcEdit I feel pretty competent now throwing fields and buttons up on the form, but I was expecting to find either Palm's "Canon" on field spacing, layout, etc., or at least something documenting "accepted common practice". I've skimmed a lot of the Palm OS SDK documentation, and there are bits and pieces there about layout, but they're scattered around, and don't seem like an exhaustive set of rules to me.

Sorry for the rant. Has anyone got any pointers that might help me?

Thanks,
-- Carl

Re: Palm UI design standards?

Posted by [Barry Marks](#) on May 11, 1999 at 17:16:12:

In Reply to: [Palm UI design standards?](#) posted by Carl Jacobsen on May 11, 1999 at 16:44:20:

Look in the "Good Design Practices" in the companion to the official Palm OS docs. It gives a lot of what you're looking for.

Barry

Re: Palm UI design standards?

Posted by [Carl Jacobsen](#) on May 11, 1999 at 23:58:37:

In Reply to: [Re: Palm UI design standards?](#) posted by Barry Marks on May 11, 1999 at 17:16:12:

> Look in the "Good Design Practices" in the companion to the official Palm OS
> docs. It gives a lot of what you're looking for.

Hmm, I've been through the "Good Design Practices" section (actually printed that whole section out), expecting to find that which I seek, but was rather disappointed -- at your prompting I've looked through it again, and still find it not quite what I'd hoped... They say things like, "don't change or obscure the Graffiti Status Indicator" area, and that it should be in "the lower right corner", but I was hoping for something that would say things like "the shift indicator should be at (150 150), unless you have a compelling reason to move it". I know this sounds like a minor thing, but it appeals to my sense of accuracy; otherwise you let people loose on their own, and before you know it, the Graffiti Status Indicator shows up at 75 different sets of coordinates, all in the lower right corner, all just a little different from each other, and then who knows where it leads... pretty soon, the Graffiti Status Indicator situation is getting out of hand in New York, cats and dogs are living together, and Zool's representative is asking Bill Murray if he's a God -- oh wait, wrong movie.

Anyways, I was hoping for more concrete rules to follow in an attempt to do things "The One True Right Way(tm)"...

Thanks for the prodding though, I have to admit that the "Good Design Practices" section has more useful info that I gleaned on first skimming...

Those nice young men in their clean white coats want me to come back inside now...

-- Carl

Re: Palm UI design standards?

Posted by [Barry Marks](#) on May 12, 1999 at 10:36:12:

In Reply to: [Re: Palm UI design standards?](#) posted by Carl Jacobsen on May 11, 1999 at 23:58:37:

> Hmm, I've been through the "Good Design Practices" section (actually
> printed that whole section out), expecting to find that which I seek,
> but was rather disappointed -- at your prompting I've looked through
> it again, and still find it not quite what I'd hoped... They say
> things like, "don't change or obscure the Graffiti Status Indicator"
> area, and that it should be in "the lower right corner", but I was
> hoping for something that would say things like "the shift indicator
> should be at (150 150), unless you have a compelling reason to move
> it". I know this sounds like a minor thing, but it appeals to my

In my copy I found diagrams showing the expected distance of indicators and buttons from the edge of the screen in various situations and something on their distance from one another.

If I were publishing an app I would read this section to make sure I didn't overlook anything, but I would pretty much do it by sight, not according to a checklist.

Barry

Re: Palm UI design standards?

Posted by [Carl Jacobsen](#) on May 13, 1999 at 16:18:13:

In Reply to: [Re: Palm UI design standards?](#) posted by Barry Marks on May 12, 1999 at 10:36:12:

> In my copy I found diagrams showing the expected distance of indicators and
> buttons from the edge of the screen in various situations and something on
> their distance from one another.

Well, my point was that they do give some nice information, but it is in no way comprehensive; I was wondering if there was an "all the gory detail" document floating around that I had missed. Seems the answer is no.

> If I were publishing an app I would read this section to make sure I didn't
> overlook anything, but I would pretty much do it by sight, not according to a
> checklist.

Heh, I've adopted pretty much that approach, with a twist: I tweaked my copy of pilot-xfer so that it can back up the Palm OS apps (resulting in

System.prc, Memo Pad.prc, etc.), and now I can use prc2pilrc to look at Palm's own resources at will (it's surprising the number of small inconsistencies between various screens, dialogs, etc., but it's nice to be able to see exactly how they do some of their layout).

-- Carl

Re: Palm UI design standards?

Posted by [Neal Bridges](#) on May 13, 1999 at 16:29:13:

In Reply to: [Re: Palm UI design standards?](#) posted by Carl Jacobsen on May 13, 1999 at 16:18:13:

> Heh, I've adopted pretty much that approach, with a twist: I tweaked my
> copy of pilot-xfer so that it can back up the Palm OS apps (resulting in
> System.prc, Memo Pad.prc, etc.), and now I can use prc2pilrc to look at
> Palm's own resources at will (it's surprising the number of small
> inconsistencies between various screens, dialogs, etc., but it's nice
> to be able to see exactly how they do some of their layout).

You can view them on-board in a tweak-free fashion using RsrcEdit, also.

Neal

Viewing Palm OS Resources [was Re: Palm UI design standards?]

Posted by [Carl Jacobsen](#) on May 13, 1999 at 20:46:55:

In Reply to: [Re: Palm UI design standards?](#) posted by Neal Bridges on May 13, 1999 at 16:29:13:

> You can view them on-board in a tweak-free fashion using RsrcEdit, also.

[sound of hand hitting forehead] You know, you're right -- it hadn't occurred to me to look for them there. Still, while I like building resources in RsrcEdit, I sometimes find it much easier to get an overview of things by looking at them in .rcp form...

Thanks for the tip,

-- Carl

Re: Viewing Palm OS Resources [was Re: Palm UI design standards?]

Posted by [Neal Bridges](#) on May 13, 1999 at 20:50:35:

In Reply to: [Viewing Palm OS Resources \[was Re: Palm UI design standards?\]](#)
posted by Carl Jacobsen on May 13, 1999 at 20:46:55:

> > You can view them on-board in a tweak-free fashion using RsrcEdit, also.
> [sound of hand hitting forehead] You know, you're right -- it hadn't
> occurred to me to look for them there. Still, while I like building
> resources in RsrcEdit, I sometimes find it much easier to get an
> overview of things by looking at them in .rcp form...

To help with that, you can also duplicate the built-in application databases from within RsrcEdit, change the name and creator ID, and HotSync them out to the desktop for dissection via prc2rcp or similar.

Neal

Davinci

Posted by [Jeff Talbert](#) on May 11, 1999 at 13:18:36:

Neal,

Curioius what kind of progress your making with Quartus for the Davinci now that Royal has given you the green light?

Thanks

Jeff

Re: Davinci

Posted by [Neal Bridges](#) on May 11, 1999 at 14:34:39:

In Reply to: [Davinci](#) posted by Jeff Talbert on May 11, 1999 at 13:18:36:

> Curioius what kind of progress your making with Quartus for the Davinci now
> that Royal has given you the green light?

I'm working on it. Royal delayed so long in responding to me that I assumed I'd never get an answer, and I let other projects take priority; I'll be able to move faster on the daVinci Forth soon.

Neal

InfraRed interface

Posted by [Maurilio Carvalho](#) on May 10, 1999 at 16:43:56:

How to access the I-R interface directly to use my own communication protocol and bit rates ?
Is it possible or is the IrDA protocol the only available way to use ?

Re: InfraRed interface

Posted by [Neal Bridges](#) on May 10, 1999 at 16:51:05:

In Reply to: [InfraRed interface](#) posted by Maurilio Carvalho on May 10, 1999 at 16:43:56:

> How to access the I-R interface directly to use my own communication
> protocol and bit rates ?
> Is it possible or is the IrDA protocol the only available way to use ?

I know there has been some discussion of this in the pilot.programmer newsgroup. I suggest you scan DejaNews; I remember seeing an article fairly recently there that gave an overview of how programs like "OmniRemote" work.

Neal

Book on serial programming

Posted by [Philippe de Rochambeau](#) on May 09, 1999 at 17:47:53:

Can anyone recommend a good book on basic serial programming?

Neal's serial programming example has whetted my appetite for serial programming in QForth.

Many thanks.

Philippe de Rochambeau

Re: Book on serial programming

Posted by [Neal Bridges](#) on May 09, 1999 at 21:00:10:

In Reply to: [Book on serial programming](#) posted by Philippe de Rochambeau on May 09, 1999 at 17:47:53:

> Can anyone recommend a good book on basic serial programming?
> Neal's serial programming example has whetted my appetite for serial programming
> in QForth.

What sort of serial programming do you want to do?

Neal

Re: Book on serial programming

Posted by [Philippe de Rochambeau](#) on May 10, 1999 at 03:26:22:

In Reply to: [Re: Book on serial programming](#) posted by Neal Bridges on May 09, 1999 at 21:00:10:

I would like to write a program to communicate and retrieve data from data servers such as French Minitel servers.

Philippe de Rochambeau

> > Can anyone recommend a good book on basic serial programming?
> > Neal's serial programming example has whetted my appetite for serial programming
> > in QForth.
> What sort of serial programming do you want to do?
> Neal

Re: Book on serial programming

Posted by [Neal Bridges](#) on May 10, 1999 at 10:42:39:

In Reply to: [Re: Book on serial programming](#) posted by Philippe de Rochambeau on May 10, 1999 at 03:26:22:

> I would like to write a program to communicate and retrieve data from data
> servers such as French Minitel servers.

I suspect material directly relating to how the Palm handles its serial port would be of greater use to you than a general-purpose book on serial programming. I recommend you have a look at the 3Com document, "Developing OS 3.0 Applications/ Part III: Memory and Communications Management". It has considerable documentation on the Palm OS calls provided for serial i/o.

Neal

Re: Book on serial programming

Posted by [Barry Marks](#) on May 09, 1999 at 18:32:04:

In Reply to: [Book on serial programming](#) posted by Philippe de Rochambeau on May 09, 1999 at 17:47:53:

> Can anyone recommend a good book on basic serial programming?

> Neal's serial programming example has whetted my appetite for serial
programming
> in QForth.

"C Programmer's Guide to Serial Communication" by Joe Campbell is one that I found useful when I was doing comm programming. It's become a minor classic, I think. It's been through one or two updates since the original.

Barry

- [Amazon link](#)

Database access

Posted by [Barry Marks](#) on May 08, 1999 at 18:16:42:

I saw in the restart snippet that you use

DBid >abs

Are databases accessed as memory areas? I know they are memory areas as they

are on my 200lx. There is nothing but memory. But the 200lx emulates a file system. Isn't there anything like that on the Palm?

Another question....this is off topic. I hope that's ok.

I've been trying without success to find info on the Palm machine. For example, whether video is memory mapped and if it can be written to directly, or if you send data through a port to the video. (does the 68000 even have ports? I remember in the 6809 their counterpart was mapped into memory).

Also, if this kind of direct access is possible, does anyone do that or is that considered to be not well behaved?

Barry

Palm hardware design [was Re: Database access]

Posted by [Carl Jacobsen](#) on May 09, 1999 at 04:22:50:

In Reply to: [Database access](#) posted by Barry Marks on May 08, 1999 at 18:16:42:

> I've been trying without success to find info on the Palm machine. For
> example, whether video is memory mapped and if it can be written to directly,
> or if you send data through a port to the video.

This isn't exactly the info you're looking for, but for a bunch of interesting information about the hardware side of how a PalmPilot's memory is laid out, take a look at the link below. This is the page of someone who has done DIY memory upgrades, so he knows whereof he speaks. I found it quite interesting, though I'm *not* heating up my soldering iron (and there *is* someone else selling the service of doing such upgrades).

- [4MB Memory Extension for the Palm III \[Memory hardware info\]](#)

Re: Palm hardware design [was Re: Database access]

Posted by [Barry Marks](#) on May 09, 1999 at 13:38:52:

In Reply to: [Palm hardware design \[was Re: Database access\]](#) posted by Carl Jacobsen on May 09, 1999 at 04:22:50:

> This isn't exactly the info you're looking for, but for a bunch of

> interesting information about the hardware side of how a PalmPilot's
> memory is laid out, take a look at the link below. This is the page
> of someone who has done DIY memory upgrades, so he knows whereof he
> speaks. I found it quite interesting, though I'm *not* heating
> up my soldering iron (and there *is* someone else selling the
> service of doing such upgrades).

Thanks very much for this link. I've just read a little bit of it. It's more from an engineer's perspective than a programmer's but I can understand enough of it to learn from it.

I downloaded the meminfo program on that site but it doesn't give addresses on my IIIx. They're all 0. Oh well. A little here. A little there. :)

Barry

Re: Database access

Posted by [Neal Bridges](#) on May 08, 1999 at 18:41:25:

In Reply to: [Database access](#) posted by Barry Marks on May 08, 1999 at 18:16:42:

> I saw in the restart snippet that you use

> DBid >abs

What that does is turn the 16-bit address of the DBid variable into a 32-bit absolute address to be passed to the OS.

> Are databases accessed as memory areas? I know they are memory areas as they
> are on my 2001x. There is nothing but memory. But the 2001x emulates a file
> system. Isn't there anything like that on the Palm?

All Palm databases are located in memory -- as on your 2001x, there's also nothing but memory in the Palm. Each database is a collection of records, each as much as 64K in size. Once you've done a DmGetRecord and MemHandleLock, you can access the data in a record directly in memory until you do a MemHandleUnlock/DmReleaseRecord.

> Another question....this is off topic. I hope that's ok.

> I've been trying without success to find info on the Palm machine. For
> example, whether video is memory mapped and if it can be written to directly,
> or if you send data through a port to the video. (does the 68000 even have
> ports? I remember in the 6809 their counterpart was mapped into memory).

The LCD bitmap is memory-mapped, and can be written to directly.

> Also, if this kind of direct access is possible, does anyone do that or is that

> considered to be not well behaved?

It's considered unwise -- there's a high probability that future devices will have screens of different sizes, making direct screen-writes not a good idea.

Neal

Re: Database access

Posted by [Barry Marks](#) on May 08, 1999 at 19:41:46:

In Reply to: [Re: Database access](#) posted by Neal Bridges on May 08, 1999 at 18:41:25:

Thanks for answering. I'm not working on anything that needs database access yet but I will in time.

Barry

Re: Database access

Posted by [Neal Bridges](#) on May 08, 1999 at 18:44:36:

In Reply to: [Re: Database access](#) posted by Neal Bridges on May 08, 1999 at 18:41:25:

> All Palm databases are located in memory -- as on your 2001x, there's
> also nothing but memory in the Palm. Each database is a collection of
records,
> each as much as 64K in size.

Just to forestall any confusion -- databases can be very large indeed, it's just that each record within a database has a limit of 64K.

Neal

Python VM in Forth

Posted by [Michel Pelletier](#) on May 08, 1999 at 15:55:41:

Greetings,

I haven't chimed in on the discussion board in a while, been busy with my new job which happens to be:

Python programming!

I have fallen in love with Python with much the same emotion I have toward Forth. I feel that these two languages are both so well thought out that I acutally think in them (both of them, but not at the same time ;).

This is not one of those flame-war inducing which-language-is-better posts. I am allready a Forth believer, I just also happen to be a Python believer.

(For those interested: <http://www.python.org/>)

I've have been recently interested in some of the developments by the ucLinux folks, trying to develop a small linux OS for the Palm platform. From rumors heard, their intention is to make Python the primary scripting interface to ucLinux, and (I think) have it be a shell-script like language replacement. I could be wrong, I have yet to get ucLinux to work in my copilot yet.

So I'm curious about a couple of things:

One, Neal, have you thoughts about porting Quartus to ucLinux?

Two, Python is a byte code interpreted language. The inner VM loop (in Python called 'ceval.c') is based on a stack machine-like mechanism. I think a Python VM could be written wrather successfully in Forth. Of course, lots of the Python goodies like an interactive interpreter and a byte code compiler and most of the add-on modules would be not be present. So, if:

One Quartus was ported to ucLinux:

and

A Forth VM was written:

Then a one-two punch Forth/Python combination would be cross platform between the two OSes.

This is currently just idle speculation, but I have done some initial Forth prototyping of the Python VM, for example, here are some of the Python opcodes, written in Forth. Notice the stack machine like nature of the opcodes:

```
: SWAP_DEC / convienice function
SWAP Py_DECREF ;
```

```
: POP_TOP ( n - )
DROP Py_DECREF ;
```

```
: ROT_TWO ( v w - w v )
SWAP ;
```

```
: ROT_THREE ( x w v - v x w )
ROT ROT SWAP ;
```

```
: DUP_TOP ( n - n n2 )
DUP Py_INCREF ;
```

```
: UNARY_POSITIVE
PyNumber_Positive SWAP_DEC ; / neads an IF 'ACTION'
```

```
: UNARY_NEGATIVE
PyNumber_Negative SWAP_DEC ;

: UNARY_NOT
PyObject_IsTrue SWAP_DEC
IF
Py_True Py_INCREF
ELSE
Py_False Py_DECREF ;

: UNARY_CONVERT
PyObject_Repr SWAP_DEC ;

: UNARY_INVERT
PyNumber_Invert SWAP_DEC ;

: BINARY_POWER ( n n2 - x )
PyNumber_Power SWAP_DEC SWAP_DEC ;

: BINARY_MULTIPLY
PyNumber_Multiply SWAP_DEC SWAP_DEC ;

: BINARY_DIVIDE
PyNumber_Divide SWAP_DEC SWAP_DEC ;

: BINARY_MODULO
PyNumber_Remainder SWAP_DEC SWAP_DEC ;
```

Ideas?

-Michel

- [Zope!](#)

Re: Python VM in Forth

Posted by [Neal Bridges](#) on May 08, 1999 at 16:53:54:

In Reply to: [Python VM in Forth](#) posted by Michel Pelletier on May 08, 1999 at 15:55:41:

> So I'm curious about a couple of things:

> One, Neal, have you thoughts about porting Quartus to ucLinux?

I haven't given it any serious consideration. I view the efforts to run Unix on the Palm as little more than a novelty.

I would, however, hope that any new OS for the Palm would take the steps required to allow the running of existing PRCs. Text-only apps on the Palm would be awkward indeed, and X seems like even more of a reach than Unix for the device. To require Palm apps to be re-written for yet another API would be an

unfortunate burden for a new OS to carry.

As to Python: it's an interesting language, but it depends upon indentation to delineate its control structures, and tends to run fairly wide (80 column lines or better, much like C); neither of these attributes suit it to such a small display screen.

Also, Pocket C and CASL show just how slowly byte-code runs on the Palm -- it's only a 16 MHz 68000 CPU. You'd need native-code translation to hope to achieve reasonable application speeds.

I'm sure some of the uLinux project details are interesting, but to jump on the bandwagon I'd need to see more future for it than "hey, look, it's a little Unix-like kernel running on a Palm!".

Neal

Alternate OS was (Re: Python VM in Forth)

Posted by [Barry Marks](#) on May 09, 1999 at 13:59:36:

In Reply to: [Re: Python VM in Forth](#) posted by Neal Bridges on May 08, 1999 at 16:53:54:

> I haven't given it any serious consideration. I view the efforts to run Unix
> on the Palm as little more than a novelty.

It seems to me that a better model for an alternate OS for the Palm would be something like OS9 from Microware. Many years ago I ran it on a 64k Radio Shack color computer. It was a small subset of unix but had it's own very coherent way of doing things. It didn't try to copy the larger system.

It resided on about 1/2 of a 160k floppy and took 24k ram. It was a multitasking, multithreading, multi-user (all preemptive) system with good i/o redirection and many of the things we expect from unix. What it most obviously lacked was a serious scripting language. MS-Dos batch files are more sophisticated. But you could put any series of commands into a text file and execute it.

A couple of friends and I once, as an experiment, connected 2 terminals and tried each writing our own programs at the same time, one from the console and one from each terminal, just as you would on any time sharing system. As I remember, there was room for 3 editors (the system shared code for multiple instances) but not for 2 editors and an assembler or linker. 3 assemblers were fine. 2 linkers would work. There was no virtual memory.

I don't really see much point in an alternate OS for the Palm but I can understand that people might want to make one for the challenge. I think something like this would be a much better fit than Linux.

Barry

Re: Alternate OS was (Re: Python VM in Forth)

Posted by [Carl Jacobsen](#) on May 09, 1999 at 15:39:00:

In Reply to: [Alternate OS was \(Re: Python VM in Forth\)](#) posted by Barry Marks on May 09, 1999 at 13:59:36:

> It seems to me that a better model for an alternate OS for the Palm would be
> something like OS9 from Microware. Many years ago I ran it on a 64k Radio
> Shack color computer...

I find this idea intriguing... I read the articles about OS9, way back when, but never got around to playing with it, since I started out on the Apple side of the fence, and was firmly entrenched in using real Unix on large computers (heh, the first one was a huge, fast **10mhz** 68000 with **one** megabyte of RAM -- makes you think) by the time OS9 and the CoCo's hit the scene.

> I don't really see much point in an alternate OS for the Palm but I can
> understand that people might want to make one for the challenge. I think
> something like this would be a much better fit than Linux.

To be fair, I think the Linux-on-the-PalmPilot people are trying to improve the code for Linux at the low end, rather than trying to mount a serious challenge to Palm OS -- it's just that 3com turns out to be a convenient supplier for a hackable little 68k box with built-in screen and touchpad :-)

-- Carl

Re: Python VM in Forth

Posted by [Michel Pelletier](#) on May 08, 1999 at 17:16:46:

In Reply to: [Re: Python VM in Forth](#) posted by Neal Bridges on May 08, 1999 at 16:53:54:

> > So I'm curious about a couple of things:

> > One, Neal, have you thoughts about porting Quartus to uClinux?

> I haven't given it any serious consideration. I view the efforts to run Unix on

> the Palm as little more than a novelty.

Yes, this is really a minor point I might have stressed too much.

> I would, however, hope that any new OS for the Palm would take the steps
> required to allow the running of existing PRCs. Text-only apps on the Palm

> would be awkward indeed, and X seems like even more of a reach than Unix for the
> device. To require Palm apps to be re-written for yet another API would be an
> unfortunate burden for a new OS to carry.

I think X would be unreachable. I'm not aware now how the ucLinux folks are doing graphics.

> As to Python: it's an interesting language, but it depends upon indentation to
> delineate its control structures, and tends to run fairly wide (80 column
lines
> or better, much like C); neither of these attributes suit it to such a small
> display screen.

Agreed. I don't think an interpreter or byte-code compiler would be worth implimenting in Forth, just a VM that would run pre-compiled byte code. We have strict 80 column guidlines at Digital Creations, and even then it takes some cleverness to keep my code within that restriction.

> Also, Pocket C and CASL show just how slowly byte-code runs on the Palm --
it's
> only a 16 MHz 68000 CPU. You'd need native-code translation to hope to
achieve
> reasonable application speeds.

Understood. I'm prototyping the VM in gforth on my PII350, stepping that down to 16MHz would be a drag. I will be actively trying it against Quartus, however, for kicks. My thoughts are the VM could apeal in a limited way to embedded developers, it's really at the moment much of a fantasy project. I think that if an embeded developer wanted to use Python based on Forth, they'd just do the whole thing if Forth to begin with.

Also, there are currently two implimentations of Python, CPython and JPython (C and Java). CPython is the original beast, evelolved from version 0.1 for the past decade. JPython is a recent implimentation which is about 2 to 3 times slower than CPython, recent studies however have shown that that JIT compiling JPython bring performance in line with CPython. I think (maybe?) an FPython VM could beath them both.

> I'm sure some of the ucLinux project details are interesting, but to jump on the
> bandwagon I'd need to see more future for it than "hey, look, it's a little
> Unix-like kernel running on a Palm!".

Yep. This whole idea isn't really very Quartus specific or ucLinux specific. Quartus just happens to be my second primary Forth development environment. I'll move it off to comp.lang.forth.

-Michel

> Neal

Re: Python VM in Forth

Posted by [Carl Jacobsen](#) on May 09, 1999 at 04:04:53:

In Reply to: [Re: Python VM in Forth](#) posted by Michel Pelletier on May 08, 1999 at 17:16:46:

```
>> ... Text-only apps on the Palm would be awkward indeed,  
>> and X seems like even more of a reach than Unix for the device. ...  
>  
> I think X would be unreachable. I'm not aware now how the ucLinux folks are  
> doing graphics.
```

Hey, knock it off you guys! You're dashing my hopes! I've been eagerly waiting for the ucLinux people to get Linux and X up and running on the PalmPilot so that I can play Linux Quake on it...

-- Carl :-)

Re: Python VM in Forth

Posted by [Neal Bridges](#) on May 08, 1999 at 17:21:41:

In Reply to: [Re: Python VM in Forth](#) posted by Michel Pelletier on May 08, 1999 at 17:16:46:

```
> Yep. This whole idea isn't really very Quartus specific or ucLinux specific.  
> Quartus just happens to be my second primary Forth development environment.  
> I'll move it off to comp.lang.forth.
```

A Python that compiled to Forth source might well be interesting -- in other words, a translator that takes Python byte-code and writes out Forth source that could be compiled within Quartus Forth (or another Forth, for that matter -- Forth used as the intermediate language between Python and the target.

Neal

Re: Python VM in Forth

Posted by [William Tanksley](#) on May 11, 1999 at 11:36:37:

In Reply to: [Re: Python VM in Forth](#) posted by Neal Bridges on May 08, 1999 at 17:21:41:

```
> A Python that compiled to Forth source might well be interesting -- in other  
> words, a translator that takes Python byte-code and writes out Forth source  
> that
```

> could be compiled within Quartus Forth (or another Forth, for that matter --
> Forth used as the intermediate language between Python and the target.

Actually, some of the Python people are discussing using threaded code to help
get some speed back into Python.

(Man, that's a NICE language.)

> Neal

-Billy

Re: Python VM in Forth

Posted by [Serg Koren](#) on May 09, 1999 at 22:16:31:

In Reply to: [Re: Python VM in Forth](#) posted by Neal Bridges on May 08, 1999 at
17:21:41:

> A Python that compiled to Forth source might well be interesting -- in other
> words, a translator that takes Python byte-code and writes out Forth source
that

> could be compiled within Quartus Forth (or another Forth, for that matter --
> Forth used as the intermediate language between Python and the target.

> Neal

Why not just cut out the middle step and build a translator that translates
Python source directly to FORTH? It would be more difficult to implement
(parsing and translating the syntaxes), but would ultimately be more
efficient. After all you'd first have to write a Pilot app that translates
Python into Python byte-codes which then get translated into FORTH source...

Just my random thought for the day,

S

Re: Python VM in Forth

Posted by [Neal Bridges](#) on May 09, 1999 at 22:18:28:

In Reply to: [Re: Python VM in Forth](#) posted by Serg Koren on May 09, 1999 at
22:16:31:

>

> > A Python that compiled to Forth source might well be interesting -- in other
> > words, a translator that takes Python byte-code and writes out Forth source
> that

> > could be compiled within Quartus Forth (or another Forth, for that matter --
> > Forth used as the intermediate language between Python and the target.

> Why not just cut out the middle step and build a translator that translates
> Python source directly to FORTH? It would be more difficult to implement
> (parsing and translating the syntaxes), but would ultimately be more
> efficient. After all you'd first have to write a Pilot app that translates
> Python into Python byte-codes which then get translated into FORTH source...

I wasn't thinking so much of an app that ran on the Palm, but rather on the PC,
to translate Python byte-codes to Forth. This would eliminate the need to have
the Python source available. Of course, what you suggest would also be handy,
but I'd estimate harder to write.

Neal

Fatal Error on startup

Posted by [jeff](#) on May 07, 1999 at 17:28:08:

Upon starting Quartus I get a fatal error of:
MemoryMgrnew.c,
Line:3970, Invalid handle

Anyone else have this problem?

Re: Fatal Error on startup

Posted by [Neal Bridges](#) on May 07, 1999 at 18:18:03:

In Reply to: [Fatal Error on startup](#) posted by jeff on May 07, 1999 at 17:28:08:

> Upon starting Quartus I get a fatal error of:
> MemoryMgrnew.c,
> Line:3970, Invalid handle

>
> Anyone else have this problem?

The only reason I can think that that would happen is if you don't have
sufficient free memory. How much do you have available?

Neal

Re: Fatal Error on startup

Posted by [Jeff](#) on May 14, 1999 at 11:10:19:

In Reply to: [Re: Fatal Error on startup](#) posted by Neal Bridges on May 07, 1999 at 18:18:03:

> > Upon starting Quartus I get a fatal error of:
> > MemoryMgrnew.c,
> > Line:3970, Invalid handle

> >
> > Anyone else have this problem?

> The only reason I can think that that would happen is if you don't have
> sufficient free memory. How much do you have available?

> Neal

I only had 1% free and when I freed up the memory it loaded right up! Thanks for your help

CategoryFind

Posted by [Steve Gibson](#) on May 07, 1999 at 12:13:27:

In the application I'm playing with I've coded the ability to save output from form fields into a new memo that gets created on the fly (largely thanks to Allen Chen's newmemo.txt library). In the past I've been hardcoding the category that the memo is saved to: 0 which is "Unfiled".

Now I've decided to try and tackle selecting a specific category to save the new memo to...the two PalmOS systrops I'm playing with are CategoryFind and CategoryGetName. They are both pretty straight-forward (seemingly ;)). Here are the stack diagrams:

```
CategoryFind ( &name. db. -- u )  
CategoryGetName ( &name. index db. -- )
```

I have no problems with CategoryGetName. When I provide it with a 2variable, the index number, and the database, it nicely stores the name of the category in the 2variable, and I've been able to confirm

CategoryFind, seemingly the simpler of the two, is acting weirdly. Specifically, when I pass the name of the category (as the address of a 2variable followed by >abs) and the database name, it always spits out 255 for the category number. This is apparently the number for the "All" category. Here's my code...maybe (hopefully) someone can point out something I've overlooked:

```
\ catfind
```

needs newmemo

variable cflen \ length of the category string

2variable catname

\ This is a hacked version of Neal's (id) word. It stores the string in
\ the catname 2variable and the string length in the cflen variable.

\ Invoked as "(CName) Personal"

: (CName) (--)

parse-word

catname swap dup cflen ! move ;

: getcatnum (-- u)

openMemoDB-RO

catname >abs MemoDBR CategoryFind

CloseMemoDB ;

: getcatname (u --)

>r openMemoDB-RO

catname >abs r> MemoDBR

CategoryGetName

CloseMemoDB ;

: test-out catname cflen @ type ;

When I do the (CName) it always puts the correct string in catname
and string length in cflen. I know this by using test-out. But when I run it
through getcatnum, it always returns 255.

I'm stumped...

-Steve

Re: CategoryFind

Posted by [Steve Gibson](#) on May 07, 1999 at 12:25:46:

In Reply to: [CategoryFind](#) posted by Steve Gibson on May 07, 1999 at 12:13:27:

I butchered the code snippet in the last post, sorry...maybe this will be easier to read:

```
\ catfind
needs newmemo

variable cflen \ length of the category string
> 2variable catname

\ This is a hacked version of Neal's (id) word. It stores the string in
\ the catname 2variable and the string length in the cflen variable.
\ Invoked as "(CName) Personal"
: (CName) ( -- )
parse-word
catname swap dup cflen ! move ;

: getcatnum ( -- u)
openMemoDB-RO
catname >abs MemoDBR CategoryFind
CloseMemoDB ;

: getcatname ( u -- )
>r openMemoDB-RO
catname >abs r> MemoDBR
CategoryGetName
CloseMemoDB ;

: test-out catname cflen @ type ;
```

Re: CategoryFind

Posted by [Neal Bridges](#) on May 07, 1999 at 12:24:58:

In Reply to: [CategoryFind](#) posted by Steve Gibson on May 07, 1999 at 12:13:27:

Steve, I believe the string passed to CategoryFind must be zero-byte-delimited. Give that a try.

Neal

Re: CategoryFind

Posted by [Steve Gibson](#) on May 07, 1999 at 12:46:39:

In Reply to: [Re: CategoryFind](#) posted by Neal Bridges on May 07, 1999 at 12:24:58:

> Steve, I believe the string passed to CategoryFind must be zero-byte-delimited.
> Give that a try.

That did it! Jeez, I think that has been the answer to many of the problems I've had. You'll have to excuse me for being thick-skulled... I hear that I was dropped on my head a few times when I was a baby.

From now on I just need to try it both ways if I have trouble passing strings... Sorry to be such a constant bother!

I have to say, though, that I love playing/working with Quartus. It has redefined the PalmPilot for me. It has changed it from being just an organizer/PDA to a full-fledged computer platform!

Thanks again, Neal!

-Steve

Serial problems

Posted by [Rick Appling](#) on May 06, 1999 at 22:18:30:

Does anyone have any information or examples for using serial communications?

Re: Serial problems

Posted by [Neal Bridges](#) on May 06, 1999 at 22:22:36:

In Reply to: [Serial problems](#) posted by Rick Appling on May 06, 1999 at 22:18:30:

> Does anyone have any information or examples for using serial communications?

There's *serial.txt* in the File Library -- that should get you started. I'm happy to assist and answer any questions you come up with, either here on the Forum or via email.

Neal

Re: Serial problems

Posted by [Rick Appling](#) on May 07, 1999 at 08:08:15:

In Reply to: [Re: Serial problems](#) posted by Neal Bridges on May 06, 1999 at 22:22:36:

> > Does anyone have any information or examples for using serial communications?

> There's *serial.txt* in the File Library -- that should get you started.

> I'm happy to assist and answer any questions you come up with, either here on

> the Forum or via email.

> Neal

I have looked at it, but either I am missing something or I need to load something else before I can invoke serial commands. When I try to do a SerOpen I get a fatal exception. Of course I may be missing something obvious, it's been almost 20 years since I have done any serious Forth programming.

Re: Serial problems

Posted by [Neal Bridges](#) on May 07, 1999 at 08:18:35:

In Reply to: [Re: Serial problems](#) posted by Rick Appling on May 07, 1999 at 08:08:15:

> > > Does anyone have any information or examples for using serial communications?

> > There's *serial.txt* in the File Library -- that should get you started.

> > I'm happy to assist and answer any questions you come up with, either here on

> > the Forum or via email.

> I have looked at it, but either I am missing something or I need to load something else before I can invoke serial commands. When I try to do a SerOpen

> I get a fatal exception. Of course I may be missing something obvious, it's been almost 20 years since I have done any serious Forth programming.

Here's a short test routine that sends data from the Palm to a terminal emulator running on the PC. I found that I have to explicitly set the baud rate after the serOpen.

```
38400. serOpen .
SerSettings: mysettings
mysettings SerGetSettings
38400. mysettings SerSet.baud 2!
mysettings SerSetSettings
: test s" Hello" SerSend ;
test

Neal
```

Protecting data from crashes [offsubject]

Posted by [Serg Koren](#) on May 06, 1999 at 14:52:17:

Hi,
I'm still playing with the shareware version (and will register in the near future). However, I have a generic question and am wondering how people deal with this (short of having 2 Palms--the device, not the hands).

When developing and your system freezes so you have to do a hard-reset; don't you feel frustrated that you've lost all your other apps/data? How do people recover from this situation, are there any tools short of doing endless hotsync restores?

Using an emulator works ok (when you have one available), but I still haven't figured out an easy way to load windows notepad files into it.

Just wondering,
Tha

Re: Protecting data from crashes [offsubject]

Posted by [Neal Bridges](#) on May 06, 1999 at 16:38:36:

In Reply to: [Protecting data from crashes \[offsubject\]](#) posted by Serg Koren on May 06, 1999 at 14:52:17:

> I'm still playing with the shareware version (and will register in the near
> future). However, I have a generic question and am wondering how people deal
> with this (short of having 2 Palms--the device, not the hands).

> When developing and your system freezes so you have to do a hard-reset; don't
> you feel frustrated that you've lost all your other apps/data? How do people
> recover from this situation, are there any tools short of doing endless
hotsync
> restores?

I've only ever managed to hang my Pilot that badly once, and that was using an internal development version of Quartus Forth. A soft-reset (via the reset hole in the back) is normally adequate.

However, if you want to take a full backup of every bit and piece on your Palm, there's the freely-available "pilot-xfer" for Win95 and Unix that works very well indeed, and a commercial product called BackupBuddy that I hear also works just as well.

> Using an emulator works ok (when you have one available), but I still haven't
> figured out an easy way to load windows notepad files into it.

If you have two COM: ports, you can actually HotSync the Emulator; also you can load backup MemoPad files created by pilot-xfer or similar directly into the emulator.

Neal

Re: Protecting data from crashes [offsubject]

Posted by [E. Ross Helton](#) on May 06, 1999 at 21:39:25:

In Reply to: [Re: Protecting data from crashes \[offsubject\]](#) posted by Neal Bridges on May 06, 1999 at 16:38:36:

Hi Neal;

Where is "pilot-xfer" available and does it work just for the Pilot or is it for the emulator program?

>the freely-available "pilot-xfer" for Win95 and Unix that works very
> well indeed, and a commercial product called BackupBuddy that I hear also

Make it a good day!
Ross

Re: Protecting data from crashes [offsubject]

Posted by [Neal Bridges](#) on May 06, 1999 at 22:06:44:

In Reply to: [Re: Protecting data from crashes \[offsubject\]](#) posted by E. Ross Helton on May 06, 1999 at 21:39:25:

> Where is "pilot-xfer" available and does it work just for the Pilot or is it
> for
> the emulator program?

Since this gets asked fairly often, I've put a link to Pilot-Xfer in the "Online Resources" section of the Quartus Forth manual -- check the online version at the link below.

With the pilot-xfer program, you can take a full backup of everything on your Palm, and then selectively restore whatever you like into the Emulator. I've also found it handy when 'cloning' one Palm to another.

Neal

- ["Online Resources" section of the Quartus Forth manual](#)

Re: Protecting data from crashes [offsubject]

Posted by [E. Ross Helton](#) on May 07, 1999 at 00:49:10:

In Reply to: [Re: Protecting data from crashes \[offsubject\]](#) posted by Neal Bridges on May 06, 1999 at 22:06:44:

Hi Neal;

Thanks for the link. I have downloaded the program and will try it out. Sorry to be ignorant on the subject. I had done a search for it on the web and had turned up nothing.

Make it a good day!

Ross

Re: Protecting data from crashes [offsubject]

Posted by [Neal Bridges](#) on May 07, 1999 at 00:53:52:

In Reply to: [Re: Protecting data from crashes \[offsubject\]](#) posted by E. Ross Helton on May 07, 1999 at 00:49:10:

> Thanks for the link. I have downloaded the program and will try it out.
Sorry
> to be ignorant on the subject. I had done a search for it on the web and had
> turned up nothing.

Glad to help! It's a command-line program, although there's also a graphical front-end available for it -- here's the URL (courtesy of Will Fisher).

Neal

- [Pilot-Xfer graphical front-end for Win9x](#)

Re: Protecting data from crashes [offsubject]

Posted by [Barry Marks](#) on May 06, 1999 at 16:01:49:

In Reply to: [Protecting data from crashes \[offsubject\]](#) posted by Serg Koren on May 06, 1999 at 14:52:17:

> When developing and your system freezes so you have to do a hard-reset; don't
> you feel frustrated that you've lost all your other apps/data? How do people
> recover from this situation, are there any tools short of doing endless
hotsync
> restores?

I've crashed over a dozen times. Maybe 2 dozen. I mean to the point that I had to reset. But every time but one a soft reset was all I needed. Fortunately I stay backed up so even that one hard reset was no problem.

This seems like a very stable system to me.

I do have FlashPro installed, although I haven't used it yet. It does let you keep backup stuff in Flash memory where it's supposed to be safe from a hard reset. I guess you'd have to have FlashPro in flash too if you want to be able to recover on the road.

I've been following the newsgroups about FlashPro and there seems to be some doubt that it is able to handle recovery from a hard reset. Others say it can. I don't know. Anybody know?

Also, someone posted a message today that Palm support in Canada told them that installing FlashPro voids their warranty.

Barry

Re: Protecting data from crashes [offsubject]

Posted by [Carl Jacobsen](#) on May 07, 1999 at 23:00:59:

In Reply to: [Re: Protecting data from crashes \[offsubject\]](#) posted by Barry Marks on May 06, 1999 at 16:01:49:

> I've crashed over a dozen times. Maybe 2 dozen. I mean to the point that I
> had to reset. But every time but one a soft reset was all I needed.
> Fortunately I stay backed up so even that one hard reset was no problem.

While playing around with Quartus, I've crashed my Palm III **many** times (er, *more* than that, actually), always requiring only a soft reset, never losing any data, and always my fault rather than Neal's. My favorite trick so far seems to be doing:

```
some_address 0 c!
```

instead of:

```
some_address 0 SWAP c!
```

(so I end up trying to write on location zero.) I also commonly forget to use S>D or >abs (as appropriate) on values that I'm handing to the operating system, which always ends up making a terrible mess out of the stack :-)

But I'm having a **great** time :-) My "complaint of the day" is that the "Fatal Exception" dialog box that the Palm OS puts up covers much too much territory -- often I've got a bunch of useful debugging output, stack dumps, etc., on the screen when it goes south, and my output is nowhere to be found after I reboot :-)

Oh, if you're resetting much, on OS 3.x, you should be aware that a bug in the OS is re-adding in three default shortcuts to your system every time you reboot. There's a program called dbScan that'll cull out the duplicates for you. The first time I ran it, it cleared out several hundred dups...

> I do have FlashPro installed, although I haven't used it yet. It does let you
> keep backup stuff in Flash memory where it's supposed to be safe from a hard
> reset. ...

You have FlashPro, and your flash isn't completely full? Can I borrow some? Out of my 2.8 Mb, I rarely have over 100k free memory -- there's just too much cool stuff to keep in my Pilot (I'd *like* one of the 8Mb Palm V's, but I'll probably end up going for one of the unauthorized 2->4 Mb upgrades instead, one of these days.)

-- Carl

- [OS 3.x Duplicate Shortcut Problem](#)

Re: Protecting data from crashes

Posted by [Neal Bridges](#) on May 08, 1999 at 15:09:49:

In Reply to: [Re: Protecting data from crashes \[offsubject\]](#) posted by Carl Jacobsen on May 07, 1999 at 23:00:59:

> > I've crashed over a dozen times. Maybe 2 dozen. I mean to the point that I
> > had to reset. But every time but one a soft reset was all I needed.
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>

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> much territory -- often I've got a bunch of useful debugging output, stack
> dumps, etc., on the screen when it goes south, and my output is nowhere to
> be found after I reboot :-)

A hack could be written to reduce the size of the "Fatal Error" box.

> Oh, if you're resetting much, on OS 3.x, you should be aware that a bug in
> the OS is re-adding in three default shortcuts to your system every time
> you reboot. There's a program called dbScan that'll cull out the duplicates
> for you. The first time I ran it, it cleared out several hundred dups...

That's a handy util; I'll have to add a link to the Online Resources page.

Neal

Re: Protecting data from crashes [offsubject]

Posted by [Neal Bridges](#) on May 06, 1999 at 18:23:35:

In Reply to: [Re: Protecting data from crashes \[offsubject\]](#) posted by Barry Marks
on May 06, 1999 at 16:01:49:

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> had to reset. But every time but one a soft reset was all I needed.
> Fortunately I stay backed up so even that one hard reset was no problem.
> This seems like a very stable system to me.

The Quartus Forth kernel is certainly stable, and I regression-test each
new release to confirm its integrity.

Of course, it's possible to write code that crashes the Palm using Forth, C,
assembler, or what-have-you; simply passing Palm OS ROM routines out-of-range

values will often result in Fatal Exceptions -- but almost always, a soft reset brings you up again, without any loss of data. In fact, most Fatal Exceptions can be rebooted by tapping on the on-screen [Reset] button; only about 10% require the reset button in the back of the Palm.

The library file *safe.txt* will catch a number of conditions (division by zero, for instance) that can cause Fatal Exceptions; it's useful during development.

Neal

Re: Protecting data from crashes [offsubject]

Posted by [E. Ross Helton](#) on May 06, 1999 at 17:57:49:

In Reply to: [Re: Protecting data from crashes \[offsubject\]](#) posted by Barry Marks on May 06, 1999 at 16:01:49:

Barry;

I have had the experience you have about soft reboot. Although when I first had my Pilot I thought I had to hard reset to get restarted and I had to learn that not all crashes are totally fatal.

Since working on my latest program I have had to reset about 40 times because of some bad lines. In none of these did I need more than a soft reset. Didn't lose any data, just was irritating. Of course when I learn to program as good as Neal, I will have less problems writing bad code that crashes the Pilot.

Make it a good day!

Ross

> I've crashed over a dozen times. Maybe 2 dozen. I mean to the point that I
> had to reset. But every time but one a soft reset was all I needed.
> Fortunately I stay backed up so even that one hard reset was no problem.

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> reset. I guess you'd have to have FlashPro in flash too if you want to be
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> to recover on the road.

> I've been following the newsgroups about FlashPro and there seems to be some
> doubt that it is able to handle recovery from a hard reset. Others say it
> can. I don't know. Anybody know?

> Also, someone posted a message today that Palm support in Canada told them
that
> installing FlashPro voids their warranty.

> Barry

New Palm/Forth article published!

Posted by [Neal Bridges](#) on May 05, 1999 at 19:48:04:

I've written an article entitled "From Rome to Arabia (with Forth)", published in the May 1999 edition of EXE: The Software Developers' Magazine.

The synopsis:

"Neal Bridges believes Forth is the perfect fit for the Palm Computing platform. To demonstrate this, he walks us through a handheld application -- a calculator for Roman numerals -- from original concept to distribution."

If you're in the UK, EXE magazine should be easy to locate. I'd be interested to know if it's commonly found on the shelves in the States, as I have yet to find it here in Toronto.

EXE's web site is at the link below.

Neal

- [EXE Online](#)

Re: New Palm/Forth article published!

Posted by [E. Ross Helton](#) on May 06, 1999 at 08:44:59:

In Reply to: [New Palm/Forth article published!](#) posted by Neal Bridges on May 05, 1999 at 19:48:04:

Hi Neal;

Well, I guess we will have to salute or bow in your presence now. I've seen Quartus and your name mentioned in a number of places.(all good)

> I've written an article entitled "From Rome to Arabia (with Forth)", published
> in the May 1999 edition of EXE: The Software Developers' Magazine.

Bye the congradulations! I know it isn't easy to get some these things published.

Make it a good day!

Ross

Re: New Palm/Forth article published!

Posted by [Mark Beckman](#) on May 05, 1999 at 20:10:53:

In Reply to: [New Palm/Forth article published!](#) posted by Neal Bridges on May 05, 1999 at 19:48:04:

FWIW I've never seen the magazine on the racks here in Southern California. I guess I'll have to wait until your article makes it into their archives. The synopsis sounds good but the teaser isn't what I would have picked to promote Forth:

"... The murky world of Forth on the Palm. "

"murky" sounds less than flattering.

> I've written an article entitled "From Rome to Arabia (with Forth)", published
> in the May 1999 edition of EXE: The Software Developers' Magazine.

> The synopsis:

> "Neal Bridges believes Forth is the perfect fit for the Palm Computing
> platform. To demonstrate this, he walks us through a handheld application --
> a calculator for Roman numerals -- from original concept to distribution."

> If you're in the UK, EXE magazine should be easy to locate. I'd be interested
> to know if it's commonly found on the shelves in the States, as I have yet to
> find it here in Toronto.

> EXE's web site is at the link below.

> Neal

Re: New Palm/Forth article published!

Posted by [Erwin Schomburg](#) on May 05, 1999 at 23:42:54:

In Reply to: [Re: New Palm/Forth article published!](#) posted by Mark Beckman on May 05, 1999 at 20:10:53:

> FWIW I've never seen the magazine on the racks here in Southern California.
> I guess I'll have to wait until your article makes it into their archives.
> The synopsis sounds good but the teaser isn't what I would have picked to
> promote Forth:

FYI, EXE is (only) available on a subscription base.

35/50/70 GBP a year (UK/Europe/Rest of World)

Hehe, how does it sound to most of you to be classified "Rest of World"?

/Erwin

Re: New Palm/Forth article published!

Posted by [Neal Bridges](#) on May 05, 1999 at 23:44:15:

In Reply to: [Re: New Palm/Forth article published!](#) posted by Erwin Schomburg on May 05, 1999 at 23:42:54:

> > FWIW I've never seen the magazine on the racks here in Southern California.
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> FYI, EXE is (only) available on a subscription base.

> 35/50/70 GBP a year (UK/Europe/Rest of World)

> Hehe, how does it sound to most of you to be classified "Rest of World"?

That's curious. I thought it had a shelf presence in the UK.

Neal

Re: New Palm/Forth article published!

Posted by Erwin on May 06, 1999 at 15:07:55:

In Reply to: [Re: New Palm/Forth article published!](#) posted by Neal Bridges on May 05, 1999 at 23:44:15:

> That's curious. I thought it had a shelf presence in the UK.

> Neal

Not to my knowledge. But now to something completely different: I find the article to be a nice, neat and exhaustive piece of tutorial on how to produce a Quartus application, and with all the cited links to interesting places it could get quite a number of people hooked to Palm Platform and programming for it (in Quartus, of course 8-)).

Although all interested here have seen the raw sources for some time around, some may only now see what makes it all tick.

/Erwin

BTW: How did you coax the Editor to give you that much room?

Re: New Palm/Forth article published!

Posted by [Neal Bridges](#) on May 06, 1999 at 16:40:54:

In Reply to: [Re: New Palm/Forth article published!](#) posted by Erwin on May 06, 1999 at 15:07:55:

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> article to be a nice, neat and exhaustive piece of tutorial on how to produce
> a Quartus application, and with all the cited links to interesting places it
> could get quite a number of people hooked to Palm Platform and programming for
> it (in Quartus, of course 8-)).

Thanks, Erwin! I'm glad to hear it reads well.

> Although all interested here have seen the raw sources for some time around,
> some may only now see what makes it all tick.
> /Erwin

> BTW: How did you coax the Editor to give you that much room?

The question might better be: how did the Editor coax me into making it that short! :)

Neal

Re: New Palm/Forth article published!

Posted by [E. Ross Helton](#) on May 06, 1999 at 15:35:39:

In Reply to: [Re: New Palm/Forth article published!](#) posted by Erwin on May 06, 1999 at 15:07:55:

Hi

I went to the link Neal had given, but it wanted a password and user name. It didn't give anyway to get one. Where can we go to see the article?

Make it a good day!

Ross

> Quartus application, and with all the cited links to interesting places it
> could
> get quite a number of people hooked to Palm Platform and programming for it
> (in
> Quartus, of course 8-)).

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Re: New Palm/Forth article published!

Posted by [Barry Marks](#) on May 06, 1999 at 16:05:34:

In Reply to: [Re: New Palm/Forth article published!](#) posted by E. Ross Helton on May 06, 1999 at 15:35:39:

> I went to the link Neal had given, but it wanted a password and user name. It

> didn't give anyway to get one. Where can we go to see the article?

It did offer a way to get a password. I got one. But the article isn't there. I think it might be there when the next issue comes out.

This is frustrating. I'm working hard to figure out how Duco works and I could really use that article.

Barry

Re: New Palm/Forth article published!

Posted by [Neal Bridges](#) on May 06, 1999 at 18:24:41:

In Reply to: [Re: New Palm/Forth article published!](#) posted by Barry Marks on May 06, 1999 at 16:05:34:

> This is frustrating. I'm working hard to figure out how Duco works and I could

> really use that article.

Ask any questions that come to mind, Barry -- I'm glad to help.

Neal

Re: New Palm/Forth article published!

Posted by Erwin on May 06, 1999 at 17:04:06:

In Reply to: [Re: New Palm/Forth article published!](#) posted by Barry Marks on May 06, 1999 at 16:05:34:

> > I went to the link Neal had given, but it wanted a password and user name.
> It
> > didn't give anyway to get one. Where can we go to see the article?

> It did offer a way to get a password. I got one. But the article isn't
> there. I think it might be there when the next issue comes out.

> This is frustrating. I'm working hard to figure out how Duco works and I
could
> really use that article.

> Barry

Errr, sorry folks, I have an EXE subscription, so I got it with the article in this morning's mail. To see it online you would have to wait two or three months and see if it pleases the Editor to release it in the archive. Maybe Neal has a saying, i.e. an influence on the Editor in this issue?

/Erwin

Re: New Palm/Forth article published!

Posted by [Neal Bridges](#) on May 06, 1999 at 16:44:55:

In Reply to: [Re: New Palm/Forth article published!](#) posted by Barry Marks on May 06, 1999 at 16:05:34:

> > I went to the link Neal had given, but it wanted a password and user name.
> It
> > didn't give anyway to get one. Where can we go to see the article?

> It did offer a way to get a password. I got one. But the article isn't
> there. I think it might be there when the next issue comes out.

> This is frustrating. I'm working hard to figure out how Duco works and I
could
> really use that article.

Hi Barry. If you choose, you can order the issue from EXE directly. Copyright and contract prevent me from distributing the article at this time; perhaps 'allowable use' would permit a copy to be made, though certainly I'm no authority on such things, particularly when international boundaries are in the

equation.

Neal

Re: New Palm/Forth article published!

Posted by [Barry Marks](#) on May 06, 1999 at 18:31:11:

In Reply to: [Re: New Palm/Forth article published!](#) posted by Neal Bridges on May 06, 1999 at 16:44:55:

> Hi Barry. If you choose, you can order the issue from EXE directly.

Copyright

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> authority on such things, particularly when international boundaries are in
the
> equation.

Thanks but I wasn't really complaining. I was venting. :)

I wouldn't ask you for a copy and I wasn't hinting for one. If someone
published my article I'd want to respect their rights, too.

Barry

Re: New Palm/Forth article published!

Posted by [Neal Bridges](#) on May 07, 1999 at 10:25:42:

In Reply to: [Re: New Palm/Forth article published!](#) posted by Barry Marks on May 06, 1999 at 18:31:11:

> > Hi Barry. If you choose, you can order the issue from EXE directly.

> Copyright

> > and contract prevent me from distributing the article at this time; perhaps
> > 'allowable use' would permit a copy to be made, though certainly I'm no
> > authority on such things, particularly when international boundaries are in
> the
> > equation.

> Thanks but I wasn't really complaining. I was venting. :)

> I wouldn't ask you for a copy and I wasn't hinting for one. If someone
> published my article I'd want to respect their rights, too.

Good news -- the editor tells me that the article will be available online June 1st.

Neal

Re: New Palm/Forth article published!

Posted by [Barry Marks](#) on May 08, 1999 at 17:50:40:

In Reply to: [Re: New Palm/Forth article published!](#) posted by Neal Bridges on May 07, 1999 at 10:25:42:

> Good news -- the editor tells me that the article will be available online
June
> 1st.

That is good news. Thanks for asking and letting us know.

Barry

Re: New Palm/Forth article published!

Posted by [Neal Bridges](#) on May 05, 1999 at 20:15:57:

In Reply to: [Re: New Palm/Forth article published!](#) posted by Mark Beckman on May 05, 1999 at 20:10:53:

> FWIW I've never seen the magazine on the racks here in Southern California.
> I guess I'll have to wait until your article makes it into their archives.
> The synopsis sounds good but the teaser isn't what I would have picked to
> promote Forth:

> "... The murky world of Forth on the Palm. "

> "murky" sounds less than flattering.

Yes, it's an odd description -- but Forth has a shadowy background. Most IT professionals haven't even heard of it, and it rarely makes its way into textbooks, even as a casual mention. Doubtless this is what they are alluding to.

Neal

LineFeed and Scroll for text

Posted by [Maurilio Carvalho](#) on May 05, 1999 at 16:25:11:

that's the best way to obtain linefeed and scrolling automation for a text form ?

Re: LineFeed and Scroll for text

Posted by [Neal Bridges](#) on May 05, 1999 at 16:45:38:

In Reply to: [LineFeed and Scroll for text](#) posted by Maurilio Carvalho on May 05, 1999 at 16:25:11:

> that's the best way to obtain linefeed and scrolling automation for a text form
> ?

Quartus Forth provides scrolling and linefeeds automatically, even in generated stand-alone programs.

If your form has a title bar, and you don't want it to be affected by scrolling, you'll need to modify the rectangle data at **window-bounds** after displaying your form, like this:

```
: display-form
myform ShowForm
\ lower top Y coordinate:
15 window-bounds cell+ +!
\ adjust total height of form:
-15 window-bounds 3 cells + +!
page ;
```

Neal

Snippets File Library now open

Posted by [Neal Bridges](#) on May 04, 1999 at 21:06:18:

I've created a new file area called "Quartus Forth Snippets"; I'll put snippets up there as they arise here.

Feel free to point out any snippets in the archives that have proven useful!

Neal

CLS

Posted by [Barry Marks](#) on May 04, 1999 at 19:51:28:

I've been playing with Win32Forth and some of it's tutorials and trying out some of the code in Quartus. I found AT to replace GOTOXY but is there a word in Quartus that will replace the CLS word in Win32Forth? I've been faking it in the meantime with a CLS word that loops to do 25 CR's.

Barry

Re: CLS

Posted by [Neal Bridges](#) on May 04, 1999 at 20:12:03:

In Reply to: [CLS](#) posted by Barry Marks on May 04, 1999 at 19:51:28:

> I've been playing with Win32Forth and some of it's tutorials and trying out
> some of the code in Quartus. I found AT to replace GOTOXY but is there a word
> in Quartus that will replace the CLS word in Win32Forth? I've been faking it
> in the meantime with a CLS word that loops to do 25 CR's.

PAGE is the Standard word to clear the current display. You'll find it clears only the scrollable area; to clear the entire screen use WinErasewindow.

Neal

New Forth app: SCX Calculator

Posted by [Neal Bridges](#) on May 04, 1999 at 12:57:11:

I've written a new shareware app using Quartus Forth, called "SCX". It's a calculator designed specifically with the needs of business/retail people in mind, though it also makes a good general-purpose replacement for the built-in Palm calculator.

Check it out at the link below!

Neal

- [SCX Calculator](#)

Longevity of >abs ?

Posted by [Carl Jacobsen](#) on May 03, 1999 at 23:41:16:

In one of your recent postings, there's a line that says:
event >abs 2constant &event.

Basically precomputing a 32 bit address at compile time, yes? I ask because I'd thought of doing this in a few places in my code, but then became concerned that this wouldn't work if/when the code gets pushed around in memory by the operating system. Or am I missing something?

-- Carl

Re: Longevity of >abs ?

Posted by [Neal Bridges](#) on May 04, 1999 at 00:02:26:

In Reply to: [Longevity of >abs ?](#) posted by Carl Jacobsen on May 03, 1999 at 23:41:16:

> In one of your recent postings, there's a line that says:

> event >abs 2constant &event.

> Basically precomputing a 32 bit address at compile time, yes? I ask
> because I'd thought of doing this in a few places in my code, but then
> became concerned that this wouldn't work if/when the code gets pushed
> around in memory by the operating system. Or am I missing something?

Carl, good catch. That's an evil thing I did there. Always compute >abs at run-time, not at compile-time.

Neal

make sure stack is Zeroed

Posted by [E. Ross Helton](#) on May 03, 1999 at 18:02:40:

Hi;

What is the easiest way to make sure the stack has a value of zero. And what would be a good way to use that in a 'If' statement?

For example I would assum the 'if' statement would be something like:

```
If dup > 0 command ( name of any line I want to activate.
else exit
return ;
```

What I would like to achieve is for this line to goto a certain command as long as the stack is greater than zero. If it isn't then I want it to exit and do something else.

Hope I have been clear in what I am asking.

Make it a good day!

Ross

Re: make sure stack is Zeroed

Posted by [Neal Bridges](#) on May 03, 1999 at 20:48:14:

In Reply to: [make sure stack is Zeroed](#) posted by E. Ross Helton on May 03, 1999 at 18:02:40:

> Hi;

> What is the easiest way to make sure the stack has a value of zero. And what > would be a good way to use that in a 'If' statement?

> For example I would assum the 'if' statement would be something like:

```
> If dup > 0 command ( name of any line I want to activate.
> else exit
> return ;
```

> What I would like to achieve is for this line to goto a certain command as long > as the stack is greater than zero. If it isn't then I want it to exit and do > something else.

> Hope I have been clear in what I am asking.

```
: my-word
0 > if
  do-something
else
  do-something-else
then ;
```

If 'do-something' and 'do-something-else' need the value on the stack, you'll have to DUP it before the '0 >' test.

Neal

Re: make sure stack is Zeroed

Posted by [E. Ross Helton](#) on May 04, 1999 at 07:07:05:

In Reply to: [Re: make sure stack is Zeroed](#) posted by Neal Bridges on May 03, 1999 at 20:48:14:

Hi Neal;

Thanks for the example and the quick reply. However, I guess I didn't totally make myself clear. Is there a way to make sure all the values of the program are set to 'zero' or at least to a specific value when the program is asked to be restarted. For example in most Basic programs, when you use 'run' the values are set to zero and everything begins anew.

Make it a good day!

Ross

> > Hope I have been clear in what I am asking.

```
>
> : my-word
>   0 > if
>     do-something
>   else
>     do-something-else
>   then ;
>
```

> If 'do-something' and 'do-something-else' need the value on the stack, you'll
> have to DUP it before the '0 >' test.

> Neal

Re: make sure stack is Zeroed

Posted by [Neal Bridges](#) on May 04, 1999 at 10:41:26:

In Reply to: [Re: make sure stack is Zeroed](#) posted by E. Ross Helton on May 04, 1999 at 07:07:05:

> Thanks for the example and the quick reply. However, I guess I didn't totally
> make myself clear. Is there a way to make sure all the values of the program
> are set to 'zero' or at least to a specific value when the program is asked to
> be restarted. For example in most Basic programs, when you use 'run' the
values
> are set to zero and everything begins anew.

When you restart a program from the Application Launcher, the values of your variables and other data will be reset to what they were at the time you compiled your stand-alone program. If you wish to restart a stand-alone program from within the program itself, this is a quick way:

```
2variable dbID
variable card
: restart ( -- )
  dbID >abs  card >abs
  SysCurAppDatabase drop
  0. 0 dbID 2@  card @
  SysUIAppSwitch  bye ;
```

One for the snippets library, I think. I'll set that up later today.

Neal

Re: make sure stack is Zeroed

Posted by [E. Ross Helton](#) on May 04, 1999 at 11:52:14:

In Reply to: [Re: make sure stack is Zeroed](#) posted by Neal Bridges on May 04, 1999 at 10:41:26:

Hi Neal;

Thanks! You gave me an idea for something I hadn't even thought about in my program. I knew I could reset the values with the Application Launcher, but I was having a problem restarting in the program itself.

Again thanks!

Make it a good day!

Ross

```
> When you restart a program from the Application Launcher, the values of your
> variables and other data will be reset to what they were at the time you
> compiled your stand-alone program. If you wish to restart a stand-alone
> program
> from within the program itself, this is a quick way:
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```

>

> One for the snippets library, I think. I'll set that up later today.

> Neal

Re: make sure stack is Zeroed

Posted by [E. Ross Helton](#) on May 04, 1999 at 22:28:41:

In Reply to: [Re: make sure stack is Zeroed](#) posted by E. Ross Helton on May 04, 1999 at 11:52:14:

Hi Neal;

Forgot to ask you does the code below go at the end of the program, or can it be placed anywhere?

Make it a good day!

Ross

> >

```
2variable dbID
```

```
> > variable card
```

```
> >
```

```
> >
```

```
: restart ( -- )
```

```
> > dbID >abs card >abs
```

```
> > SysCurAppDatabase drop
```

```
> > 0. 0 dbID 2@ card @
```

```
> > SysUIAppSwitch bye ;
```

```
> >
```

> > One for the snippets library, I think. I'll set that up later today.

> > Neal

Re: make sure stack is Zeroed

Posted by [Neal Bridges](#) on May 04, 1999 at 22:34:39:

In Reply to: [Re: make sure stack is Zeroed](#) posted by E. Ross Helton on May 04, 1999 at 22:28:41:

> Forgot to ask you does the code below go at the end of the program, or can it be placed anywhere?

As with any Forth word, it must be defined before it is used; aside from that, it can go anywhere, yes.

Neal

LogoHack and Quartus ??

Posted by [Zvlv](#) on May 03, 1999 at 11:14:12:

Greetings to each and everyone,

Running Quartus 1.2.1 on a Palm IIIx (I'm Tech support for Palm Computing), if I have LogoHack installed, if I switch the Palm off, when i turn it back on, NO MATTER what I type, I get back a prompt, whatever I've typed has been erased. It does the same on POSE 2.1d.26. I'm not really bothered by it, however I just wanted to know if you had encountered the same problem.

Sincerely yours,

P.S. : Quartus simply rocks... I'm gonna register it hehehehehe =)

Re: LogoHack and Quartus ??

Posted by [Neal Bridges](#) on May 03, 1999 at 12:16:06:

In Reply to: [LogoHack and Quartus ??](#) posted by Zvlv on May 03, 1999 at 11:14:12:

> Greetings to each and everyone,

> Running Quartus 1.2.1 on a Palm IIIx (I'm Tech support for Palm Computing),
> if I have LogoHack installed, if I switch the Palm off, when i turn it back on,
> NO MATTER what I type, I get back a prompt, whatever I've typed has been erased.

> It does the same on POSE 2.1d.26. I'm not really bothered by it, however I just wanted to know if you had encountered the same problem.

That's curious. I wonder how LogoHack behaves with other applications. I'll

have a look.

> P.S. : Quartus simply rocks... I'm gonna register it hehehehehe =)

Great! :)

Neal

Starting a snippets repository

Posted by [Wayne Carson](#) on May 03, 1999 at 00:42:04:

Has anyone thought about creating a more extensive archive of demos that perform a single function?

I find myself spending a lot of time getting pieces of code to work that most apps would probably use (e.g. how to create and access a menu, how to display a number on the screen, how to create an alert and custom alert). It seems to me that having a single place where you could download a single memo and corresponding resource db which demonstrated one of these tasks would speed things up a lot.

Any thoughts?

Wayne

Re: Starting a snippets repository

Posted by [Neal Bridges](#) on May 03, 1999 at 00:52:20:

In Reply to: [Starting a snippets repository](#) posted by Wayne Carson on May 03, 1999 at 00:42:04:

> Has anyone thought about creating a more extensive archive of demos that perform
> a single function?

> I find myself spending a lot of time getting pieces of code to work that most
> apps would probably use (e.g. how to create and access a menu, how to display a
> number on the screen, how to create an alert and custom alert). It seems to me
> that having a single place where you could download a single memo and
> corresponding resource db which demonstrated one of these tasks would speed
> things up a lot.

> Any thoughts?

It sounds good. I'll set up a new file area for such things; over time I'd like to build them into the manual as part of a general reference.

Neal

Re: Starting a snippets repository

Posted by [Wayne Carson](#) on May 03, 1999 at 12:10:11:

In Reply to: [Re: Starting a snippets repository](#) posted by Neal Bridges on May 03, 1999 at 00:52:20:

I'd be happy to help too. Being new to Forth, my style is probably awkward, but it'd give starting place for later, better replacements.

Wayne

Re: Starting a snippets repository

Posted by [Barry Marks](#) on May 03, 1999 at 10:08:28:

In Reply to: [Re: Starting a snippets repository](#) posted by Neal Bridges on May 03, 1999 at 00:52:20:

I think that's a great idea. I've been reading through these messages and trying to understand the snippets I find in them for a while now. It's been a lot of help, but I don't understand a lot of them yet. Then when I want to go back to one to take a second look, I usually can't find it.

These messages would be a good source of snippets to start with. I don't think I'm qualified yet to pick the worthy ones but I wouldn't mind organizing them in some useful way. Let me know if there's any interest in that.

Barry

> > Has anyone thought about creating a more extensive archive of demos that
> perform
> > a single function?

> > I find myself spending a lot of time getting pieces of code to work that
most

> > apps would probably use (e.g. how to create and access a menu, how to
display

> a

> > number on the screen, how to create an alert and custom alert). It seems to
me

> > that having a single place where you could download a single memo and

> > corresponding resource db which demonstrated one of these tasks would speed
> > things up a lot.

> > Any thoughts?

> It sounds good. I'll set up a new file area for such things; over time I'd like
> to build them into the manual as part of a general reference.
> Neal

POSE import of library source?

Posted by [Dennis Misener](#) on May 02, 1999 at 18:45:28:

I'd like to import the library sources into POSE memoPad.

A utility file called MemoDB.zip was mentioned in earlier in the message base. I can't seem to locate this file.

Any pointer would be appreciated. Any other suggestions on how to imported/export source would be appreciated.
(HOTSYNC is a last resort)

Probably make a nice FAQ entry :-)

Re: POSE import of library source?

Posted by [Neal Bridges](#) on May 02, 1999 at 21:28:01:

In Reply to: [POSE import of library source?](#) posted by Dennis Misener on May 02, 1999 at 18:45:28:

> I'd like to import the library sources into POSE memoPad.

> A utility file called MemoDB.zip was mentioned in earlier in the
> message base. I can't seem to locate this file.

> Any pointer would be appreciated. Any other suggestions on how
> to imported/export source would be appreciated.
> (HOTSYNC is a last resort)

> Probably make a nice FAQ entry :-)

MemoDB.zip in the Quartus Forth File Area/ Library Files. I've provided the link below.

Neal

- [Quartus Forth Library Files](#)

ekey, event loops, event handling, and 42

Posted by [Carl Jacobsen](#) on May 02, 1999 at 17:46:15:

Well, I'm working on my first "real" Quartus app (i.e. something with forms, menus, and all the trimmings), and I must say, the more I work with Quartus, the more impressed I become...

Between O'Reilly's "Palm Programming", Palm's multi-megabyte Acrobat files, and your documentation, Neal, I'm starting to get a handle (uh, no pun intended) on things, but I've still got a number of murky spots in my understanding of what's going on between my program and the Pilot.

In particular, at the moment, I'm trying to give my app the standard cut/copy/paste capabilities. Looking through a number of the Palm OS SDK example C programs, it seems that if one sets up menu choices that have Palm's ID numbers (e.g. sysEditMenuPasteCmd is 10003), it should "just work". And, indeed, it does work with the form in preview mode in RsrcEdit, but not from my Quartus app. I'm guessing that I need to call FrmHandleEvent along the way, to get this to work?

Actually, would it be possible to get a rough outline of what Palm OS systrips are being called by ekey and by the default event handlers that you're setting up? I'm concerned that I'll end up either stomping on something that Quartus is doing, or needlessly duplicating effort.

Oh, okay, and I know that 42 is the answer, but what was the question again?

Thanks,
-- Carl

Re: ekey, event loops, event handling, and 42

Posted by [Neal Bridges](#) on May 02, 1999 at 21:48:25:

In Reply to: [ekey, event loops, event handling, and 42](#) posted by Carl Jacobsen on May 02, 1999 at 17:46:15:

> Well, I'm working on my first "real" Quartus app (i.e. something with
> forms, menus, and all the trimmings), and I must say, the more I work
> with Quartus, the more impressed I become...

Glad to hear that!

> Between O'Reilly's "Palm Programming", Palm's multi-megabyte Acrobat
> files, and your documentation, Neal, I'm starting to get a handle (uh,
> no pun intended) on things, but I've still got a number of murky spots
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> cut/copy/paste capabilities. Looking through a number of the Palm OS

> SDK example C programs, it seems that if one sets up menu choices that
> have Palm's ID numbers (e.g. sysEditMenuPasteCmd is 10003), it should
> "just work". And, indeed, it does work with the form in preview mode
> in RsrcEdit, but not from my Quartus app. I'm guessing that I need to
> call FrmHandleEvent along the way, to get this to work?

Let me check into that. You're right, that's the 'cheap and easy' way to add
cut and paste to your fields. I'll see what I have to adjust to allow it to
occur as part of Quartus Forth's normal event handling, to save you from having
to dance around to accomodate it.

> Actually, would it be possible to get a rough outline of what Palm OS
> sysstraps are being called by ekey and by the default event handlers
> that you're setting up? I'm concerned that I'll end up either stomping
> on something that Quartus is doing, or needlessly duplicating effort.

Sure, here's a rough outline in Forth pseudo-code. NOTE: This is just an
outline intended to show the structure and high-level flow, and is not working
code.

```
: ekey ( -- event )
  begin
    EvtGetEvent
    SysHandleEvent
    dup 0= if MenuHandleEvent
      dup 0= if FrmDispatchEvent then
        then
      0= until
    event @ ;
```

> Oh, okay, and I know that 42 is the answer, but what was the question again?
6x7, as I recall. :)

Neal

Re: ekey, event loops, event handling, and 42

Posted by [Carl Jacobsen](#) on May 04, 1999 at 17:40:42:

In Reply to: [Re: ekey, event loops, event handling, and 42](#) posted by Neal
Bridges on May 02, 1999 at 21:48:25:

> > ... I'm trying to give my app the standard
> > cut/copy/paste capabilities. ...
> > ... it seems that if one sets up menu choices that
> > have Palm's ID numbers (e.g. sysEditMenuPasteCmd is 10003), it should
> > "just work". ... I'm guessing that I need to
> > call FrmHandleEvent along the way, to get this to work?

>
> Let me check into that. You're right, that's the 'cheap and easy' way to add

```
> cut and paste to your fields. I'll see what I have to adjust to allow it to
> occur as part of Quartus Forth's normal event handling, to save you from
> having to dance around to accomodate it.
```

Well, I've done a bit more playing around, and find that I can, indeed, make FrmHandleEvent do the work for me; I'm doing something like this:

```
    DUP menuEvent = IF
    event >abs itemid
    cond DUP OptPrefMitmID = IF
    do-pref-dialog
    ELSE DUP OptAboutMitmID = IF
    AboutAlertID FrmAlert DROP
ELSE
  \ let OS handle edit menu
  event >abs FrmGetActiveForm FrmHandleEvent DROP
  thens DROP
ELSE
  ...
```

I don't know yet whether this constitutes a minor abuse of FrmHandleEvent, but I'm calling it at a point where a) the event is known to be a menuEvent, and b) I've handled all "my" menu items, so the system's Undo/Edit/Cut/Copy/Paste/Keyboard/GrafittiHelp items are the only ones left.

```
> > Oh, okay, and I know that 42 is the answer, but what was the question again?
> 6x7, as I recall. :)
```

Er, 6x9, actually... Go figure :-)

-- Carl

Re: 42 explained

Posted by [Doug](#) on May 06, 1999 at 12:27:24:

In Reply to: [Re: ekey, event loops, event handling, and 42](#) posted by Carl Jacobsen on May 04, 1999 at 17:40:42:

```
> > > Oh, okay, and I know that 42 is the answer, but what was the question
again?
```

```
> > 6x7, as I recall. :)
```

```
> Er, 6x9, actually... Go figure :-)
```

```
> -- Carl
```

the comment made by Arthur after the 6x9=42 thing with the 'caveman' was that (paraphrased) 'there was something basically wrong with the universe', hence MS=GPF.

Re: 42 explained

Posted by [Neal Bridges](#) on May 06, 1999 at 21:13:53:

In Reply to: [Re: 42 explained](#) posted by Doug on May 06, 1999 at 12:27:24:

> > > > Oh, okay, and I know that 42 is the answer, but what was the question
> again?

> > > 6x7, as I recall. :)

> > Er, 6x9, actually... Go figure :-)

> the comment made by Arthur after the 6x9=42 thing with the 'caveman'
> was that (paraphrased) 'there was something basically wrong with the
> universe', hence MS=GPF.

Ah yes. They determined the question by drawing Scrabble pieces from a bag. As
I recall the answer was spelled out in letters --
"WHATDOYOUGETWHENYOUMULTIPLYSIXBYNINE".

Neal

Re: ekey, event loops, event handling, and 42

Posted by [Neal Bridges](#) on May 06, 1999 at 10:25:40:

In Reply to: [Re: ekey, event loops, event handling, and 42](#) posted by Carl
Jacobsen on May 04, 1999 at 17:40:42:

> Well, I've done a bit more playing around, and find that I can, indeed, make
> FrmHandleEvent do the work for me; I'm doing something like this:

```
> DUP menuEvent = IF
> event >abs itemid
> cond DUP OptPrefMitmID = IF
> do-pref-dialog
> ELSE DUP OptAboutMitmID = IF
> AboutAlertID FrmAlert DROP
> ELSE
> \ let OS handle edit menu
> event >abs FrmGetActiveForm FrmHandleEvent DROP
> thens DROP
> ELSE
> ...
```

> I don't know yet whether this constitutes a minor abuse of FrmHandleEvent,
> but I'm calling it at a point where a) the event is known to be a menuEvent,
> and b) I've handled all "my" menu items, so the system's Undo/Edit/Cut/Copy/
> Paste/Keyboard/GrafittiHelp items are the only ones left.

Good show, Carl. That looks fine.

Neal

accessing the hard-button events

Posted by [Ian Redmond](#) on May 02, 1999 at 09:46:43:

Neal,
How would you suggest intercepting system events caused by pressing the four application buttons, these events being sent to the system event handler by 'ekey' ?

Thanks, Ian.

Example: accessing the hard-button events

Posted by [Neal Bridges](#) on May 02, 1999 at 12:31:27:

In Reply to: [accessing the hard-button events](#) posted by Ian Redmond on May 02, 1999 at 09:46:43:

> Neal,
> How would you suggest intercepting system events caused by pressing the four
> application buttons, these events being sent to the system event handler by
> 'ekey' ?

You can grab your own events using EvtGetEvent, as shown here:

needs Events
needs toolkit

50. 2constant timeout.

event >abs 2constant &event.

```
: hardkey? ( -- flag )  
  event @ keyDownEvent =  
  &event. itemid  
  (hex) 0204 (hex) 0208 within  
  and ;
```

```
: my-ekey ( -- event )  
  timeout. &event. EvtGetEvent  
  hardkey? 0= if HandleEvent then  
  event @ ;
```

This new word **my-ekey** will pass hard key events as normal character events.

Neal

Example code: Saving and restoring application data

Posted by [Neal Bridges](#) on May 01, 1999 at 20:21:23:

Here's a snippet from one of my apps that shows the saving and restoring of application data between invocations.

```
needs ids
(id) MyID 2constant crid
here constant prefs
\ define your variables here
variable a
variable b
variable c
\ initialize variables with working startup values
4 a !
5 b !
6 c !
here prefs - constant prefsiz
: get-stored ( -- bool )
  prefsiz prefs >abs 1 crid
  PrefGetAppPreferencesV10 ;
: set-stored ( -- )
  prefsiz prefs >abs 1 crid
  PrefSetAppPreferencesV10 ;
...
: main ( -- )
  get-stored if
    \ stored values retrieved
  else
    \ no stored values available
  then
    ...
;
-257 constant byeThrow
: go ( -- )
  ['] main catch
  \ If the application is exiting,
  \ store settings:
  dup byeThrow = if set-stored then
  throw ;
```

Neal

Re: Example code: Saving and restoring application data

Posted by [Steve Gibson](#) on May 02, 1999 at 15:30:12:

In Reply to: [Example code: Saving and restoring application data](#) posted by Neal Bridges on May 01, 1999 at 20:21:23:

> Here's a snippet from one of my apps that shows the saving and restoring of
> application data between invocations.

>

needs ids

> (id) MyID 2constant crid

>

>

here constant prefs

> \ define your variables here

> variable a

> variable b

> variable c

> \ initialize variables with working startup values

> 4 a !

> 5 b !

> 6 c !

> here prefs - constant prefsiz

>

Neal, one problem I'm still having is with my string buffers. I've defined a couple with 'CREATE mystr 40 chars allot' etc...The variables and fvariables store and load perfectly, but when I try to load my strings into fields after grabbing the stored prefs, I'm getting error beeps (one for each field) then all my other variables and fvariables load without a hitch. Does CREATE not allocate a chunk of memory in the same way that VARIABLE does? Is there another way I should be saving strings to prefs?

Re: Example code: Saving and restoring application data

Posted by [Neal Bridges](#) on May 02, 1999 at 21:30:15:

In Reply to: [Re: Example code: Saving and restoring application data](#) posted by Steve Gibson on May 02, 1999 at 15:30:12:

> Neal, one problem I'm still having is with my string buffers. I've defined a
> couple with 'CREATE mystr 40 chars allot' etc...The variables and fvariables
> store and load perfectly, but when I try to load my strings into fields after
> grabbing the stored prefs, I'm getting error beeps (one for each field) then
> all
> my other variables and fvariables load without a hitch. Does CREATE not
> allocate a chunk of memory in the same way that VARIABLE does? Is ther
> another
> way I should be saving strings to prefs?

CREATE and VARIABLE both allocate data space in the same way.

Are your string buffers CREATED and ALLOTEd between the two CONSTANT definitions in the sample snippet I provided?

Neal

Re: Example code: Saving and restoring application data

Posted by [Steve Gibson](#) on May 02, 1999 at 23:46:54:

In Reply to: [Re: Example code: Saving and restoring application data](#) posted by Neal Bridges on May 02, 1999 at 21:30:15:

> > Neal, one problem I'm still having is with my string buffers. I've defined
> a
> > couple with 'CREATE mystr 40 chars allot' etc...The variables and fvariables
> > store and load perfectly, but when I try to load my strings into fields
> after
> > grabbing the stored prefs, I'm getting error beeps (one for each field) then
> all
> > my other variables and fvariables load without a hitch. Does CREATE not
> > allocate a chunk of memory in the same way that VARIABLE does? Is ther
> another
> > way I should be saving strings to prefs?

> CREATE and VARIABLE both allocate data space in the same way.

> Are your string buffers CREATED and ALLOTEd between the two CONSTANT

definitions

> in the sample snippet I provided?

Yes, they are. Hmm...do they have to be initialized with some value, the way the variables and fvariables are? I'll do some more poking around.

-Steve

Re: Example code: Saving and restoring application data

Posted by [Neal Bridges](#) on May 03, 1999 at 00:19:56:

In Reply to: [Re: Example code: Saving and restoring application data](#) posted by Steve Gibson on May 02, 1999 at 23:46:54:

> > Are your string buffers CREATED and ALLOTed between the two CONSTANT
> definitions
> > in the sample snippet I provided?

> Yes, they are. Hmm...do they have to be initialized with some value, the way
> the variables and fvariables are? I'll do some more poking around.

Any variables you use should be initialized, whether through having a default value stored in them during compilation, or during the application startup.

Perhaps you can post or mail me a code snippet; sounds like something more easily diagnosed that way.

Neal

Re: Example code: Saving and restoring application data

Posted by [Steve Gibson](#) on May 03, 1999 at 10:14:29:

In Reply to: [Re: Example code: Saving and restoring application data](#) posted by Neal Bridges on May 03, 1999 at 00:19:56:

> Any variables you use should be initialized, whether through having a default
> value stored in them during compilation, or during the application startup.

Okay, maybe that has something to do with it. I wasn't initializing the string buffers with any values.

> Perhaps you can post or mail me a code snippet; sounds like something more

> easily diagnosed that way.

Here're the code snippets that seem relevant:

```
needs manylibs
needs ...
```

```
(id) AICc 2constant crid
```

```
here constant prefs
```

```
create buffer1 20 chars allot
create buffer2 40 chars allot
variable var1
variable var2
fvariable fvar1
fvariable fvar2
variable buff1len
variable buff2len
\ plus many more fvars...
```

```
\ I wasnt init'ing buffers
0 var1 !
0 var2 !
0e fvar1 f!
0e fvar2 f!
0 buff1len !
0 buff2len !
\ the rest of the fvars init'd here
```

```
here prefs - constant prefsiz
```

```
: loadMain
buffer1 buff1Field string>field drop
buffer2 buff2Field string>field drop
\ vars & fvars loaded here -- this works fine
;
```

```
: getMain
FrmSetActiveForm MainForm FrmGetFormPtr
buffer1 buff1Field field>string buff1len ! \ buff{1,2}len unused but just incase
buffer2 buff2Field field>string buff2len ! \ they are needed later, I save them
\ get other field values from fields and put them in vars & fvars
;
```

```
: getPrefs
prefsiz prefs >abs 1 crid PrefGetAppPreferecesV10
;
```

```
: setPrefs
prefsiz prefs >abs 1 crid PrefSetAppPreferecesV10
;
```

```
: show-main
getPrefs drop
MainForm ShowForm
```

```
loadMain
;

: do-event
\ event loop to trap button/menu actions
;

: (go) show-main
begin ekey do-event again
;

: go
['] (go) catch
byeThrow = if
setPrefs (bye)
then
;
;
```

When the app starts, I get error beeps when it is trying to load the first two fields (the string buffers). I thought maybe it was because they weren't initialized, but even after I put a value in the field and then quit the app, which should then populate those buffers, they still give error beeps when I restart the app.

Re: Example code: Saving and restoring application data

Posted by [Neal Bridges](#) on May 03, 1999 at 10:58:17:

In Reply to: [Re: Example code: Saving and restoring application data](#) posted by Steve Gibson on May 03, 1999 at 10:14:29:

```
> When the app starts, I get error beeps when it is trying to load the first two
> fields (the string buffers). I thought maybe it was because they weren't
> initialized, but even after I put a value in the field and then quit the app,
> which should then populate those buffers, they still give error beeps when I
> restart the app.
```

I suspect the problem may lie in that the string coming from field>string is not zero-delimited, and hence is giving you an error beep. One easy way around this would be to do a

```
buffer1 20 chars 0 fill
buffer2 40 chars 0 fill
```

in getMain before you copy the data from your fields. Give that a try.

Neal

Re: Example code: Saving and restoring application data

Posted by [Steve Gibson](#) on May 03, 1999 at 14:41:13:

In Reply to: [Re: Example code: Saving and restoring application data](#) posted by Neal Bridges on May 03, 1999 at 10:58:17:

> > When the app starts, I get error beeps when it is trying to load the first two
> > fields (the string buffers). I thought maybe it was because they weren't
> > initialized, but even after I put a value in the field and then quit the app,
> > which should then populate those buffers, they still give error beeps when I
> > restart the app.

> I suspect the problem may lie in that the string coming from field>string is not
> zero-delimited, and hence is giving you an error beep. One easy way around this
> would be to do a

```
> buffer1 20 chars 0 fill  
> buffer2 40 chars 0 fill
```

> in getMain before you copy the data from your fields. Give that a try.

Actually, it turned out it was something else... I had thought that when I called one of the string buffer words, that it placed both the address AND the string length on the stack. Not sure why I was under that assumption. I think it was because i had been messing around with defining words based on s" and whenever I called one of those words, it place the address AND the string length on the stack.

Well, anyway, calling the string buffers wasn't doing that. They were only placing the address on the stack, which appears to be the correct behavior now that I've gone back and done some tests in the interpreter.

To fix this, all I had to do was use the buff1len and buff2len variables that I was saving the string lengths to (during the field>string calls that loaded the buffers), insert the buff{1,2}len @ in the proper places, and all is well.

Thanks for sharing the nifty trick with the prefs and prefsiz constants!

-Steve

Re: Example code: Saving and restoring application data

Posted by Steve Gibson on May 03, 1999 at 10:22:08:

In Reply to: [Re: Example code: Saving and restoring application data](#) posted by Steve Gibson on May 03, 1999 at 10:14:29:

```
> : go
> [''] (go) catch
> byeThrow = if
getMain
> setPrefs (bye)
> then
> ;
```

I failed to put the "getMain" word in the previous post in...I stuck it in where it goes...

Re: Example code: Saving and restoring application data

Posted by [Steve Gibson](#) on May 02, 1999 at 08:41:53:

In Reply to: [Example code: Saving and restoring application data](#) posted by Neal Bridges on May 01, 1999 at 20:21:23:

```
> Here's a snippet from one of my apps that shows the saving and restoring of
> application data between invocations.
```

Neal, this works for me! Thanks! I was stuck on the idea that I had to pass my values as a struct.

-Steve

Re: Example code: Saving and restoring application data

Posted by [Barry Marks](#) on May 02, 1999 at 00:41:50:

In Reply to: [Example code: Saving and restoring application data](#) posted by Neal Bridges on May 01, 1999 at 20:21:23:

```
>
here constant prefs
> \ define your variables here
> variable a
> variable b
> variable c
> \ initialize variables with working startup values
> 4 a !
> 5 b !
> 6 c !
> here prefs - constant prefs size
>
```

I don't understand exactly what this does. At first I thought that prefs was defined just to let you calc prefs size and the real prefs were the variables. But then you pass the absolute address of prefs. I guess that makes for a 4 cell field but won't the first cell be accessed by using just it's name and the other 3 cells need @?

Do I misunderstand or does that just not matter?

Barry

Re: Example code: Saving and restoring application data

Posted by [Neal Bridges](#) on May 02, 1999 at 00:59:28:

In Reply to: [Re: Example code: Saving and restoring application data](#) posted by Barry Marks on May 02, 1999 at 00:41:50:

```
> > here constant prefs
> > \ define your variables here
> > variable a
> > variable b
> > variable c
> > \ initialize variables with working startup values
> > 4 a !
```

```
> > 5 b !  
> > 6 c !  
> > here prefs - constant prefs size
```

```
> I don't understand exactly what this does. At first I thought that prefs was  
> defined just to let you calc prefs size and the real prefs were the variables.  
> But then you pass the absolute address of prefs. I guess that makes for a 4  
> cell field but won't the first cell be accessed by using just it's name and  
the  
> other 3 cells need @?
```

prefs and **prefs size** are defined only to tell **get-stored** and **set-stored** what area of data space to save and restore. It's a neat trick; all the variables defined between

here constant prefs

and

here prefs - constant prefs size

will automatically be saved and restored by **set-stored** and **get-stored**.

Neal

Re: Example code: Saving and restoring application data

Posted by [Barry Marks](#) on May 02, 1999 at 16:22:00:

In Reply to: [Re: Example code: Saving and restoring application data](#) posted by Neal Bridges on May 02, 1999 at 00:59:28:

```
> prefs and prefs size are defined only to tell get-stored  
and  
> set-stored what area of data space to save and restore. It's a neat  
> trick; all the variables defined between
```

```
> here constant prefs
```

```
> and
```

```
> here prefs - constant prefs size
```

```
> will automatically be saved and restored by set-stored and  
> get-stored.
```

I'm still confused. The 3 variables are 6 bytes long if I'm not mistaken. Since it's a fixed size why is the trick needed? Why not just make a 6 byte array and pass its address and a length of 6?

Also I read in the docs about PrefGetAppPreferences and it says 2 calls are

usually needed. One to determine the buffer size needed and one to retrieve the data. But I don't see any of that here. Is it that the app knows its preference size?

Barry

Re: Example code: Saving and restoring application data

Posted by [Neal Bridges](#) on May 02, 1999 at 21:36:05:

In Reply to: [Re: Example code: Saving and restoring application data](#) posted by Barry Marks on May 02, 1999 at 16:22:00:

```
> > prefs and prefsize are defined only to tell get-stored
> and
> > set-stored what area of data space to save and restore. It's a neat
> > trick; all the variables defined between
> > here constant prefs
> > and
> > here prefs - constant prefsiz
```

```
> > will automatically be saved and restored by set-stored and
> > get-stored.
```

```
> I'm still confused. The 3 variables are 6 bytes long if I'm not mistaken.
> Since it's a fixed size why is the trick needed? Why not just make a 6 byte
> array and pass its address and a length of 6?
```

The trick isn't needed, per se -- it's just really really handy. Once you've got your program working, you simply decide which variables and other data objects you'd like to preserve between invocations, and move their declarations between the two CONSTANT lines, as shown, and add appropriate get-stored and set-stored commands to your application, and you're off. You don't have to worry about figuring out how many bytes your variables (etc.) occupy, and no other changes to your source are required.

```
> Also I read in the docs about PrefGetAppPreferences and it says 2 calls are
> usually needed. One to determine the buffer size needed and one to retrieve
> the data. But I don't see any of that here. Is it that the app knows its
> preference size?
```

When using the technique I showed, a buffer of the right size will automatically pre-exist in dataspace as part of your compiled app, so you don't need to worry about allocating it dynamically. The saved values are read back into memory at the same address they came from.

Neal

Re: Example code: Saving and restoring application data

Posted by [Barry Marks](#) on May 02, 1999 at 22:19:30:

In Reply to: [Re: Example code: Saving and restoring application data](#) posted by Neal Bridges on May 02, 1999 at 21:36:05:

Thanks. Now it makes sense. In masm it would be \$-prefs.

Barry

Code for saving app prefs adds 15k to .prc

Posted by [Steve Gibson](#) on May 01, 1999 at 19:58:05:

When I compile my app with the PrefSetAppPreferencesV10 and PrefGetAppPreferencesV10 system calls, the size of the resulting .prc is 35k instead of only 20k when I have that portion of code commented out. I'm trying to use them to pass a struct that consists of about 25 fields, mostly floats. Not only is the app size dramatically larger, but it isn't saving the preference data in the Saved Preferences database. Also, whenever the system call is made, the application immediately quits to the launcher. If I try to enable the GetPrefs portion of code, which is called at application startup, the application launches and then immediately quits to the launcher.

I'm about to wave the white flag and blow off trying to maintain application state between invocations...

Re: Code for saving app prefs adds 15k to .prc

Posted by [Neal Bridges](#) on May 01, 1999 at 20:06:55:

In Reply to: [Code for saving app prefs adds 15k to .prc](#) posted by Steve Gibson on May 01, 1999 at 19:58:05:

> When I compile my app with the PrefSetAppPreferencesV10 and
> PrefGetAppPreferencesV10 system calls, the size of the resulting .prc is 35k
> instead of only 20k when I have that portion of code commented out. I'm
trying
> to use them to pass a struct that consists of about 25 fields, mostly floats.

> Not only is the app size dramatically larger, but it isn't saving the preference data in the Saved Preferences database. Also, whenever the system call is made, the application immediately quits to the launcher. If I try to enable the GetPrefs portion of code, which is called at application startup, the application launches and then immediately quits to the launcher.

> I'm about to wave the white flag and blow off trying to maintain application state between invocations...

Hi Steve. It's straightforward to save state between invocations -- just wrote an app that does it, myself. I'm sure we can sort out the problem. To figure out what's happening with your app, I'll need to see some code, or excerpts thereof.

Neal

dialer and/or ip stack in Forth?

Posted by [Bob Downs](#) on April 30, 1999 at 23:22:46:

Has anyone done work on internet access applications with the palm pilot in Forth?

Suggestions appreciated.

Re: dialer and/or ip stack in Forth?

Posted by [Neal Bridges](#) on May 01, 1999 at 00:00:46:

In Reply to: [dialer and/or ip stack in Forth?](#) posted by Bob Downs on April 30, 1999 at 23:22:46:

> Has anyone done work on internet access applications with the palm pilot in Forth?

> Suggestions appreciated.

Hi, Bob. I haven't had any call to try it yet myself, but there should be no technical obstacles to using the TCP/IP stack from within Quartus Forth. I'm happy to support any efforts in that direction.

Neal

setLabel

Posted by [Carl Jacobsen](#) on April 30, 1999 at 02:49:35:

Do you have any hints for using setLabel? I've tried using it on an otherwise blank label field, and can't seem to get it to work (the program runs fine, I just get no output on the label).

I want to have an output only field (the first of many, I'm sure), i.e. one that you can't click into, but I can print on. I've got a tweaked up version of string>Field that will cheerfully modify non-editable fields (it sets the edit attribute, does what string>Field normally does, and then restores the edit attribute; this trick is used in some of the Palm OS SDK sample programs), but I ran across a reference in the archives of somebody asking for just such a thing, where replied "why not just use a label?".

So, I'm wondering a) what do you see as being the relative merits of using non-editable fields for output vs. writing output into/over labels, and, b) are there any particular gotchas to watch out for in using setLabel?

Thanks,
-- Carl

Re: setLabel

Posted by [Neal Bridges](#) on April 30, 1999 at 10:33:45:

In Reply to: [setLabel](#) posted by Carl Jacobsen on April 30, 1999 at 02:49:35:

> So, I'm wondering a) what do you see as being the relative merits
> of using non-editable fields for output vs. writing output into/over
> labels, and, b) are there any particular gotchas to watch out for in
> using setLabel?

setLabel in Forms.txt uses the Palm OS function CtlSetLabel.

I dug this up in Ref1.pdf (part of the 3Com SDK):

"CtlSetLabel:

Return the current value (on or off) of the specified control. This function is valid only for push buttons and check boxes. The return value is undefined for other control types."

Instead, use FrmCopyLabel. The target label must be at least long enough to hold the string you're passing. Here's a rough sketch:

needs Forms

```
: HideObject ( id -- )  
  GetObjectIndex
```

```
FrmGetActiveForm FrmHideObject ;
: ShowObject ( id -- )
  GetObjectIndex
  FrmGetActiveForm FrmShowObject ;
: ChangeLabel ( &zstring. id -- )
  dup >r HideObject
  FrmGetActiveForm FrmCopyLabel
  r> ShowObject ;
: demo
  ...
  z" Hello" drop >abs myLabelID ChangeLabel ;
```

Neal

Re: setLabel

Posted by [Carl Jacobsen](#) on May 02, 1999 at 17:59:26:

In Reply to: [Re: setLabel](#) posted by Neal Bridges on April 30, 1999 at 10:33:45:

```
> SetLabel in Forms.txt uses the Palm OS function CtlSetLabel.
> ...
> Instead, use FrmCopyLabel. The target label must be at least long enough
> to hold the string you're passing. ...
```

Ah, okay, I plead temporary insanity, was confusing labels in forms with control labels. I've done a bunch more reading of source code, and I think I'm gonna go with doing output on non-editable fields, rather than on labels; I know that the trick with labels works, but I am a little leary that it doesn't use the available resources in quite the way they were intended.

Plus, it seems like an easy way to get in trouble, if one fails to put enough blanks in the label in RsrcEdit...

I'm trying to do all the bits of this first program "The Right Way", so I can use it as a base for later apps; I'll deal with optimizing as necessary later...

Thanks for all the help and sample code,
-- Carl

Exception 103 ?

Posted by [Carl Jacobsen](#) on April 29, 1999 at 18:01:35:

I'm trying to generate a standalone executable for a program that runs fine from within Quartus, and I'm getting an "Exception 103" dialog from (presumably) MakePRC. I've tried looking it up in the Palm OS error list, to no avail. Any suggestions?

I'm rather low on memory (about 30k free), but the app is small, and Quartus ought to be content with its Workspace database and the heap, right? This app uses forms, etc., but I've successfully generated standalone apps from other small test apps that use forms. And I've tried commenting out the copyrsrc and delrsrc lines to see if they're causing trouble (with the understanding that the resultant executable would be unusable), but I still get the same exception.

Indeed, I just tried building another small standalone app, and that worked, but the one in question here still produces "Exception 103".

I'll happily send you the source and resources if its of any help, rather than dumping it all in here...

Thanks,
-- Carl

Re: Exception 103 ?

Posted by [Neal Bridges](#) on April 29, 1999 at 21:41:59:

In Reply to: [Exception 103 ?](#) posted by Carl Jacobsen on April 29, 1999 at 18:01:35:

> I'm trying to generate a standalone executable for a program that
> runs fine from within Quartus, and I'm getting an "Exception 103"
> dialog from (presumably) MakePRC. I've tried looking it up in
> the Palm OS error list, to no avail. Any suggestions?

> I'm rather low on memory (about 30k free), but the app is small,
> and Quartus ought to be content with its Workspace database and
> the heap, right? This app uses forms, etc., but I've successfully
> generated standalone apps from other small test apps that use forms.
> And I've tried commenting out the copyrsrc and delrsrc lines to see
> if they're causing trouble (with the understanding that the resultant
> executable would be unusable), but I still get the same exception.

> Indeed, I just tried building another small standalone app, and that
> worked, but the one in question here still produces "Exception 103".

> I'll happily send you the source and resources if its of any help,
> rather than dumping it all in here...

That error indicates that Quartus Forth couldn't create the target code segment; it's very likely due to the extreme shortage of memory on your Palm. Try temporarily removing an application to make some space, see if that helps. If you're getting the same error with more free space, at that point I'd like to see the sources.

Neal

Re: Exception 103 ?

Posted by [Carl Jacobsen](#) on April 30, 1999 at 02:47:09:

In Reply to: [Re: Exception 103 ?](#) posted by Neal Bridges on April 29, 1999 at 21:41:59:

> > I'm trying to generate a standalone executable for a program that
> > runs fine from within Quartus, and I'm getting an "Exception 103"
> > dialog ...

>
> That error indicates Quartus Forth couldn't create the target code segment;
> it's very likely due to the extreme shortage of memory on your Palm. Try
> temporarily removing an application to make some space, see if that helps.

Thanks, Neal, right on target. One copy of zork1 later, it compiles just fine. I was thrown off the trail because other programs would compile, but I guess this one is just a bit bigger.

Thanks again,
-- Carl

RPN PopUp Calculator

Posted by [Neal Bridges](#) on April 28, 1999 at 16:35:54:

Have a look at the software at the link below -- it's a pop-up calculator that works in a very Forth-like fashion.

Neal

- [RPN PopUp Calculator](#)

Re: RPN PopUp Calculator

Posted by [George Fischer](#) on April 30, 1999 at 09:03:20:

In Reply to: [RPN PopUp Calculator](#) posted by Neal Bridges on April 28, 1999 at 16:35:54:

> Have a look at the software at the link below -- it's a pop-up calculator that
> works in a very Forth-like fashion.

> Neal

One of the features to note is the debugging tool- it allows you to step through user-programmed stack functions one at a time, with a view of all the values in the stack.

Re: RPN PopUp Calculator

Posted by [Neal Bridges](#) on April 30, 1999 at 09:53:06:

In Reply to: [Re: RPN PopUp Calculator](#) posted by George Fischer on April 30, 1999 at 09:03:20:

> > Have a look at the software at the link below -- it's a pop-up calculator that

> > works in a very Forth-like fashion.

> > Neal

> One of the features to note is the debugging tool- it allows you to step through

> user-programmed stack functions one at a time, with a view of all the values in

> the stack.

The pop-up calculator is a simple interpreter, to which it's trivial to add such a single-step facility; with a true native-code compiler such as Quartus Forth, it's somewhat more difficult.

However, I'm working on adding a single-step facility to Quartus Forth version 2!

Neal

Re: RPN PopUp Calculator

Posted by [George Fischer](#) on April 30, 1999 at 14:08:45:

In Reply to: [Re: RPN PopUp Calculator](#) posted by Neal Bridges on April 30, 1999 at 09:53:06:

> The pop-up calculator is a simple interpreter, to which it's trivial to add such
> a single-step facility; with a true native-code compiler such as Quartus Forth,
> it's somewhat more difficult.

> However, I'm working on adding a single-step facility to Quartus Forth version
> 2!

> Neal

Hey, I wasn't complaining about Quartus! It's just that I'm new to these kind of complex stack operations, and the BREAK command on RPN popup helped me focus on exactly what was happening, and it is giving me good practice for developing the right kind of habits for keeping track of the stack. I'm using it as a kind of trainer to help get me up to the big league, Quartus.

Re: RPN PopUp Calculator

Posted by [Neal Bridges](#) on April 30, 1999 at 14:23:54:

In Reply to: [Re: RPN PopUp Calculator](#) posted by George Fischer on April 30, 1999 at 14:08:45:

> > The pop-up calculator is a simple interpreter, to which it's trivial to add
> such
> > a single-step facility; with a true native-code compiler such as Quartus
> Forth,
> > it's somewhat more difficult.

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> Hey, I wasn't complaining about Quartus! It's just that I'm new to these kind
of
> complex stack operations, and the BREAK command on RPN popup helped me focus
on
> exactly what was happening, and it is giving me good practice for developing
the
> right kind of habits for keeping track of the stack. I'm using it as a kind of

> trainer to help get me up to the big league, Quartus.

Didn't take it as a complaint, George, but thanks.

I've always found that the easiest way to keep track of the stack is not to keep too much on it at any given time. They say the human brain can remember 7 short-term things, plus-or-minus 3; with me I think it's more like 3, plus-or-minus 4. :)

Neal

Re: RPN PopUp Calculator

Posted by [Barry Marks](#) on April 29, 1999 at 15:01:29:

In Reply to: [RPN PopUp Calculator](#) posted by Neal Bridges on April 28, 1999 at 16:35:54:

That's too small for my old eyes. It's a nice idea but they need to include a full screen option.

Also I'm used to my HP48 and not seeing the other numbers on the stack is disconcerting. Maybe I'd get used to that.

Now that I think of it, not seeing them in forth makes it a little harder, too.

I was thinking it would be nice to add the feature that Win32Forth has that shows dots preceding the ok prompt. One dot for each number on the stack. I thought I might make that a future project when I learn a little more. But if I did, is there a way to save the new forth with the new feature like I can in Pygmy or Win32Forth?

Barry

Re: RPN PopUp Calculator

Posted by [Neal Bridges](#) on April 29, 1999 at 15:04:49:

In Reply to: [Re: RPN PopUp Calculator](#) posted by Barry Marks on April 29, 1999 at 15:01:29:

> That's too small for my old eyes. It's a nice idea but they need to include a
> full screen option.

I suggest you write the author; I'm sure he's receptive to suggestions.

> Also I'm used to my HP48 and not seeing the other numbers on the stack is
> disconcerting. Maybe I'd get used to that.

> Now that I think of it, not seeing them in forth makes it a little harder, too.

> I was thinking it would be nice to add the feature that Win32Forth has that shows dots preceding the ok prompt. One dot for each number on the stack. I thought I might make that a future project when I learn a little more. But if I did, is there a way to save the new forth with the new feature like I can in Pygmy or Win32Forth?

To add it properly, you'll need to wait for me to include a hook in the interpreter. Once I've done that, you can put the enhancement in your startup.quartus, where it'll automatically run when Quartus Forth is started.

Neal

Re: RPN PopUp Calculator

Posted by [Barry Marks](#) on April 29, 1999 at 18:19:47:

In Reply to: [Re: RPN PopUp Calculator](#) posted by Neal Bridges on April 29, 1999 at 15:04:49:

> I suggest you write the author; I'm sure he's receptive to suggestions.

Sorry about that. I just assumed you were the author. I will write him.

> To add it properly, you'll need to wait for me to include a hook in the interpreter. Once I've done that, you can put the enhancement in your startup.quartus, where it'll automatically run when Quartus Forth is started.

Don't do that just because of this. It was just something to aim for. I can find other projects.

By the way I do have an idea for a future enhancement. It would be nice to be able to select text on the Quartus screen and paste it into the command line. I've gotten reasonably comfortable with Grafitti but I still make plenty of mistakes. But even without mistakes that would be handy while experimenting.

Barry

Barry

Re: RPN PopUp Calculator

Posted by [Neal Bridges](#) on April 29, 1999 at 21:47:25:

In Reply to: [Re: RPN PopUp Calculator](#) posted by Barry Marks on April 29, 1999 at 18:19:47:

> By the i do have an idea for a future enhancement. It would be nice to be able
> to select text on the Quartus screen and paste it into the command line. I've
> gotten reasonably comfortable with Grafitti but I still make plenty of
> mistakes. But even without mistakes that would be handy while experimenting.

The Palm OS will handle cut-and-paste from fields on-screen. However, the Quartus Forth output screen is not a field; rather, text is drawn directly to the screen bitmap. This means the standard ROM routines for cut-and-paste don't work.

Quartus Forth treats the display as a bitmap (rather than using a field) for a number of reasons, among which are that with this method you can mix fonts, combine graphics and text, and output information to the screen far faster than if it were a field.

You can, however, cut-and-paste within the current input line. I'm adding the ability to scroll back over the past few input lines in version 2; that'll help.

Neal

Re: RPN PopUp Calculator

Posted by [Barry Marks](#) on April 29, 1999 at 22:46:24:

In Reply to: [Re: RPN PopUp Calculator](#) posted by Neal Bridges on April 29, 1999 at 21:47:25:

> You can, however, cut-and-paste within the current input line. I'm adding the
> ability to scroll back over the past few input lines in version 2; that'll help.

That would be great. Thanks.

Is version 2 in the works already?

Barry

Re: RPN PopUp Calculator

Posted by [Neal Bridges](#) on April 29, 1999 at 22:48:24:

In Reply to: [Re: RPN PopUp Calculator](#) posted by Barry Marks on April 29, 1999 at 22:46:24:

> Is version 2 in the works already?

It is!

Neal

FATAN implementation

Posted by [Neal Bridges](#) on April 28, 1999 at 15:46:19:

I needed the Standard floating-point trig word **fatán** for a project recently. It's not part of the Quartus Forth kernel at this point, so I wrote it in Forth -- it's posted below. This code does very good ATAN approximations. A CORDIC implementation would likely be faster, but this algorithm works and is quite straightforward.

There are a couple of additional words for deg>rad and rad>deg conversion.

I have added stack comments to each line of **fatán**.

```
\ fatan 4/28/99 1:39 pm NAB
: f+u ( u -- ) ( F: r -- r+u ) 0 d>f f+ ;
: f*u ( u -- ) ( F: r -- r+u ) 0 d>f f* ;
: fatan ( r -- arctan )
  fdup ( F: r r )
  fdup fdup f* fswap ( F: r r^2 r )
  1 20e f* f>d drop abs 14 + ( 1 count )
  0e ( F: r r^2 0 )
  do ( F: r r^2 val ) ( -- )
    \ val=(i*i*x^2)/(i+i+1+val):
    i 2* 1+ f+u ( F: r r^2 tb )
    fover i i * f*u ( F: r r^2 tb ta )
    fswap f/ ( F: r r^2 ta/tb )
  -1 +loop ( F: r r^2 val )
  fswap fdrop ( F: r val )
  \ val=x/(1+val):
  1e f+ f/ ( F: arctan ) ;
57.2957795130823e fconstant radsize

: deg>rad ( deg -- rad ) radsize f/ ;
: rad>deg ( rad -- deg ) radsize f* ;
```

Neal

Palmpilot Gear

Posted by [E. Ross Helton](#) on April 27, 1999 at 16:20:38:

Am I the only one that can't get onto the Palmpilot Gear site?

It seems to be down and has been since last night.

Make it a good day!

Ross

Re: Palmpilot Gear

Posted by [Neal Bridges](#) on April 27, 1999 at 16:26:28:

In Reply to: [Palmpilot Gear](#) posted by E. Ross Helton on April 27, 1999 at 16:20:38:

> Am I the only one that can't get onto the Palmpilot Gear site?

> It seems to be down and has been since last night.

Just tried it; no problems here.

Neal

Re: Palmpilot Gear

Posted by [E. Ross Helton](#) on April 27, 1999 at 19:08:35:

In Reply to: [Re: Palmpilot Gear](#) posted by Neal Bridges on April 27, 1999 at 16:26:28:

> > Am I the only one that can't get onto the Palmpilot Gear site?

> > It seems to be down and has been since last night.

> Just tried it; no problems here.

> Neal

Tried it again and it keeps coming back saying that the beta.palmpilotgear isn't working.

Do you have a different URL than the one I have?

Make it a good day!

Ross

Re: Palmpilot Gear

Posted by [E. Ross Helton](#) on April 27, 1999 at 19:10:55:

In Reply to: [Re: Palmpilot Gear](#) posted by E. Ross Helton on April 27, 1999 at 19:08:35:

> Tried it again and it keeps coming back saying that the beta.palmpilotgear
> isn't
> working.

> Do you have a different URL than the one I have?

> Make it a good day!

> Ross

Hey finally got on, had to alter the URL I had. Sorry for the bother

Make it a good day!

Ross

Create a rsrc with Pilrc

Posted by [Philippe de Rochembeau](#) on April 27, 1999 at 05:13:58:

Hello,

I have just used Pibuilder to create an .rcp and an .h file, but am not sure how to turn them into an .rsrc file. Could someone point me in the right direction?

Many thanks.

Philippe de Rochembeau

Re: Create a rsrc with Pilrc

Posted by [Neal Bridges](#) on April 27, 1999 at 11:21:08:

In Reply to: [Create a rsrc with Pilrc](#) posted by Philippe de Rochembeau on April 27, 1999 at 05:13:58:

> Hello,

> I have just used Pibuilder to create an .rcp and an .h file, but am not sure how

> to turn them into an .rsrc file. Could someone point me in the right direction?

Hi Philippe. Have a look at the sample source to "Year" or "Duco" -- there's a batch file there that shows how to use Pila to create a .PRC file out of your PilRC resources.

Neal

2@ and 2variable, etc

Posted by [Barry Marks](#) on April 25, 1999 at 22:06:29:

Do words like 2@ and 2variable deal with 32 bit numbers or with pairs of 16 bit numbers? I can't tell from using .

Thanks,

Barry

Re: 2@ and 2variable, etc

Posted by [Neal Bridges](#) on April 25, 1999 at 23:04:09:

In Reply to: [2@ and 2variable, etc](#) posted by Barry Marks on April 25, 1999 at 22:06:29:

> Do words like 2@ and 2variable deal with 32 bit numbers or with pairs of 16 bit

> numbers? I can't tell from using .

A 32-bit number is the same as a pair of 16-bit numbers.

Neal

Re: 2@ and 2variable, etc

Posted by [Barry Marks](#) on April 25, 1999 at 23:54:23:

In Reply to: [Re: 2@ and 2variable, etc](#) posted by Neal Bridges on April 25, 1999 at 23:04:09:

> > Do words like 2@ and 2variable deal with 32 bit numbers or with pairs of 16
> bit
> > numbers? I can't tell from using .
> A 32-bit number is the same as a pair of 16-bit numbers.

I realize that. But is it intended to store pairs such as coordinates or long numbers? Or do these words not care?

2! wants 2 numbers on the stack or it gives a stack overflow. Does it want the 2 16 bit halves of a 32 bit number or does it want 2 separate individual numbers or does it care?

Barry

Re: 2@ and 2variable, etc

Posted by [Neal Bridges](#) on April 26, 1999 at 00:00:33:

In Reply to: [Re: 2@ and 2variable, etc](#) posted by Barry Marks on April 25, 1999 at 23:54:23:

> > > Do words like 2@ and 2variable deal with 32 bit numbers or with pairs of
> 16
> > bit
> > > numbers? I can't tell from using .
> > A 32-bit number is the same as a pair of 16-bit numbers.

> I realize that. But is it intended to store pairs such as coordinates or long
> numbers? Or do these words not care?

> 2! wants 2 numbers on the stack or it gives a stack overflow. Does it want
> the
> 2 16 bit halves of a 32 bit number or does it want 2 separate individual
> numbers or does it care?

Sorry Barry; meant to type a longer response previously, but was interrupted and posted in haste.

2! and 2@ deal with pairs of cells on the stack; it doesn't matter whether those pairs represent two 16-bit values, or one 32-bit value.

Neal

Can Quartus save my bacon?????

Posted by [Brent DeWitt](#) on April 24, 1999 at 20:02:54:

Ok,

As they say, a `_little_` knowledge can be a dangerous thing! I used `pilot-xfer` to move darned near everything out of my Palm III for use by POSE, as suggested by Neal (yes, I `_finally_` understood what you meant about the alternative to a real `hotsync`). In my limited newbie scope however, I shot myself in the foot. I seem to have transfered data regarding the digitizer calibration! In POSE, it is now impossible for me to pull down the Digitizer catagory in Preferences due to a down and right (up and left?) offset between the mouse and POSE.

Now the question: Short of re-loading POSE and all software, is there at SysTrap that can be called from within Quartus which will invoke the digitizer calibration routine? I'm afraid I'm not far enough along in my studies to figure this one out.

Thanks all!

Brent

Re: Can Quartus save my bacon?????

Posted by [Neal Bridges](#) on April 25, 1999 at 00:36:15:

In Reply to: [Can Quartus save my bacon?????](#) posted by Brent DeWitt on April 24, 1999 at 20:02:54:

> Ok,

> As they say, a `_little_` knowledge can be a dangerous thing! I used `pilot-xfer` to move darned near everything out of my Palm III for use by POSE, as suggested
> by Neal (yes, I `_finally_` understood what you meant about the alternative to a
> real `hotsync`). In my limited newbie scope however, I shot myself in the foot.

> I seem to have transfered data regarding the digitizer calibration! In POSE,
> it is now impossible for me to pull down the Digitizer catagory in Preferences
> due to a down and right (up and left?) offset between the mouse and POSE.

> Now the question: Short of re-loading POSE and all software, is there at
> SysTrap that can be called from within Quartus which will invoke the digitizer
> calibration routine? I'm afraid I'm not far enough along in my studies to
> figure this one out.

-1. 34 >byte PrefSetPreference SysReset

should do the trick. Then it'll require recalibration after every reset, until you do

0. 34 >byte PrefSetPreference SysReset

NOTE that this is for the Emulator, and is not recommended on the actual device, as it interferes with the proper startup of HackMaster.

Neal

Re: Can Quartus save my bacon?????

Posted by [Brent DeWitt](#) on April 25, 1999 at 12:32:42:

In Reply to: [Re: Can Quartus save my bacon?????](#) posted by Neal Bridges on April 25, 1999 at 00:36:15:

Worked like a charm. Thanks !!!!

> -1. 34 >byte PrefSetPreference SysReset

> should do the trick. Then it'll require recalibration after every reset, until you do

> 0. 34 >byte PrefSetPreference SysReset

> NOTE that this is for the Emulator, and is not recommended on the actual device,

> as it interferes with the proper startup of HackMaster.

> Neal

RsrcEdit New Version

Posted by [Mike Will](#) on April 23, 1999 at 21:23:49:

The latest version of Roger Lawrence's RsrcEdit (0.999) is available at:

<http://www.individeo.net/>
(I've had no luck posting URLs, sorry).

I haven't taken a good look at it yet, but my hopes are high.

Cheers

Mike

Re: RsrcEdit New Version

Posted by [Barry Marks](#) on April 30, 1999 at 11:12:41:

In Reply to: [RsrcEdit New Version](#) posted by Mike Will on April 23, 1999 at 21:23:49:

I've just run into a problem with the latest version of RsrcEdit. I went to their website but could find no way to give feedback. So I thought I'd relate it here, both because someone here might know how to contact the author, and because you probably want to be aware of this also.

I tried to rename a resource database from test to ftest. What it did was append a box character that I don't recognize after test and then append ftest to that, resulting in test[]ftest. The [] is the box character. Only the name ftest appeared in the edit field but the full name was in the list of resource databases.

A second attempt left me with test[]ftest[]ftest.

I duplicated the database and the duplicate was named Copy of test[]ftest[]ftest. The edit field said Copy of test. I tried deleting a few letters from the right and I ended up with Copy of t[]ftest[]ftest.

I tried deleting both of these databases and there was no error indication but they didn't delete. I tried a number of times.

I think that a 0 or some other unexpected character is appended and is taken as part of the name by delete. I'm just guessing.

The only next step I can think of is to cold reset my Palm and restore everything and then go back to the older RsrcEdit. Fortunately I use BackupBuddy so I should be able to.

Any ideas, anybody?

Barry

Re: RsrcEdit New Version

Posted by [Neal Bridges](#) on April 30, 1999 at 12:23:56:

In Reply to: [Re: RsrcEdit New Version](#) posted by Barry Marks on April 30, 1999 at 11:12:41:

> I've just run into a problem with the latest version of RsrcEdit. I went to
> their website but could find no way to give feedback. So I thought I'd relate

> it here, both because someone here might know how to contact the author, and
> because you probably want to be aware of this also.

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> append a box character that I don't recognize after test and then append ftest
> to that, resulting in test[]ftest. The [] is the box character. Only the name
> ftest appeared in the edit field but the full name was in the list of resource
> databases.

> A second attempt left me with test[]ftest[]ftest.

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> ftest. The edit field said Copy of test. I tried deleting a few letters from
> the right and I ended up with Copy of t[]ftest[]ftest.

> I tried deleting both of these databases and there was no error indication but
> they didn't delete. I tried a number of times.

> I think that a 0 or some other unexpected character is appended and is taken
as
> part of the name by delete. I'm just guessing.

> The only next step I can think of is to cold reset my Palm and restore
> everything and then go back to the older RsrcEdit. Fortunately I use
> BackupBuddy so I should be able to.

You shouldn't require anything as drastic as a cold reset. Try deleting the
databases from the standard Palm 'Delete' panel.

I have tested renaming databases for a while here using RsrcEdit 0.999 04/23/99,
and haven't been able to recreate the problem you describe. Is this something
you can recreate at will? If so, I suggest disabling all HackMaster hacks and
seeing if the problem still exists.

Neal

Re: RsrcEdit New Version

Posted by [Barry Marks](#) on April 30, 1999 at 13:02:06:

In Reply to: [Re: RsrcEdit New Version](#) posted by Neal Bridges on April 30, 1999
at 12:23:56:

> You shouldn't require anything as drastic as a cold reset. Try deleting the
> databases from the standard Palm 'Delete' panel.

I've already done the cold reset. I didn't know about the Palm delete option.
Anyway this was the only change I made since my last backup so it was ok.

> I have tested renaming databases for a while here using RsrcEdit 0.999
04/23/99,
> and haven't been able to recreate the problem you describe. Is this
something

> you can recreate at will? If so, I suggest disabling all HackMaster hacks and
> seeing if the problem still exists.

When I restored everything I tried the same thing and it worked fine. The hacks were enabled. Now I don't know what happened.

By the way, this is the first time I've used BackupBuddy to restore and so far it seems to have done a great job.

Barry

Re: RsrcEdit New Version (posting links)

Posted by [Neal Bridges](#) on April 24, 1999 at 14:45:05:

In Reply to: [RsrcEdit New Version](#) posted by Mike Will on April 23, 1999 at 21:23:49:

> The latest version of Roger Lawrence's RsrcEdit (0.999) is available at:
> <http://www.individeo.net/>
> (I've had no luck posting URLs, sorry).
> I haven't taken a good look at it yet, but my hopes are high.

To post a link, fill out the "Optional Link URL" and "Link Title" fields underneath the reply area, as I've done here.

Neal

- [RsrcEdit -- latest version](#)

Saving and retrieving preferences

Posted by [Steve Gibson](#) on April 23, 1999 at 16:21:15:

Neal, I was wondering if you had a working example that you could share of how to save and retrieve application preferences on application launch and quit?

I've been hacking at it for a while now and can't seem to get it right. I'm trying to use PrefGetAppPreferencesV10 and PrefSetAppPreferencesV10. I think that I also have to use PrefGetPreference and PrefSetPreference to get/set the individual values, but I'm not sure if this is right. I don't really know how to read and write to the elements of the struct. Here's a summary of what I've got:

```
1 constant myver
variable test1
variable test2

(id) MYid 2constant crid

struct
1 cells field pref.test1
1 cells field pref.test2
end-struct prefs:

prefs: myprefs

: start-up
sizeof prefs: myprefs myver [id] DATA PrefGetAppPreferencesV10 = if
pref.test1 >byte PrefGetPreference >rel test1 !
pref.test2 >byte PrefGetPreference >rel test2 !
then
FrontPage ShowForm
LoadFields ;

: exit-app
test1 @ >abs pref.test1 >byte PrefSetPreference
test2 @ >abs pref.test2 >byte PrefSetPreference
sizeof prefs: myprefs >abs myver crid PrefSetAppPreferencesV10
(bye) ;
```

Like I said, I don't know if I'm going in the right direction with this -- apparently not since my Palm IIIx crashes when I try to make a .prc after this code has been added to my app :(

I seem to recall mention of your Swatch program doing this. Would you consider sharing relevant code snippets?

Thanks,

-Steve

Re: Saving and retrieving preferences

Posted by [Neal Bridges](#) on April 23, 1999 at 17:02:04:

In Reply to: [Saving and retrieving preferences](#) posted by Steve Gibson on April 23, 1999 at 16:21:15:

[code snipped]

There are two problems with your code code.

First, PrefGetPreference and PrefGetAppPreferencesV10, despite the similarity in names, are not related functions. PrefGetPreference and PrefSetPreference are used to get system preferences as set in the Preferences application; PrefGetAppPreferencesV10 and PrefSetAppPreferencesV10 are used to store data

specific to a given application.

Second, you need to pass the data address as an absolute address -- your line
sizeof prefs: myprefs myver [id] DATA PrefGetAppPreferencesV10
should be

sizeof prefs: myprefs >abs myver [id] DATA PrefGetAppPreferencesV10

After you retrieve your preferences into your 'myprefs' struct, you can read the values directly from it; no extra system calls are required.

The apps I've written that save application preferences don't write them 'on exit' per (though certainly that's possible to implement) -- I re-write the app's preferences every time they change, ensuring that they're always updated.

Neal

Re: Saving and retrieving preferences

Posted by [Steve Gibson](#) on April 23, 1999 at 17:51:11:

In Reply to: [Re: Saving and retrieving preferences](#) posted by Neal Bridges on April 23, 1999 at 17:02:04:

> [code snipped]

> There are two problems with your code code.

> First, PrefGetPreference and PrefGetAppPreferencesV10, despite the similarity in

> names, are not related functions. PrefGetPreference and PrefSetPreference are used to get system preferences as set in the Preferences application;

> PrefGetAppPreferencesV10 and PrefSetAppPreferencesV10 are used to store data specific to a given application.

Ah, okay...I guess that was my main question. I wasn't sure how the elements of the struct were to be read and written to.

> After you retrieve your preferences into your 'myprefs' struct, you can read the

> values directly from it; no extra system calls are required.

Got it. Thanks!

Re: Saving and retrieving preferences

Posted by [Neal Bridges](#) on April 23, 1999 at 17:09:38:

In Reply to: [Re: Saving and retrieving preferences](#) posted by Neal Bridges on April 23, 1999 at 17:02:04:

```
>  
sizeof prefs:  myprefs >abs  myver  [id] DATA  PrefGetAppPreferencesV10  
>
```

Also, I see you're using DATA as the id by which to store your app preferences -- I believe a better practice would be to use the creator-ID of the application itself, to avoid conflicting with any other application's preferences.

Neal

Re: Saving and retrieving preferences-example snippet

Posted by [Branko Znuderl](#) on April 24, 1999 at 09:11:50:

In Reply to: [Re: Saving and retrieving preferences](#) posted by Neal Bridges on April 23, 1999 at 17:09:38:

Dear friends,

Here is my little example:

```
\ my.pref  
  
needs ids  
needs toolkit  
needs zstrings  
  
variable gp 40 allot  
: app z" 11111111111111 " ;  
  
: sapp ( -- )  
14 \ size  
app drop >abs \ &prefs.  
1 \ version  
[ID] Test \ creator.  
PrefSetAppPreferencesV10 ;  
  
: gapp ( -- )  
14 \ size  
gp drop >abs \ &prefs.
```

```
1 \ version
[ID] Test \ creator.
PrefGetAppPreferencesV10 ;
```

string>neField

Posted by [Carl Jacobsen](#) on April 23, 1999 at 14:38:40:

Well, I'm finally getting around to messing with the Pilot GUI from Quartus, and I was trying to "print" on a non-editable field, basically using it as an output placeholder. I tried string>Field, but it seems to work only if the field is editable (makes sense, what with seeing FldDelete and FldInsert in there). So, after looking through a bunch of "C" code, I wrote an equivalent word for non-editable fields:

```
\ like string>Field for non-edit fields
: string>neField ( c-addr u fieldID -- Err )
>R DROP >abs
R> GetObjectPtr
2DUP 2>R FldSetTextPtr
TRUE 2R> FldRecalculateField FlushQueue 0 ;
```

It requires a zero-terminated string (because FldSetTextPtr does), and the length parameter (u) and error return value are there just for show -- to make it operate identically to string>Field. It could be written without these as:

```
\ like string>Field for non-edit fields
: string>neField ( c-addr fieldID -- )
>R >abs
R> GetObjectPtr
2DUP 2>R FldSetTextPtr
TRUE 2R> FldRecalculateField FlushQueue ;
```

This seems to work for my purposes so far, but I'm quite curious to hear the long laundry list of Pilot/Forth/Quartus programming rules I've just violated :-). Was there another way to do this that I missed?

Also, Neal: I looked first to the Duco sources for an example, but it seems to do its output mostly by positioning with "at" and then using type and such. Do you seem some inherent advantage to this? I like the idea of being able to move things around on the form with rsrcedit and having the code automatically hit the new locations...

As a friend of mine used to say at the end of staff meetings, "Questions? ... Comments? ... Snide remarks?"

-- Carl Jacobsen

Re: string>neField

Posted by [Neal Bridges](#) on April 23, 1999 at 15:37:29:

In Reply to: [string>neField](#) posted by Carl Jacobsen on April 23, 1999 at 14:38:40:

> Well, I'm finally getting around to messing with the Pilot GUI
> from Quartus, and I was trying to "print" on a non-editable field,
> basically using it as an output placeholder. I tried string>Field,
> but it seems to work only if the field is editable (makes sense,
> what with seeing FldDelete and FldInsert in there). So, after
> looking through a bunch of "C" code, I wrote an equivalent word
> for non-editable fields:

[code snipped]

> This seems to work for my purposes so far, but I'm quite curious
> to hear the long laundry list of Pilot/Forth/Quartus programming
> rules I've just violated :-) Was there another way to do this
> that I missed?

I don't think you've violated any rules. Looks workable to me. Write a simple app using your new words, and run a million Gremlins against it via the Emulator -- that'll show up any problems with memory leakage, etc.

> Also, Neal: I looked first to the Duco sources for an example, but
> it seems to do its output mostly by positioning with "at" and then
> using type and such. Do you seem some inherent advantage to this?
> I like the idea of being able to move things around on the form with
> rsrcedit and having the code automatically hit the new locations...

Drawing and erasing areas on screen directly using 'erase-rectangle' and 'at' is faster and simpler than using label or non-editable field resources, and doesn't involve any fiddling about with Palm OS systraps.

Neal

Quartus Forth 2

Posted by [Philippe de Rochembeau](#) on April 23, 1999 at 03:23:01:

Neal,

Sometime ago, you mentioned that you were already working on Quartus 2. What will it include? A built-in debugger, if feasible, would be very useful among other

things.

Philippe de Rochembeau

Re: Quartus Forth 2

Posted by [Neal Bridges](#) on April 23, 1999 at 03:25:47:

In Reply to: [Quartus Forth 2](#) posted by Philippe de Rochembeau on April 23, 1999 at 03:23:01:

> Sometime ago, you mentioned that you were already working on Quartus 2. What will
> it include? A built-in debugger, if feasible, would be very useful among other
> things.

My current efforts are going into the optimizer. I have a few other enhancements planned, including some new debugging features.

Neal

Needs

Posted by [Philippe de Rochembeau](#) on April 23, 1999 at 03:20:08:

Is there a way to do
needs core-ext, graphics, etc.

instead of

needs core-ext
needs graphics
needs etc.

which takes a lot of room in PalmPilot memos?

Philippe de Rochembeau

Re: Needs

Posted by [Neal Bridges](#) on April 23, 1999 at 03:22:10:

In Reply to: [Needs](#) posted by Philippe de Rochembeau on April 23, 1999 at 03:20:08:

> Is there a way to do
> needs core-ext, graphics, etc.
> instead of
> needs core-ext
> needs graphics
> needs etc.

> which takes a lot of room in PalmPilot memos?

Each NEEDS or INCLUDE must be on its own line. You could, though, make another memo and put your various NEEDS lines in there, and then just NEEDS that one memo.

Neal

How do I get library.mpa into the Palm, with Macintosh?

Posted by [Masayasu Ishiwatari](#) on April 23, 1999 at 03:01:57:

How to get library.pma into the palm, with Macintosh?
I cannot run Windows Palm Desktop Software.

Re: How do I get library.mpa into the Palm, with Macintosh?

Posted by [Kerry A. Krenzke](#) on May 22, 1999 at 18:31:12:

In Reply to: [How do I get library.mpa into the Palm, with Macintosh?](#) posted by Masayasu Ishiwatari on April 23, 1999 at 03:01:57:

I am running an older Mac (68040), therefore I am limited to using the original MacPac. I still cannot get library.mpa to install. Any other suggestions would be very

appreciated.

Re: How do I get library.mpa into the Palm, with Macintosh?

Posted by [Neal Bridges](#) on May 22, 1999 at 19:33:22:

In Reply to: [Re: How do I get library.mpa into the Palm, with Macintosh?](#) posted by Kerry A. Krenzke on May 22, 1999 at 18:31:12:

> I am running an older Mac (68040),
> therefore I am limited to using the original
> MacPac. I still cannot get library.mpa to
> install. Any other suggestions would be very
> appreciated.

The library memos are all provided as individual text files, in libtxt.zip. They can be cut&pasted into the older MacPac.

This takes a few minutes, but fortunately the library memos are quite stable, so it needs only be done once.

Neal

Re: How do I get library.mpa into the Palm, with Macintosh?

Posted by [Philippe de Rochembeau](#) on April 23, 1999 at 03:26:21:

In Reply to: [How do I get library.mpa into the Palm, with Macintosh?](#) posted by Masayasu Ishiwatari on April 23, 1999 at 03:01:57:

Hello,

You merely import the mpa into your Palm Desktop Note List. You can also open it with BBEdit and cut and past each library into the Note List.

Philippe de Rochembeau

> How to get library.pma into the palm, with Macintosh?
> I cannot run Windows Palm Desktop Software.

Re: How do I get library.mpa into the Palm, with Macintosh?

Posted by [Joe Meehan](#) on April 23, 1999 at 13:00:11:

In Reply to: [Re: How do I get library.mpa into the Palm, with Macintosh?](#) posted by Philippe de Rochambeau on April 23, 1999 at 03:26:21:

Does this work with version 2 of MacPac?

> Hello,

> You merely import the mpa into your Palm Desktop Note List. You can also open it

> with BBEdit and cut and past each library into the Note List.

> Philippe de Rochambeau

>

> > How to get library.pma into the palm, with Macintosh?

> > I cannot run Windows Palm Desktop Software.

Re: How do I get library.mpa into the Palm, with Macintosh?

Posted by [Philippe de Rochambeau](#) on April 24, 1999 at 09:30:19:

In Reply to: [Re: How do I get library.mpa into the Palm, with Macintosh?](#) posted by Joe Meehan on April 23, 1999 at 13:00:11:

Yes, it does. What kind of problems are you having?

Philippe de Rochambeau

> Does this work with version 2 of MacPac?

>

> > Hello,

> > You merely import the mpa into your Palm Desktop Note List. You can also open

> it

> > with BBEdit and cut and past each library into the Note List.

> > Philippe de Rochambeau

> >
> > > How to get library.pma into the palm, with Macintosh?
> > > I cannot run Windows Palm Desktop Software.

Re: How do I get library.mpa into the Palm, with Macintosh?

Posted by [Joe Meehan](#) on April 26, 1999 at 12:39:35:

In Reply to: [Re: How do I get library.mpa into the Palm, with Macintosh?](#) posted by Philippe de Rochambeau on April 24, 1999 at 09:30:19:

Thanks for replying to my post. I apologize for being slow in responding -- the weekend was hectic.

I am able to use a text editor to cut and paste notes into the Desktop Note List. However, when I try to use the import menu item to import the .mpa file, the software does not allow me to pick the file. In fact, it doesn't show it at all. I suppose this could be some sort of resource type problem, but I've also been unable to find any mention of .mpa files in the new MacPac documentation. My guess has been that .mpa files were supported in the initial version of MacPac, but that the new Claris-like version does not support them.

I'd love to find a way around this. I get really bored cutting and pasting all those files.

Joe Meehan

> Yes, it does. What kind of problems are you having?

> Philippe de Rochambeau

> > Does this work with version 2 of MacPac?

> >

> > > Hello,

> > > You merely import the mpa into your Palm Desktop Note List. You can also open

> > it

> > > with BBEdit and cut and past each library into the Note List.

> > > Philippe de Rochambeau

> > >

> > > > How to get library.pma into the palm, with Macintosh?

> > > > I cannot run Windows Palm Desktop Software.

Re: How do I get library.mpa into the Palm, with Macintosh?

Posted by [Philippe de Rochembeau](#) on April 27, 1999 at 05:04:57:

In Reply to: [Re: How do I get library.mpa into the Palm, with Macintosh?](#) posted by Joe Meehan on April 26, 1999 at 12:39:35:

Joe,

You are right. There is no way to directly import an mpa file into MacPac 2 (contrary to what I have previously said; I apologize for misleading you, but I somewhat got the import process with the Windows Pac and the import process with the MacPac confused). There is however a quick-and-dirty way to import all the memos into the MemoPad without having to cut and paste each line, although it still involves breaking up the imported memos into smaller memos:

- open library.mpa in BBEdit
- save it as library.txt
- "show invisibles" and remove all garbage characters (?s etc.)
- launch the Palm Desktop
- go to the memo list
- create a new memo
- click in the memo's body
- select the import item in the File
- select Notes from the Fields Popup Menu
- select DateBook from the Delimiters Popup Menu
- move the Body Field to the top (so that the data get imported there and not into the title)
- import the data

This operation yields two memos:

- one with the second part of the library file (?!)
- another with the first part of the file

As I recall, Mac Pac 1 let you transpose data vertically, although Mac Pac 2 doesn't. If you have Mac Pac 1, try importing library.txt into it and transposing rows.

I hope this will help.

Philippe de Rochembeau

> Thanks for replying to my post. I apologize for being slow in responding -- the weekend was hectic.

> I am able to use a text editor to cut and paste notes into the Desktop Note List. However, when I try to use the import menu item to import the .mpa file, the software does not allow me to pick the file. In fact, it doesn't show it

at
> all. I suppose this could be some sort of resource type problem, but I've also
> been unable to find any mention of .mpa files in the new MacPac documentation.
> My guess has been that .mpa files were supported in the initial version of
> MacPac, but that the new Claris-like version does not support them.

> I'd love to find a way around this. I get really bored cutting and pasting all
> those files.

> Joe Meehan
> > Yes, it does. What kind of problems are you having?

> > Philippe de Rochembeau
> > > Does this work with version 2 of MacPac?

> > >
> > > Hello,

> > > > You merely import the mpa into your Palm Desktop Note List. You can also
> > > > open
> > > > it
> > > > with BBEdit and cut and past each library into the Note List.

> > > > Philippe de Rochembeau

> > > >
> > > > > How to get library.pma into the palm, with Macintosh?
> > > > > I cannot run Windows Palm Desktop Software.

Re: How do I get library.mpa into the Palm, with Macintosh?

Posted by [Barry Marks](#) on April 26, 1999 at 18:05:55:

In Reply to: [Re: How do I get library.mpa into the Palm, with Macintosh?](#) posted by Joe Meehan on April 26, 1999 at 12:39:35:

> I am able to use a text editor to cut and paste notes into the Desktop Note
> List. However, when I try to use the import menu item to import the .mpa
> file,
> the software does not allow me to pick the file. In fact, it doesn't show it
> at
> all. I suppose this could be some sort of resource type problem, but I've
> also
> been unable to find any mention of .mpa files in the new MacPac
> documentation.
> My guess has been that .mpa files were supported in the initial version of
> MacPac, but that the new Claris-like version does not support them.

> I'd love to find a way around this. I get really bored cutting and pasting all those files.

I have Windows95 so this may not apply to you, and I'm not even sure I remember this correctly. But I think I remember that I had the same problem..that mpa files were not found even though they were included in the templates. So I changed to all files and then found the mpa file and imported it with no problem.

I don't know if you have that option on a Mac but you might look into it.

The reason I don't remember this for sure is that I installed a lot of stuff all on the first day I got my Pilot and I have them a little mixed up. But I do believe it was with the .mpa that this occurred.

Barry

DEFER for QUARTUS

Posted by [Ingo Mathyl](#) on April 22, 1999 at 17:05:18:

Hi Neal,

I saw this code for DEFERred words (ANS-FORTH) in comp.lang.forth and I tested it with QUARTUS.

```
: DEFER
CREATE ['] NOTHING ,
DOES> @ EXECUTE ;

: (IS) ( xt -- )
' >BODY ! ;

: [IS]
' >BODY POSTPONE LITERAL
POSTPONE ! ; IMMEDIATE

: IS
STATE @ IF
POSTPONE [IS] ELSE
(IS) THEN ; IMMEDIATE
```

When I try to use the word IS the following error is returned by the word >BODY (inside IS) :

```
" >BODY used on non-CREATED word "
```

Could you help me to understand this message?
Is the code not right for QUARTUS?

Bye Ingo.

Re: DEFER for QUARTUS

Posted by [Neal Bridges](#) on April 22, 1999 at 17:20:26:

In Reply to: [DEFER for QUARTUS](#) posted by Ingo Mathyl on April 22, 1999 at 17:05:18:

> Hi Neal,

> I saw this code for DEFERred words (ANS-FORTH) in comp.lang.forth and
> I tested it with QUARTUS.

```
> : DEFER
> CREATE ['] NOTHING ,
> DOES> @ EXECUTE ;

> : (IS) ( xt -- )
> ' >BODY ! ;

> : [IS]
> ' >BODY POSTPONE LITERAL
> POSTPONE ! ; IMMEDIATE
```

```
> : IS
> STATE @ IF
> POSTPONE [IS] ELSE
> (IS) THEN ; IMMEDIATE
```

> When I try to use the word IS the following error is returned by
> the word >BODY (inside IS) :

> " >BODY used on non-CREATED word "

> Could you help me to understand this message?
> Is the code not right for QUARTUS?

The code looks fine. I just tried it here and I'm not having any problems...

```
DEFER x
' words is x
x
```

Possibly you're trying

```
' x is words
```

in which case you'll get the error you're seeing, as it'll be trying to use
>BODY on WORDS, which as the message states is not a CREATED word.

Neal

Re: DEFER for QUARTUS

Posted by [Ingo Mathyl](#) on April 23, 1999 at 17:28:23:

In Reply to: [Re: DEFER for QUARTUS](#) posted by Neal Bridges on April 22, 1999 at 17:20:26:

> > Hi Neal,

> > I saw this code for DEFERed words (ANS-FORTH) in comp.lang.forth and
> > I tested it with QUARTUS.

```
> > : DEFER
> > CREATE ['] NOTHING ,
> > DOES> @ EXECUTE ;
```

```
> > : (IS) ( xt -- )
> > ' >BODY ! ;
```

```
> > : [IS]
> > ' >BODY POSTPONE LITERAL
> > POSTPONE ! ; IMMEDIATE
```

```
> > : IS
> > STATE @ IF
> > POSTPONE [IS] ELSE
> > (IS) THEN ; IMMEDIATE
```

> > When I try to use the word IS the following error is returned by
> > the word >BODY (inside IS) :

> > " >BODY used on non-CREATED word "

> > Could you help me to understand this message?
> > Is the code not right for QUARTUS?

> The code looks fine. I just tried it here and I'm not having any problems...

```
> DEFER x
> ' words is x
> x
```

> Possibly you're trying

```
> ' x is words
```

> in which case you'll get the error you're seeing, as it'll be trying to use
> >BODY on WORDS, which as the message states is not a CREATED word.

> Neal

Hi Neal,

thank you for your feedback!

The code works fine and the error came from my own definitions.

I did something like that

```
defer x
defer y

: init-mystuff
['] words is x
['] page is y ;

but without ['] !!
```

So there was not a valid cfa on the stack for IS and >BODY and quartus was checking this and the error-message came out.

Thanks for you help!

Ingo

MOVE or CMOVE?

Posted by [Steve Gibson](#) on April 22, 1999 at 09:43:41:

I'm trying to convert a value stored in a fvariable into a zstring and append to a memo. What I have is giving me a fatal exception:

```
fvariable critical
create strbuff 40 chars allot

\ some float value gets assigned to critcal at some point...

\ convert fvar to string, copy to strbuff, save string
\ length to return stack (twice) for later use.

critcal f@ (f.) dup dup 2>r strbuff swap move

\ convert strbuff to zstring (from an example Neal gave)

r> strbuff + 0 c!

\ append to memo

strbuff r> AppendCurrentMemo
```

This gives me a fatal, but I'm not sure if it is some flaw in my code/logic or or maybe I actually need to use cmove instead of move?

I was going to try cmove, but found that it is not included in Quartus.

-Steve

Re: MOVE or CMOVE?

Posted by [Neal Bridges](#) on April 22, 1999 at 10:33:33:

In Reply to: [MOVE or CMOVE?](#) posted by Steve Gibson on April 22, 1999 at 09:43:41:

```
> I'm trying to convert a value stored in a fvariable into a zstring and
> append to a memo. What I have is giving me a fatal exception:
> fvariable critical
> create strbuff 40 chars allot
> \ some float value gets assigned to critical at some point...
> \ convert fvar to string, copy to strbuff, save string
> \ length to return stack (twice) for later use.
> critical f@ (f.) dup dup 2>r strbuff swap move
> \ convert strbuff to zstring (from an example Neal gave)
> r> strbuff + 0 c!
> \ append to memo
> strbuff r> AppendCurrentMemo
>
> This gives me a fatal, but I'm not sure if it is some flaw in my
> code/logic or or maybe I actually need to use cmove instead of move?
> I was going to try cmove, but found that it is not included in Quartus.
```

Hi Steve. MOVE will work fine.

I think the problem may be in 'r> strbuff + 0 c!' (store something at address 0) -- should be 'r> strbuff + 0 swap c!' (store 0 at the end of the string). Give that a try.

Neal

Re: MOVE or CMOVE?

Posted by [Steve Gibson](#) on April 22, 1999 at 10:55:07:

In Reply to: [Re: MOVE or CMOVE?](#) posted by Neal Bridges on April 22, 1999 at 10:33:33:

```
> > I'm trying to convert a value stored in a fvariable into a zstring and
> > append to a memo. What I have is giving me a fatal exception:
> > fvariable critical
> > create strbuff 40 chars allot
```

```
> > \ some float value gets assigned to critical at some point...
> > \ convert fvar to string, copy to strbuff, save string
> > \ length to return stack (twice) for later use.
> > critical f@ (f.) dup dup 2>r strbuff swap move
> > \ convert strbuff to zstring (from an example Neal gave)
> > r> strbuff + 0 c!
> > \ append to memo
> > strbuff r> AppendCurrentMemo
> >
> > This gives me a fatal, but I'm not sure if it is some flaw in my
> > code/logic or or maybe I actually need to use cmove instead of move?
> > I was going to try cmove, but found that it is not included in Quartus.
> Hi Steve. MOVE will work fine.
> I think the problem may be in 'r> strbuff + 0 c!' (store something at address
0)
> -- should be 'r> strbuff + 0 swap c!' (store 0 at the end of the string).
Give
> that a try.
> Neal
Neal, that was it! Argh! I looked at that thing a hundred times and my brain
was telling me that the 'swap' was in there. Thanks for taking a look at it
for me.
-Steve
```

"Loading: filename"

Posted by [Neal Bridges](#) on April 21, 1999 at 23:17:46:

Here's a short module that you can include at the top of your programs, above any other **include** or **needs** statements. It will display the name of each file that's included.

```
\ announce
: say ( "name" -- )
  >in @ >r
  ." Loading: " 0 parse type cr
  r> in ! ;
: include say include ;
: needs say needs ;
cr
```

Neal

Re: "Loading: filename"

Posted by [E. Ross Helton](#) on April 22, 1999 at 15:19:32:

In Reply to: ["Loading: filename"](#) posted by Neal Bridges on April 21, 1999 at 23:17:46:

```
>
\ announce
>
>
: say ( "name" -- )
>   >in @ >r
>   ." Loading: " 0 parse type cr
>   r> in ! ;
```

I tried the program and it stops on the ' in 'part and says it is an unknown word.

Do you know what happened?

Make it a good day!

Ross

Re: "Loading: filename"

Posted by [Neal Bridges](#) on April 22, 1999 at 16:40:56:

In Reply to: [Re: "Loading: filename"](#) posted by E. Ross Helton on April 22, 1999 at 15:19:32:

```
>
> >
\ announce
> >
> >
: say ( "name" -- )
> >   >in @ >r
> >   ." Loading: " 0 parse type cr
> >   r> >in ! ;
```

> I tried the program and it stops on the ' in 'part and says it is an unknown

> word.

> Do you know what happened?

It's a typo -- should be ">IN". I've corrected the version above.

Neal

Re:

Posted by [Ingo Mathyl](#) on April 22, 1999 at 16:03:06:

In Reply to: [Re:](#) posted by E. Ross Helton on April 22, 1999 at 15:19:32:

```
>
> >
\ announce
> >
> >
: say ( "name" -- )
> >   >in @ >r
> >   ." Loading: " 0 parse type cr
> >   r> in ! ;

> I tried the program and it stops on the ' in 'part and says it is an unknown
> word.

>
> Do you know what happened?

> Make it a good day!
> Ross
```

Hi Ross,

try is:

```
: say ( "name" -- )
>in @ >r
." Loading: " 0 parse type cr
r> >in ! ;
```

this will work.

Bye Ingo

Re:

Posted by [E. Ross Helton](#) on April 22, 1999 at 19:22:38:

In Reply to: [Re:](#) posted by Ingo Mathyl on April 22, 1999 at 16:03:06:

```
> Hi Ross,  
> try is:  
> : say ( "name" -- )  
> >in @ >r  
> ." Loading: " 0 parse type cr  
> r> >in ! ;  
  
> this will work.  
  
> Bye Ingo
```

Thanks to both Indigo and Neal for the Help.

Also I would like to say that I added it to my test memo and it works fine.

Make it a good day!

Ross

create and variable (newbie question)

Posted by Marcia Elliott on April 20, 1999 at 19:18:40:

I'm trying to figure out the difference between 'variable' and 'create'. I know both can be used with the word 'allot' to hold a string, but in the quartus library, 'create' is usually used for that purpose. They are not identical in meaning:

```
create foo ok  
2 , ok  
foo @ . 2 ok  
variable bar ok  
3 , ok  
bar @ . 0 ok
```

In the list of forth words at

<http://astro.pas.rochester.edu/Forth/forth-words.html>

'create' is a " Generic defining word" and 'variable' "Defines a variable."

Can someone enlighten me?

Re: create and variable (newbie question)

Posted by [William Tanksley](#) on April 22, 1999 at 11:19:38:

In Reply to: [create and variable \(newbie question\)](#) posted by Marcia Elliott on April 20, 1999 at 19:18:40:

```
> I'm trying to figure out the difference between 'variable'  
> and 'create'. I know both can be used with the word 'allot'  
> to hold a string, but in the quartus library, 'create' is usually  
> used for that purpose. They are not identical in meaning:
```

'variable' can't portably be used to store a string -- it's only a cell wide, nothing more.

```
> create foo ok  
> 2 , ok  
> foo @ . 2 ok
```

As you see, create can do everything variable does, and much more. It can be used together with does> to define arbitrarily complex objects.

It's hard to say which one you'll use more -- most programming languages use variables more than they define complex types, but Forth is different because of the stack. Sometimes, seeing the word VARIABLE in a Forth program means that something's wrong, because the programmer is using global state.

And yes, there are some people who'll start arguing if you use variables what they think of as 'too much'.

Sorry for the lecture. As you were :).

-Billy

Re: create and variable (newbie question)

Posted by [Neal Bridges](#) on April 20, 1999 at 20:10:31:

In Reply to: [create and variable \(newbie question\)](#) posted by Marcia Elliott on April 20, 1999 at 19:18:40:

```
> I'm trying to figure out the difference between 'variable'  
> and 'create'. I know both can be used with the word 'allot'  
> to hold a string, but in the quartus library, 'create' is usually  
> used for that purpose. They are not identical in meaning:
```

```
> create foo ok  
> 2 , ok  
> foo @ . 2 ok
```

```
> variable bar ok
> 3 , ok
> bar @ . 0 ok

> In the list of forth words at
http://astro.pas.rochester.edu/Forth/forth-words.html
> 'create' is a " Generic defining word" and 'variable' "Defines a variable."
> Can someone enlighten me?
```

Perhaps this will help: VARIABLE is equivalent to this:

```
: VARIABLE ( "name" -- ) ( -- addr )
  CREATE
  1 CELLS ALLOT ;
```

Also note: using ALLOT after a VARIABLE is a practice sometimes encountered in older Forth source; although it will work in Quartus Forth, this practice should be avoided in portable code.

For example,

\ To allocate 5 cells:

```
VARIABLE x 4 cells allot \ this is bad
```

```
CREATE x 5 cells allot \ this is good
```

Neal

Beginner wanting help!

Posted by [Garry](#) on April 19, 1999 at 18:11:29:

Couple of things:

Use of Greyscale in Forth - how?

What's the easiest way to read and write to databases, for use in my programs?

Example code would be great.

Re: Beginner wanting help!

Posted by [Neal Bridges](#) on April 19, 1999 at 19:50:30:

In Reply to: [Beginner wanting help!](#) posted by Garry on April 19, 1999 at 18:11:29:

> Couple of things:

> Use of Greyscale in Forth - how?

Under the newer ROM versions, there are certain grayscale ROM functions; I haven't tried them myself. Grayscale is still unsupported on Palm devices. You can set about it in exactly the same way it's done in C; I haven't translated any of the grayscale examples over yet, but there are no technical obstacles to doing so. 3Com has a whole page on it at the devzone site.

> What's the easiest way to read and write to databases, for use in my programs?

> Example code would be great.

There are a few such examples in the Quartus Forth File Area -- *newmemo.txt* for writing to a database, *doc.txt* for reading from. Facilities for database access are provided in the Palm OS, and as such it's just a matter of using the right ROM functions.

Let me know if you have any questions as you proceed!

Neal

FntDefineFont

Posted by [Mike Will](#) on April 19, 1999 at 17:12:45:

I'm intrigued by the supposed ability of PalmOS 3.0 to use custom fonts. However, there appears to be virtually nothing out there in the way of examples or fonts. The only thing I could find was FontHack, which doesn't work with 3.0 (and is ugly anyway). I notice that Neal uses WinDrawBitmap to make the tiny and LCD fonts work, but I'd like something that could work in Memo files as well. Any thoughts?

Thanks

Mike

Re: FntDefineFont

Posted by [Neal Bridges](#) on April 19, 1999 at 19:29:54:

In Reply to: [FntDefineFont](#) posted by Mike Will on April 19, 1999 at 17:12:45:

> I'm intrigued by the supposed ability of PalmOS 3.0 to use custom fonts.
> However, there appears to be virtually nothing out there in the way of examples
> or fonts. The only thing I could find was FontHack, which doesn't work with 3.0
> (and is ugly anyway). I notice that Neal uses WinDrawBitmap to make the tiny
> and LCD fonts work, but I'd like something that could work in Memo files as
> well. Any thoughts?

There's a shareware font editor and an update for FontHack at PilotGear. It's possible to define your own fonts for use in your apps, but it's a long road.

Neal

POSE and the 'real world'

Posted by [Will Fisher](#) on April 19, 1999 at 07:42:49:

Maybe someone here can implement my idea...

...would it be possible to write a prgroam to 'dump' the contents of my physical PalmIIIx to a RAM file that POSE can read? Or alternatively is there a way to convince POSE it's connected to the 'net so it can do a network hoysynch. I would love to make POSE be an exact duplicate of my handheld but see no practical way to do this. IMHO, the developers of POSE/CoPilot really missed this one! I know I can install any PRC i'd like, but what about memopad files, addressbooks, rsrc databases I'm developing, etc. If I could 'beam' them that'd be cool as well... it seems that POSE has all the features you need for development but no good way of sharing info between itself and real palm devices... well, perhaps someone can implement one of my ideas! :)

-Will

Re: POSE and the 'real world'

Posted by [Neal Bridges](#) on April 19, 1999 at 09:40:02:

In Reply to: [POSE and the 'real world'](#) posted by Will Fisher on April 19, 1999 at 07:42:49:

> Maybe someone here can implement my idea...

> ...would it be possible to write a prgroam to 'dump' the contents of my physical

> PalmIIIx to a RAM file that POSE can read? Or alternatively is there a way to

> convince POSE it's connected to the 'net so it can do a network hoysynch. I

> would love to make POSE be an exact duplicate of my handheld but see no

> practical way to do this. IMHO, the developers of POSE/CoPilot really missed

> this one! I know I can install any PRC i'd like, but what about memopad files,

> addressbooks, rsrc databases I'm developing, etc. If I could 'beam' them that'd

> be cool as well... it seems that POSE has all the features you need for

> development but no good way of sharing info between itself and real palm

> devices... well, perhaps someone can implement one of my ideas! :)

Will, there's a utility called "pilot-xfer" that will copy all the PRCs and PDBs (including the MemoPad data, etc.) from your Palm to your hard drive as

individual files; those can then be loaded into the Emulator. The link is in one of the archives.

Neal

Re: POSE and the 'real world' (2nd URL)

Posted by [Will Fisher](#) on April 19, 1999 at 10:58:09:

In Reply to: [Re: POSE and the 'real world'](#) posted by Neal Bridges on April 19, 1999 at 09:40:02:

And the URL for the PilotXfer Win32 front end:

- [PGUI v1.1](#)

Re: POSE and the 'real world'

Posted by [Will Fisher](#) on April 19, 1999 at 10:55:57:

In Reply to: [Re: POSE and the 'real world'](#) posted by Neal Bridges on April 19, 1999 at 09:40:02:

> Will, there's a utility called "pilot-xfer" that will copy all the PRCs and PDBs
> (including the MemoPad data, etc.) from your Palm to your hard drive as
> individual files; those can then be loaded into the Emulator. The link is in
> one of the archives.
> Neal

Neal,

Thanks for the info.. I've hunted around the web and found these two utils which are invaluable so will post their URL's here for everyone:

- [PilotXfer Win32](#)

Re: POSE and the 'real world'

Posted by [Will Fisher](#) on April 19, 1999 at 07:46:32:

In Reply to: [POSE and the 'real world'](#) posted by Will Fisher on April 19, 1999 at 07:42:49:

Darn typos and mismeanings...

[convince POSE it's connected to the 'net so it can do a network hoysynch.]

Hoysynch = Hotsync! :)

[If I could 'beam' them that'd be cool as well...]

I know POSE doesn't support beaming, all I meant was it would be cool if it was possible to beam info, just something else POSE should emulate in the future.

Figured I'd clear those comments up ;)

-Will

INLINE word

Posted by [Philippe de Rochambeau](#) on April 19, 1999 at 05:32:43:

What is an INLINE word? What is it used for?

Many thanks.

Philippe de Rochambeau

Re: INLINE word

Posted by [Neal Bridges](#) on April 19, 1999 at 09:37:12:

In Reply to: [INLINE word](#) posted by Philippe de Rochambeau on April 19, 1999 at 05:32:43:

> What is an INLINE word? What is it used for?

INLINE is used to tell the Quartus Forth compiler to optimize a definition for speed when compiling it into new words; rather than having a call compiled, INLINE words are code-copied into new definitions.

Some 40-odd kernel words (such as DUP, NIP, etc.) are short enough to be marked INLINE.

INLINE should be used extremely sparingly, or it'll quickly lead to code bloat. Frankly, I can't recall the last time I had any cause to use it in an application. Generally you can simply ignore it; it's present for use within the kernel and for temporary source-level bug fixes.

Neal

ANN: Hanoi posted on PilotGear

Posted by [Wayne Carson](#) on April 18, 1999 at 23:24:05:

I posted a version of the Towers of Hanoi puzzle developed using Quartus and RsrcEdit. Let me know what you think. If there is interest, I'll post the source.

Wayne

Re: ANN: Hanoi posted on PilotGear

Posted by [Neal Bridges](#) on April 18, 1999 at 23:31:23:

In Reply to: [ANN: Hanoi posted on PilotGear](#) posted by Wayne Carson on April 18, 1999 at 23:24:05:

> I posted a version of the Towers of Hanoi puzzle developed using Quartus and
> RsrcEdit. Let me know what you think. If there is interest, I'll post the
> source.

Here's the link!

Neal

- [Wayne Carson's Towers Of Hanoi program](#)

Formatting output

Posted by [Barry Marks](#) on April 18, 1999 at 19:53:24:

Can you point me to some documentation on the <# and #> and whatever else goes with them to format the output?

Is that the best way to do it? Basically I want to output 2 hex 0 filled digits.

Thanks,

Barry

Re: Formatting output

Posted by [Neal Bridges](#) on April 18, 1999 at 23:10:37:

In Reply to: [Formatting output](#) posted by Barry Marks on April 18, 1999 at 19:53:24:

> Can you point me to some documentation on the <# and #> and whatever else goes
> with them to format the output?

> Is that the best way to do it? Basically I want to output 2 hex 0 filled
> digits.

Perhaps this code will be illustrative:

```
: .## ( n -- )  
  0 <# # # #> type space ;  
: .hex## ( n -- )  
  base @ >r hex .## r> base ! ;
```

Neal

Re: Formatting output

Posted by [Barry Marks](#) on April 18, 1999 at 23:31:34:

In Reply to: [Re: Formatting output](#) posted by Neal Bridges on April 18, 1999 at 23:10:37:

> Perhaps this code will be illustrative:

```
>  
: .## ( n -- )  
>  0 <# # # #> type space ;  
>  
>  
: .hex## ( n -- )  
>  base @ >r hex .## r> base ! ;  
>
```

That works and will do what I want. Thanks

I know about # and s# now. Are there others or is that all?

Barry

Re: Formatting output

Posted by [Barry Marks](#) on April 19, 1999 at 10:24:45:

In Reply to: [Re: Formatting output](#) posted by Barry Marks on April 18, 1999 at 23:31:34:

> > Perhaps this code will be illustrative:

```
> >
: .## ( n -- )
> >   0 <# # # #> type space ;
> >
> >
: .hex## ( n -- )
> >   base @ >r hex .## r> base ! ;
> >
```

What does the 0 do in the second line? I can't figure out why that works.

Barry

Re: Formatting output

Posted by [Neal Bridges](#) on April 19, 1999 at 10:54:24:

In Reply to: [Re: Formatting output](#) posted by Barry Marks on April 19, 1999 at 10:24:45:

> > > Perhaps this code will be illustrative:

```
> > >
: .## ( n -- )
> > >   0 <# # # #> type space ;
> > >
> > >
: .hex## ( n -- )
> > >   base @ >r hex .## r> base ! ;
> > >
```

> What does the 0 do in the second line? I can't figure out why that works.

It turns the single-cell argument 'n' into an unsigned double-cell number that #

requires.

Neal

Re: Formatting output

Posted by [Neal Bridges](#) on April 18, 1999 at 23:44:54:

In Reply to: [Re: Formatting output](#) posted by Barry Marks on April 18, 1999 at 23:31:34:

> I know about # and s# now. Are there others or is that all?

For formatted numeric output, besides # and #S, there's also HOLD and SIGN.

Neal

Re: Formatting output

Posted by [Barry Marks](#) on April 19, 1999 at 00:39:53:

In Reply to: [Re: Formatting output](#) posted by Neal Bridges on April 18, 1999 at 23:44:54:

> > I know about # and s# now. Are there others or is that all?

> For formatted numeric output, besides # and #S, there's also HOLD and SIGN.

Thanks. Don't you know it's too late on Sunday night to be doing this? :)

Barry

PilRC version 2.3 now available

Posted by [Neal Bridges](#) on April 18, 1999 at 19:25:36:

For those of you who are building resources on the desktop side, as opposed to using RsrcEdit on-board: Wes Cherry has announced a new version of PilRC.

What's new in PilRC 2.3:

- o Parens supported in expressions
- o Font resources (thanks David Turnbull)

- o No limit on the number of forms.
- o Comments anywhere in the .rcp file
- o C style /* */ comments.
- o Support for Hebrew, Japanese and Chinese fonts. (-Fh, -Fj and -F5 and -Fg)
- o Support for 'XXXX' hex constants
- o Support for -rtl flag and | operator (for BiDi Hebrew)
- o Support for Bold12 fonts
- o FILE keyword for STRING (makes it easier to use GCC preprocessor with multi-line strings)

Neal

- [PilRC version 2.3](#)

Addresses, I think

Posted by [Barry Marks](#) on April 18, 1999 at 18:12:53:

I'm trying to make a little hex dump program. To test it I'm trying to set up an array with known data. Then I want to give the address of the array to the hex dump and watch it work.

I keep getting either fatal exceptions or FD FE 0 0 0 0 0. I think it's the way I set up the array but I'm not sure. here's how I did it:

```
cr .( make test data )
create tdata dump-count 2 + allot
: setup dump-count 0 do
i 48 + tdata i + c! loop ;
```

dump-count is 8 and I added 2 just to make sure I don't overrun it while I'm testing.

setup should fill 8 bytes of the array with consecutive numbers.

Am I doing this right?

I think the problem might be that I don't understand how addresses work. I've read that the 68000 has to have even aligned addresses for 16 or 32 bit memory access. I'm not sure if that applies to 8 bit accesses but I don't think it does. I'm using 8 bit accesses.

I also read that there is a relative address and an absolute address. I don't know if I'm using the right one. I'm not sure how relative addresses work. Is that PC relative as in the 6809? Is this something I have to be concerned with to get this done?

Also, do you have a word in Quartus that will do a hex dump? I still want to do this but that would help me see what's going on.

Thanks,

Barry

P.S. Here's the whole program in case you want to see it:

```
\ dump 99-04-15

8 constant dump-count

cr .( define .h )
: .h ( n -- ) \ print n in hex
base swap 16 base !
. base ! ;

cr .( define hex-loop )
: hex-loop ( a -- )
dump-count 0 do
dup i + c@ .h
loop ;

cr .( make test data )
create tdata dump-count 2 + allot
: setup dump-count 0 do
i 48 + tdata i + c! loop ;

cr .( define go )
: go setup [']tdata hex-loop ;
```

Re: Addresses, I think

Posted by [Neal Bridges](#) on April 18, 1999 at 18:51:38:

In Reply to: [Addresses, I think](#) posted by Barry Marks on April 18, 1999 at 18:12:53:

> I'm trying to make a little hex dump program. To test it I'm trying to set up
> an array with known data. Then I want to give the address of the array to the
> hex dump and watch it work.

> I keep getting either fatal exceptions or FD FE 0 0 0 0 0. I think it's the
> way I set up the array but I'm not sure. here's how I did it:

```
> cr .( make test data )
> create tdata dump-count 2 + allot
> : setup dump-count 0 do
> i 48 + tdata i + c! loop ;
>
```

> dump-count is 8 and I added 2 just to make sure I don't overrun it while I'm
> testing.

> setup should fill 8 bytes of the array with consecutive numbers.

> Am I doing this right?

So far so good. 'setup' works as it should.

> I think the problem might be that I don't understand how addresses work. I've
> read that the 68000 has to have even aligned addresses for 16 or 32 bit memory
> access. I'm not sure if that applies to 8 bit accesses but I don't think it
> does. I'm using 8 bit accesses.

C! and C@ are used to store and fetch from 8-bit words, with no concerns about
alignment. @ and ! (and 2@ and 2!) require 16-bit aligned addresses (the
68000 CPU requires it).

> I also read that there is a relative address and an absolute address. I don't
> know if I'm using the right one. I'm not sure how relative addresses work.
Is
> that PC relative as in the 6809? Is this something I have to be concerned
with
> to get this done?

You don't need to worry about that here. All addresses returned by CREATE,
VARIABLE, HERE, etc. are relative to a base register; this is transparent and
something that very rarely needs consideration.

> Also, do you have a word in Quartus that will do a hex dump? I still want to
> do this but that would help me see what's going on.

There's one posted in the last forum archive; I'll dig it up if somebody doesn't
beat me to it.

> P.S. Here's the whole program in case you want to see it:

```
> \ dump 99-04-15
> 8 constant dump-count
> cr .( define .h )
> : .h ( n -- ) \ print n in hex
> base swap 16 base !
> . base ! ;
```

Here's your bug. You need a @ after the first BASE. Try this:

```
: .h ( n -- )
  base @ >r
  hex .
  r> base ! ;

> cr .( define hex-loop )
> : hex-loop ( a -- )
> dump-count 0 do
> dup i + c@ .h
> loop ;
```

This looks fine, but you need a 'drop' at the end to make your stack-diagram
accurate.

```
> cr .( make test data )
> create tdata dump-count 2 + allot
> : setup dump-count 0 do
> i 48 + tdata i + c! loop ;
```

```
> cr .( define go )  
> : go setup ['] tdata hex-loop ;
```

Neal

Re: Addresses, I think

Posted by [Barry Marks](#) on April 18, 1999 at 19:28:57:

In Reply to: [Re: Addresses, I think](#) posted by Neal Bridges on April 18, 1999 at 18:51:38:

Thanks for the information and the debugging. I didn't put the program there for you to debug it. I should have said that. But thanks for doing it.

I'll find the dump command in your archive.

Thanks,

Barry

Re: Addresses, I think

Posted by [Neal Bridges](#) on April 18, 1999 at 19:31:24:

In Reply to: [Re: Addresses, I think](#) posted by Barry Marks on April 18, 1999 at 19:28:57:

```
> Thanks for the information and the debugging. I didn't put the program there  
> for you to debug it. I should have said that. But thanks for doing it.
```

I don't mind in the least Barry; anytime I can help, shout.

Neal

Kudos to Neal for Quatrus!

Posted by [Will Fisher](#) on April 18, 1999 at 09:07:18:

Neal,

I've just read practically the entire page of messages here and I must say that for product support you are tops. I've never used a product in which the support has been so well done. Heck, when in Uni i got VB5 and VC5 and trying to get support from MS was totally impossible withing any reasonable timeframe (unless,

of course, you wanted to give them your credit-card details... yea right). So kudos for a great product and great support. Once I am comfortable with Forth and get to the point where I need to compile my app you can bet I'll be registering Quatrus. Hopefully that will not be to far in the future!

One last thing... are there any good tutorials to Forth that can get people up to speed? I've got tons of source code but trying to read that ANSI Forth document isn't exactly 'easy'. Is there anything slightly easier to digest?

-Will

Re: Kudos to Neal for Quatrus!

Posted by [Neal Bridges](#) on April 18, 1999 at 18:54:13:

In Reply to: [Kudos to Neal for Quatrus!](#) posted by Will Fisher on April 18, 1999 at 09:07:18:

> Neal,
> I've just read practically the entire page of messages here and I must say that
> for product support you are tops. I've never used a product in which the support
> has been so well done. Heck, when in Uni i got VB5 and VC5 and trying to get
> support from MS was totally impossible withing any reasonable timeframe (unless,
> of course, you wanted to give them your credit-card details... yea right).
> So kudos for a great product and great support. Once I am comfortable with Forth
> and get to the point where I need to compile my app you can bet I'll be
> registering Quatrus. Hopefully that will not be to far in the future!

Hey, thanks Will. I appreciate it.

> One last thing... are there any good tutorials to Forth that can get people up
> to speed? I've got tons of source code but trying to read that ANSI Forth
> document isn't exactly 'easy'. Is there anything slightly easier to digest?

If you go to www.forth.com and download the 30-day evaluation of "SwiftForth", you'll find it comes with "The Forth Progammer's Handbook" in Adobe Acrobat (PDF) format. They also sell this book in hardcover, though of course I recommend having a look at the PDF first. You might find it useful.

Also there are a number of links in the 'Online Resources' section of the Quartus Forth manual -- I'm always open to new entries there, so if anyone has come across anything good that's not there, let me know.

Neal

Total Forth Newbie Questions

Posted by [Will Fisher](#) on April 17, 1999 at 12:14:57:

Hi Eveyone,

Well as the topic states... I'm a total newbie to Forth. I must say I like the attraction of this language and have been reading some articles about it on the web. My question tho is this:

Does anyone have a good link to a site that is a tutorial for people who know NOTHING about Forth at all (but do know other languages) and walks thru the basics of Forth and hopefully will explain things like the two stacks, variables (arrays, strings, etc), looping and all the simple basic stuff that it looks like Forth does in a completly different way than I'm used to.

Well thanks in advance for your help!

-Will

Re: Total Forth Newbie Questions

Posted by [Philippe de Rochembeau](#) on April 19, 1999 at 04:02:48:

In Reply to: [Total Forth Newbie Questions](#) posted by Will Fisher on April 17, 1999 at 12:14:57:

Hello,

as a total-beginner at one point myself, I have spent the past few months struggling with Forth in general and QForth in particular.

Viviane Beullens 's electronic book has helped me tremendously getting onto the Forth band-wagon. It is the only book available which explains how Forth cells really work (e.g., why char cells contain values from 0 to 255, what the big-endian/little-endian stuff is about, what double cells are exactly...) Next, get a copy of Brodie's Starting Forth and finally, The Forth Handbook. Once you feel more comfortable with Forth, try to figure out how to do simple things like:

- inputting text
- storing strings
- appending characters to strings
- creating unsigned/double/float/character arrays
- converting between data types (string->float, string->double, unsigned->string, etc.)

Once you have done that, have a glance at Duco's source to get a general idea of how a QForth application works, and try to develop your first simple application,

such as a simple calculator (which is what I am currently doing; once I am done programming the calculator application, I will publish its source on the Web for other beginners to look at). For debugging purposes, I recommend using Win32Forth, which has a built-in debugger (which QForth doesn't have).

I find learning Forth/QForth very rewarding and it has helped me understand other computer languages such as Java.

Philippe de Rochambeau, another beginner

> Hi Eveyone,

> Well as the topic states... I'm a total newbie to Forth. I must say I like the > attraction of this language and have been reading some articles about it on the

> web. My question tho is this:

> Does anyone have a good link to a site that is a tutorial for people who know > NOTHING about Forth at all (but do know other languages) and walks thru the > basics of Forth and hopefully will explain things like the two stacks, variables

> (arrays, strings, etc), looping and all the simple basic stuff that it looks > like Forth does in a completly different way than I'm used to.

> Well thanks in advance for your help!

> -Will

Re: Total Forth Newbie Questions

Posted by [Will Fisher](#) on April 17, 1999 at 12:38:14:

In Reply to: [Total Forth Newbie Questions](#) posted by Will Fisher on April 17, 1999 at 12:14:57:

Well, I went and looked in the archives (no idea how I missed those links before) and found lots of information there... however, if anyone has any ideas or suggestions please feel free to e-mail me! :)

-Will

Re: Total Forth Newbie Questions

Posted by [Erwin Schomburg](#) on April 18, 1999 at 05:06:25:

In Reply to: [Re: Total Forth Newbie Questions](#) posted by Will Fisher on April 17, 1999 at 12:38:14:

> Well, I went and looked in the archives (no idea how I missed those links
> before) and found lots of information there... however, if anyone has any
ideas
> or suggestions please feel free to e-mail me! :)
> -Will

Well, take what little or lot you have learned and try to get some ideas
working. When you fall flat on your face, which you surely will at one point or
other, start thinking. If you do not get around what went wrong, come back here,
lots of brains to help setting you back on track (not least Neal himself, who
seems to have the standard hardwired into his brain 8-)).

/Erwin

Re: Total Forth Newbie Questions

Posted by [Will Fisher](#) on April 18, 1999 at 08:58:32:

In Reply to: [Re: Total Forth Newbie Questions](#) posted by Erwin Schomburg on April 18, 1999 at 05:06:25:

Erwin,

I'll take what little I've learned and play with Quartus and Rsrc Edit and see
what I can accomplish. I must say tho that I am seriously impressed with Quartus
and can not wait to get some 'practical' applications written. I like the
programming paradigm, however, the learning curve is so different from any other
language I've used before. But what the heck... I love to learn new things and
having perused this forum it looks like I'll also have a place to come begging
for help if needed (and I'm sure I will!)

Thanks for your reply!

-Will

--- BEGIN QUOTE ---

Well, take what little or lot you have learned and try to get some ideas
working. When you fall flat on your face, which you surely will at one point
or other, start thinking. If you do not get around what went wrong, come back
here, lots of brains to help setting you back on track (not least Neal himself,
who seems to have the standard hardwired into his brain 8-)).

/Erwin
--- END QUOTE ---

Meet me at PDA Expo

Posted by [Susan Gustafson](#) on April 16, 1999 at 08:26:12:

Hello,

If any Quartus Forth users are attending PDA Expo in Chicago next week (April 20-23), I hope you'll flag me down and say hello. I'd love to see what you are doing with Quartus Forth as I plan to write a review for the AOL PDA Forum's Pocket Press. I'll be wearing a press badge. Perhaps that will help you spot me.

Su

Sorting records in database

Posted by [Laurent Moussault](#) on April 16, 1999 at 05:54:24:

Hello,

Has someone sucessfully used the sorting mechanism of the Data Manager ? I use DmFindSortPositionV10, but my comparison function causes fatal exceptions, whatever I put inside it. It only "works" with...

```
: cmp ;
```

...wich is not really useful !

First : is this function a callback ? If yes, why...

```
: cmp callback end-callback ;
```

...causes fatal exception ?

If someone has already done something similar and can show it to me, it would be great. If not, I'll try to write a minimal version of my problem and post it there.

-- Laurent

Re: Sorting records in database

Posted by [Neal Bridges](#) on April 16, 1999 at 10:56:34:

In Reply to: [Sorting records in database](#) posted by Laurent Moussault on April 16, 1999 at 05:54:24:

```
> Has someone sucessfully used the sorting mechanism of the Data Manager ? I
> use DmFindSortPositionV10, but my comparison function causes fatal
> exceptions, whatever I put inside it. It only "works" with...

> : cmp ;

> ...wich is not really useful !

> First : is this function a callback ? If yes, why...

> : cmp callback end-callback ;

> ...causes fatal exception ?

> If someone has already done something similar and can show it to me, it
> would be great. If not, I'll try to write a minimal version of my problem
> and post it there.
```

Hi Laurent. Yes, it's a callback; I'd guess the 'callback end-callback' fails because it's not returning a meaningful result. I'll try and code an example myself.

Neal

Neil, don't give up on the daVinci!

Posted by [Eric Marschner](#) on April 15, 1999 at 17:27:43:

We need Quartus Forth on the daVinci! Don't give up. We need this (ok I need it, hehehe) So don't give up. :)

Re: Neil, don't give up on the daVinci!

Posted by [Neal Bridges](#) on April 15, 1999 at 21:04:34:

In Reply to: [Neil, don't give up on the daVinci!](#) posted by Eric Marschner on April 15, 1999 at 17:27:43:

```
> We need Quartus Forth on the daVinci! Don't give up. We need this (ok I need
> it, hehehe) So don't give up. :)
```

I haven't thrown the daVinci in the trash yet, Eric, so there's always hope. :)

Neal

RsrcEdit, daVinci keyboard

Posted by [Mike Will](#) on April 15, 1999 at 12:14:30:

Here's some good news. Roger Lawrence will be releasing a new version of RsrcEdit shortly that has some fixes and new features. In particular, there's now a method for selecting border properties of a form, which I needed for popup forms on top of other forms. It's getting close to the point now where Quartus and RsrcEdit are all you need (no more struggling with Java and PilRC).

On another subject, does anyone know whether or not that neat little folding keyboard for the daVinci works with a PalmIII?

Cheers

Mike

Re: RsrcEdit, daVinci keyboard

Posted by [Neal Bridges](#) on April 15, 1999 at 12:42:15:

In Reply to: [RsrcEdit, daVinci keyboard](#) posted by Mike Will on April 15, 1999 at 12:14:30:

> Here's some good news. Roger Lawrence will be releasing a new version of
> RsrcEdit shortly that has some fixes and new features. In particular, there's
> now a method for selecting border properties of a form, which I needed for
> popup forms on top of other forms. It's getting close to the point now where
> Quartus and RsrcEdit are all you need (no more struggling with Java and
PilRC).

Hey, nifty.

> On another subject, does anyone know whether or not that neat little folding
> keyboard for the daVinci works with a PalmIII?

It doesn't, not as it ships -- it has a daVinci-specific connector. But I bought a breadboard and connector yesterday to do some experimentation. I think it puts out RS232 signals, and so might well be adapted to the Palm. I'll keep you posted.

Neal

Re: RsrcEdit, daVinci keyboard

Posted by [Shawn Fitzgerald](#) on June 10, 1999 at 11:42:00:

In Reply to: [Re: RsrcEdit, daVinci keyboard](#) posted by Neal Bridges on April 15, 1999 at 12:42:15:

> > On another subject, does anyone know whether or not that neat little folding
> > keyboard for the daVinci works with a PalmIII?

> It doesn't, not as it ships -- it has a daVinci-specific connector. But I
> bought a breadboard and connector yesterday to do some experimentation. I
think
> it puts out RS232 signals, and so might well be adapted to the Palm. I'll
keep
> you posted.

Found out anything on that???

Thanks

Re: RsrcEdit, daVinci keyboard

Posted by [Neal Bridges](#) on June 10, 1999 at 12:25:58:

In Reply to: [Re: RsrcEdit, daVinci keyboard](#) posted by Shawn Fitzgerald on June 10, 1999 at 11:42:00:

>
> > > On another subject, does anyone know whether or not that neat little
folding
> > > keyboard for the daVinci works with a PalmIII?
> > It doesn't, not as it ships -- it has a daVinci-specific connector. But I
> > bought a breadboard and connector yesterday to do some experimentation. I
> think
> > it puts out RS232 signals, and so might well be adapted to the Palm. I'll
> keep
> > you posted.

> Found out anything on that???

Did some work on it; I believe my above assessment is correct. The next stage
is to attach it to the Palm and do further testing there -- haven't done that
yet.

Neal

Re: RsrcEdit, daVinci keyboard

Posted by [Shawn Fitzgerald](#) on July 07, 1999 at 13:15:00:

In Reply to: [Re: RsrcEdit, daVinci keyboard](#) posted by Neal Bridges on June 10, 1999 at 12:25:58:

> > > I think it puts out RS232 signals, and so might well be adapted to the
> > > Palm. I'll keep you posted.

> > Found out anything on that???

> Did some work on it; I believe my above assessment is correct. The next stage
> is to attach it to the Palm and do further testing there -- haven't done that
> yet.

Neal,
Saw where the DaVinci craddle has a circuit to take the RS232 signal from the
PC and converts it to DaVinci's signal. Since this is a two way process, so
that you can sync the unit, I would imagine you could run the keyboard through
this circuit and produce a standard RS232 signal. Do you have access to a
DaVinci craddle unit? Does anyone have a diagram of the circuit in the
craddle? Specs? I was thinking of getting a craddle and trying it. For 20\$
and the 29\$ for the keyboard you are still spending less then \$80 for a newton
or gotype. :-)

Good luck
Shawn

Re: RsrcEdit, daVinci keyboard

Posted by [Neal Bridges](#) on July 07, 1999 at 14:00:42:

In Reply to: [Re: RsrcEdit, daVinci keyboard](#) posted by Shawn Fitzgerald on July
07, 1999 at 13:15:00:

> Neal,
> Saw where the DaVinci craddle has a circuit to take the RS232 signal from
the
> PC and converts it to DaVinci's signal. Since this is a two way process, so
> that you can sync the unit, I would imagine you could run the keyboard through
> this circuit and produce a standard RS232 signal. Do you have access to a
> DaVinci craddle unit? Does anyone have a diagram of the circuit in the
> craddle? Specs? I was thinking of getting a craddle and trying it. For 20\$
> and the 29\$ for the keyboard you are still spending less then \$80 for a newton
> or gotype. :-)

I have the cradle -- I'd have to tear it apart to interface it as you describe,
but something of the sort might work. For the moment I'm using the cradle as a
cradle, and the daVinci keyboard is still wired to a breadboard for testing -- I

hope to get to it by and by.

Neal

within in core-ext memo

Posted by [Francois Vignon](#) on April 15, 1999 at 12:08:23:

why the 'within' word is defined two times in core-ext ?

Re: within in core-ext memo

Posted by [Neal Bridges](#) on April 15, 1999 at 12:43:58:

In Reply to: [within in core-ext memo](#) posted by Francois Vignon on April 15, 1999 at 12:08:23:

> why the 'within' word is defined two times in core-ext ?

No reason. Thanks for pointing that out, I'll remove one of them (the one without the stack comment, I think).

Neal

Re: s" and strings

Posted by [Neal Bridges](#) on April 15, 1999 at 00:50:39:

In Reply to: [s" and strings](#) posted by Barry Marks on April 15, 1999 at 00:33:49:

> I've been looking at the sample code at the bottom of input.txt to understand
> how it works but I can't find an explanation of s" or other string words.

I've

> played with s" a little and I'm mystified.

> here . 532 ok

> s" abcdefghij" ok

> here . 542 ok

> It seems that I've compiled that string into memory but how would I access it?

Unless you're including the library file *file.txt*, you'll need to use S" from within a definition, for instance:

```
: mystring s" This is my string" ;
```

mystring type

If you include *file.txt*, you can use S" outside of a definition.

> In the example I see:

```
> : string s" default" ; 40 allot
```

> What does that do? it seems that string would make a word called string that will compile "default" into memory with no way to access it. Why allocate 40 bytes at that point? How is that related to the definition of string?

What that example does (it's in *input.txt*) is probably tough to understand; I did it as a quick & dirty way to set up a string for the test code for the input module. It establishes a string 40-some-odd characters long with the word 'default' at the start of it.

> String is then used in a definition like this:

```
> : test string 2dup 40 ...
```

> What does that do?

'test' calls 'get-input'. 'get-input' expects a bevy of parameters on the stack. The example in *input.txt* is probably the most convoluted code in the library, and not the best place to start studying; however, here's a breakdown of the 'test' definition from that module. I've put a stack diagram everywhere it changes:

```
: test
  string ( inputaddr inputlen ) \ our string containing 'default' (length 7)
  2dup \ duplicates the inputaddr and inputlen on the stack for later
  40 ( ... inputaddr inputlen 40 )
  s" Prompt:" ( ... inputaddr inputlen 40 promptaddr promptlen )
  s" Title" ( ... inputaddr inputlen 40 promptaddr promptlen titleaddr titlelen)
  get-input
\ get-input either returns false, or the length of the new input text and true:
  cr if ( inputaddr inputlen newlen )
    ." You entered: " nip ( ... inputaddr newlen )
    type ( )
  else ( inputaddr inputlen )
    ." Cancelled" 2drop ( )
  then
  cr ;
```

> It seems that this is all to put params on the stack for get-input but I can't see how it's doing that.

You're starting in a particularly complex place. Hopefully the above annotation helps somewhat; let me know.

Neal

Re: s" and strings

Posted by [Barry Marks](#) on April 15, 1999 at 01:04:53:

In Reply to: [Re: s" and strings](#) posted by Neal Bridges on April 15, 1999 at 00:50:39:

I think that will help. I still don't really understand what s" does but I understand what string does. I just don't know why. :)

I'm going to follow through and study this some but if you can reccomend a better starting place I'll take a look. I thought this was going to be an easy place to start.

Thanks

Barry

Re: s" and strings

Posted by [Neal Bridges](#) on April 15, 1999 at 01:44:49:

In Reply to: [Re: s" and strings](#) posted by Barry Marks on April 15, 1999 at 01:04:53:

> I think that will help. I still don't really understand what s" does but I
> understand what string does. I just don't know why. :)

S" is an immediate word -- that means it takes action during compilation, rather than just having a call to itself compiled. The action it takes is this: it scans ahead in the input line for a " character, and makes a copy of the characters up to that point in data space. It then compiles code into the current definition that will push the address and length of that string of characters onto the stack at run-time.

> I'm going to follow through and study this some but if you can reccomend a
> better starting place I'll take a look. I thought this was going to be an
> easy place to start.

get-input is a tough place because it does so much; it pops a new window up over the current form with a specified title and prompt, and displays the contents of an existing string for editing. It has to interface with the OS for popping-up the form, editing the field, changing the title and prompt, etc. It could be made simpler and easier to follow; however, it wasn't intended as a teaching model, but rather as as a library function for application developers.

You have two related tasks before you; learning about Forth, and learning about interfacing with the Palm OS.

For learning Forth, have a look at some of the other example code -- for

instance, *calendar.txt* and *easter.txt*, which do no interfacing to the Palm OS.

For learning about Palm OS interfacing, have a look at the sources to Year and Duco. (Note that I'll be updating the source of these two apps soon -- I've done some work on them recently.)

And as always, let me know how I can help!

Neal

Re: s" and strings

Posted by [Barry Marks](#) on April 15, 1999 at 14:14:26:

In Reply to: [Re: s" and strings](#) posted by Neal Bridges on April 15, 1999 at 01:44:49:

> S" is an immediate word -- that means it takes action during compilation, rather than just having a call to itself compiled. The action it takes is this: it scans ahead in the input line for a " character, and makes a copy of the characters up to that point in data space. It then compiles code into the current definition that will push the address and length of that string of characters onto the stack at run-time.

Thats what I was looking for. Thanks.

> > I'm going to follow through and study this some but if you can reccomend a better starting place I'll take a look. I thought this was going to be an easy place to start.

> *get-input* is a tough place because it does so much; it pops a new window up over the current form with a specified title and prompt, and displays the contents of an existing string for editing. It has to interface with the OS for popping-up the form, editing the field, changing the title and prompt, etc. It could be made simpler and easier to follow; however, it wasn't intended as a teaching model, but rather as as a library function for application developers.

I'm not really studying how *get-input* works. I'm studying the sample code at the bottom of *input.txt* that uses *get-input*. I'm trying to figure out how it works so I can use *get-input*.

I'll take your suggestion about *calender.txt* and *easter.txt*. I've been looking at Duco and Year. I think learning to interface with the PalmOS is going to be the bigger hurdle for me.

I really think Quartus needs some serious tutorials. I've looked at the various on-board languages. PocketC was my first choice, since I'm a c programmer, but it's not really c and it's not a serious language. I think even that tiny basic is more powerful. It seems that Quartus is the only reasonable choice for on-board programming.

But how can you get people interested with no documentation? I'm doing this as hobby stuff so if I have to figure it all out I will. Time isn't part of the equation for me. But most people want something they can learn and start making money with as quickly as possible. I think you're missing an opportunity.

Your online support is great and I thank you for that. I was pretty amazed last night in the wee hours when I posted a message and got an immediate reply. Are you providing 24/7 real-time support? Or are you just having too much fun to stop? :)

Barry

Re: s" and strings

Posted by [Neal Bridges](#) on April 15, 1999 at 14:26:25:

In Reply to: [Re: s" and strings](#) posted by Barry Marks on April 15, 1999 at 14:14:26:

> I'll take your suggestion about calender.txt and easter.txt. I've been
> looking at Duco and Year. I think learning to interface with the PalmOS is
> going to be the bigger hurdle for me.

Quartus Forth simplifies the event handling a fair bit, which helps.

> I really think Quartus needs some serious tutorials. I've looked at the
> various on-board languages. PocketC was my first choice, since I'm a c
> programmer, but it's not really c and it's not a serious language. I think
> even that tiny basic is more powerful. It seems that Quartus is the only
> reasonable choice for on-board programming.
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> as hobby stuff so if I have to figure it all out I will. Time isn't part of
> the equation for me. But most people want something they can learn and start
> making money with as quickly as possible. I think you're missing an
> opportunity.

There is a fair amount of documentation available now. Quartus Forth has its own technical manual, and 3Com provides a wealth of free documentation for the Palm OS itself, all of which can be applied to Quartus Forth, as it provides a direct interface to the Palm OS sysstraps. The sources to two complete demonstration apps are available, with more coming. And we've got one tutorial, courtesy of Steven Donahue.

Also, I'm always happy to answer any questions posed in this forum, so the forum itself (and its archives) become a useful repository of information as well.

> Your online support is great and I thank you for that. I was pretty amazed
> last night in the wee hours when I posted a message and got an immediate
> reply. Are you providing 24/7 real-time support? Or are you just having too
> much fun to stop? :)

Something like that. :)

The quickest way for me to provide you with the information you need is to have you ask questions as they arise. As I update the documentation, these answers will be folded in.

Neal

Re: s" and strings

Posted by [Neal Bridges](#) on April 15, 1999 at 01:00:25:

In Reply to: [Re: s" and strings](#) posted by Neal Bridges on April 15, 1999 at 00:50:39:

> > I've been looking at the sample code at the bottom of input.txt to

Sorry Barry; in an effort to clean up something I entered incorrectly, I accidentally snipped your original question out of the forum. Fortunately I've preserved all your text in my reply, above.

Neal

"hotsyncing" POSE on a computer with one serial port

Posted by [Brent DeWitt](#) on April 14, 1999 at 23:33:38:

While not stricktly a Quartus question, it has some implications.

As a registered Quartus user, I would like to be able to "register" Quartus on the POSE emulator (3COM's CoPilot) on my PC (which Neal has said is ok). Now the bad news. The PC has only one serial port. 3COM assumes you can use a null modem cable from one comm port to another and assign POSE to one and your PC conduit to another, which is not an available option for me.

Why does this matter? I can't establish a hotsync name on the POSE emulator, so application registration based on the name fails.

Maybe the broader question is: Is it possible to establish a hotsync name on

the POSE emulator without hotsyncing?

Thanks all,

Brent

Re: "hotsyncing" POSE on a computer with one serial port

Posted by [Neal Bridges](#) on April 14, 1999 at 23:46:03:

In Reply to: ["hotsyncing" POSE on a computer with one serial port](#) posted by Brent DeWitt on April 14, 1999 at 23:33:38:

> As a registered Quartus user, I would like to be able to "register" Quartus on
> the POSE emulator (3COM's CoPilot) on my PC (which Neal has said is ok). Now
> the bad news. The PC has only one serial port. 3COM assumes you can use a
> null modem cable from one comm port to another and assign POSE to one and your
> PC conduit to another, which is not an available option for me.

You don't generally need to actually 'HotSync' the emulator. There's a PRC available that will let you save any PDB or PRC in the emulator out to your hard drive.

> Why does this matter? I can't establish a hotsync name on the POSE emulator,
> so application registration based on the name fails.
> Maybe the broader question is: Is it possible to establish a hotsync name on
> the POSE emulator without hotsyncing?

It is -- at least in the 'seed' version 2.1d26, which I recommend. Choose "Properties" from the right-click menu on the emulator.

Neal

Re: "hotsyncing" POSE on a computer with one serial port

Posted by [Brent DeWitt](#) on April 15, 1999 at 11:50:26:

In Reply to: [Re: "hotsyncing" POSE on a computer with one serial port](#) posted by Neal Bridges on April 14, 1999 at 23:46:03:

> > As a registered Quartus user, I would like to be able to "register" Quartus
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> the POSE emulator (3COM's CoPilot) on my PC (which Neal has said is ok).
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> > null modem cable from one comm port to another and assign POSE to one and
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> available that will let you save any PDB or PRC in the emulator out to your
hard
> drive.

I must be missing something. How does this help with the hotsync name problem?

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emulator,
> > so application registration based on the name fails.
> > Maybe the broader question is: Is it possible to establish a hotsync name
on
> > the POSE emulator without hotsyncing?

> It is -- at least in the 'seed' version 2.1d26, which I recommend. Choose
> "Properties" from the right-click menu on the emulator.

> Neal

I just sent in the paperwork for the seed program. The version I have now
doesn't give me the option. I guess i just need to be patient.

Thanks for the feedback!!

Re: "hotsyncing" POSE on a computer with one serial port

Posted by [Neal Bridges](#) on April 15, 1999 at 11:56:29:

In Reply to: [Re: "hotsyncing" POSE on a computer with one serial port](#) posted by
Brent DeWitt on April 15, 1999 at 11:50:26:

> > You don't generally need to actually 'HotSync' the emulator. There's a PRC
> > available that will let you save any PDB or PRC in the emulator out to your
> > hard drive.

> I must be missing something. How does this help with the hotsync name
> problem?

It doesn't -- I mention it as part of the bigger picture.

> > > Why does this matter? I can't establish a hotsync name on the POSE
> > > emulator, so application registration based on the name fails.
> > > Maybe the broader question is: Is it possible to establish a hotsync name
> > > on the POSE emulator without hotsyncing?

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> > "Properties" from the right-click menu on the emulator.

> I just sent in the paperwork for the seed program. The version I have now
> doesn't give me the option. I guess i just need to be patient.

No need to be patient -- the 'seed' version of the emulator is publically
available, no paperwork required. I've provided the link below.

- ['Seed' version of the Palm OS Emulator](#)

Simple date-manipulation code

Posted by [Neal Bridges](#) on April 14, 1999 at 22:54:40:

Here's some date-manipulation code I wrote and tested on my Palm IIIx in a
coffee-shop this evening. I thought it might be of interest. It's a simplified
version of some of the functionality of *calendar.txt*.

```
: leapyear? ( year -- bool )
  dup 4 mod 0=
  over 100 mod 0<> and
  swap 400 mod 0= or ;

: february-adjust ( year -- adjust )
  leapyear? -1 and 2 + ;

: day>month ( day-in-year year -- month )
  february-adjust over 59 > and +
  1- 12 * 373 + 367 / ;

: month>day ( month year -- day )
  february-adjust over 2 > and swap
  367 * 362 - 12 / 1+ swap - ;

: days-in-month ( month year -- days )
  2dup month>day >r
  swap 1+ swap month>day r> - ;
```

Neal

Re: Simple date-manipulation code

Posted by [Barry Marks](#) on April 15, 1999 at 00:18:08:

In Reply to: [Simple date-manipulation code](#) posted by Neal Bridges on April 14,
1999 at 22:54:40:

```
>
: leapyear? ( year -- bool )
>   dup 4 mod 0=
>   over 100 mod 0<> and
```

```
> swap 400 mod 0= or ;  
>
```

I'm not very comfortable with Forth yet so maybe I'm missing something but if I understand this correctly, it's not Y2K compatible. the 400 year rule is overridden by the 1000 year rule. So a further test is needed to be sure that it's not mod 1000.

Barry

Re: Simple date-manipulation code

Posted by [Neal Bridges](#) on April 15, 1999 at 00:22:23:

In Reply to: [Re: Simple date-manipulation code](#) posted by Barry Marks on April 15, 1999 at 00:18:08:

```
> >  
> : leapyear? ( year -- bool )  
> >   dup 4 mod 0=  
> >   over 100 mod 0<> and  
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> >
```

```
> I'm not very comfortable with Forth yet so maybe I'm missing something but if  
I  
> understand this correctly, it's not Y2K compatible. the 400 year rule is  
> overridden by the 1000 year rule. So a further test is needed to be sure that  
> it's not mod 1000.
```

There's no 1000-year rule. Next year (2000) is a leap year.

A year is a leap year if it is evenly divisible by four. The exception: years ending in '00' are not leap years, unless they are divisible by 400, in which case they are leap years.

Neal

Re: Simple date-manipulation code

Posted by [Barry Marks](#) on April 15, 1999 at 00:37:29:

In Reply to: [Re: Simple date-manipulation code](#) posted by Neal Bridges on April 15, 1999 at 00:22:23:

```
> There's no 1000-year rule. Next year (2000) is a leap year.
```

```
> A year is a leap year if it is evenly divisible by four. The exception:
```

years
> ending in '00' are not leap years, unless they are divisible by 400, in which
> case they are leap years.

Are you sure? I wrote a date library that had to look 100 years ahead (for a criminal court disposition system) but that was about 30 years ago. I thought I remembered that there was a 1000 year rule but it's been a long time.

Barry

Re: Simple date-manipulation code

Posted by [Neal Bridges](#) on April 15, 1999 at 00:55:23:

In Reply to: [Re: Simple date-manipulation code](#) posted by Barry Marks on April 15, 1999 at 00:37:29:

> > There's no 1000-year rule. Next year (2000) is a leap year.
> > A year is a leap year if it is evenly divisible by four. The exception:
> > years ending in '00' are not leap years, unless they are divisible by 400,
> > in which case they are leap years.

> Are you sure? I wrote a date library that had to look 100 years ahead (for a
> criminal court disposition system) but that was about 30 years ago. I thought
> I remembered that there was a 1000 year rule but it's been a long time.

Quite sure. I've provided a link below if you'd like to read up on it.

Neal

- [Much information about leap years and other things.](#)

Getting position of pen tap

Posted by [Marcus Buckerton](#) on April 14, 1999 at 12:50:45:

I have figured out how to detect if the user is tapping, but how do i figure out where (x and y position) of the tap?

-marcus

Re: Getting position of pen tap

Posted by [Neal Bridges](#) on April 14, 1999 at 13:16:34:

In Reply to: [Getting position of pen tap](#) posted by Marcus Buckerton on April 14, 1999 at 12:50:45:

> I have figured out how to detect if the user is tapping, but how do i figure
> out where (x and y position) of the tap?

Use coords@ from *events.txt*.

Neal

Inputting data

Posted by [Barry Marks](#) on April 13, 1999 at 19:14:49:

I want to make a little app that lets you input some data in something like a windows edit box, or in some other way if it's more appropriate on the Pilot, and then prints it into a text field. I've been reading the SDK docs and trying to find an example of this but I still haven't the slightest idea how to go about this.

Can someone point me to an easy to understand example of this if one exists? Or even a difficult to understand one that has the parts that do this pointed out in comments.

Barry the confused.

Re: Inputting data

Posted by [Neal Bridges](#) on April 13, 1999 at 19:46:09:

In Reply to: [Inputting data](#) posted by Barry Marks on April 13, 1999 at 19:14:49:

> I want to make a little app that lets you input some data in something like a
> windows edit box, or in some other way if it's more appropriate on the Pilot,
> and then prints it into a text field. I've been reading the SDK docs and
> trying to find an example of this but I still haven't the slightest idea how
> to
> go about this.

> Can someone point me to an easy to understand example of this if one exists?
> Or even a difficult to understand one that has the parts that do this pointed
> out in comments.

Be confused no more. In the Quartus Forth File Area: *input.txt* in conjunction with *qrsrc.zip* will do the trick.

Neal

Re: Inputting data

Posted by [Barry Marks](#) on April 13, 1999 at 20:24:00:

In Reply to: [Re: Inputting data](#) posted by Neal Bridges on April 13, 1999 at 19:46:09:

> Be confused no more. In the Quartus Forth File Area: *input.txt* in
> conjunction with *qrsrc.zip* will do the trick.

I looked at that and didn't understand it. But I've done a lot of reading since then, so maybe it'll be clearer now.

I have a feeling it's going to be at least several months before I can be confused no more. I suspect the confusion is just beginning. :)

Thanks,

Barry

Re: Inputting data

Posted by [Neal Bridges](#) on April 13, 1999 at 20:58:08:

In Reply to: [Re: Inputting data](#) posted by Barry Marks on April 13, 1999 at 20:24:00:

> > Be confused no more. In the Quartus Forth File Area: *input.txt* in
> > conjunction with *qrsrc.zip* will do the trick.

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> since then, so maybe it'll be clearer now.

There's an example in *input.txt* that accepts a string and displays it; that should help. Let me know if I can help!

> I have a feeling it's going to be at least several months before I can be
> confused no more. I suspect the confusion is just beginning. :)

As long as you're having fun! :)

Neal

Re: Inputting data

Posted by [Barry Marks](#) on April 13, 1999 at 21:18:07:

In Reply to: [Re: Inputting data](#) posted by Neal Bridges on April 13, 1999 at 20:58:08:

> There's an example in *input.txt* that accepts a string and displays it;

> that should help. Let me know if I can help!

I found that example and copied it into a new file and it worked just fine. That will do for now. I'm just trying to learn how to do a few basic things that I can put together into something interesting later.

But what if I wanted to have a form with a few input fields where the user could move back and forth through them at will? Is there an example of that somewhere?

> > I have a feeling it's going to be at least several months before I can be > > confused no more. I suspect the confusion is just beginning. :)

> As long as you're having fun! :)

Forth is fun. I've had Pygmy forth on my palmtop for a long time. I've always enjoyed playing around with it but I've never actually written anything. This is the first time I've really decided to learn the language.

Barry

Barry

Re: Inputting data

Posted by [Neal Bridges](#) on April 13, 1999 at 21:26:32:

In Reply to: [Re: Inputting data](#) posted by Barry Marks on April 13, 1999 at 21:18:07:

> But what if I wanted to have a form with a few input fields where the user > could move back and forth through them at will? Is there an example of that > somewhere?

I don't have a handy example ready, but it's fairly straightforward. I know Mike Will has recently done an app with a number of fields on one form, perhaps he can offer some additional suggestions.

If you don't have RsrcEdit already, download it and install it on your Palm. You can use it to create standard Palm forms with buttons, input fields, labels, etc. After so doing, you can use those resources in your programs -- see the sources for Duco for an example of doing that.

Neal

Re: Inputting data

Posted by [Barry Marks](#) on April 13, 1999 at 22:07:07:

In Reply to: [Re: Inputting data](#) posted by Neal Bridges on April 13, 1999 at 21:26:32:

> If you don't have RsrcEdit already, download it and install it on your Palm.
> You can use it to create standard Palm forms with buttons, input fields,
labels,
> etc. After so doing, you can use those resources in your programs -- see the
> sources for Duco for an example of doing that.

I do have RsrcEdit. It's a nice tool.

I've also spent some time looking over Duco and I guess in a way it does do the same thing as input fields except it's input is just a tap. I hadn't thought of that in connection with inputting text but I'll look that over again. The stuff in Duco along with the stuff in the input example just might give me the stuff I need.

Thanks,

Barry

Type Declaration for Date & DateTime

Posted by [Mike Will](#) on April 13, 1999 at 14:33:26:

Here's my current version of Date and DateTime Types. I haven't found a use yet for TimeType, but I'll implement it when I get a chance. Perhaps Neal could look at DateType and unpackDate to see if I'm doing it right. I'm also working on List and Scrollbar Types, but they're compound, thus requiring a bit more effort and testing.

Mike

```
\ PalmOS Types: Time & Date  
\ 4/13/99 MRW
```

needs struct

```
struct \ DateTime  
  1 cells field dt.second  
  1 cells field dt.minute  
  1 cells field dt.hour
```

```
1 cells field dt.day
1 cells field dt.month
1 cells field dt.year
1 cells field dt.weekDay ( 0=Sunday)
end-struct DateTimeType:
```

```
struct \ Date
\ 7 bits year (since 1904)
\ 4 bits month
\ 5 bits day
1 cells field date.packed
end-struct DateType:
```

```
hex
: unpackDate ( &date. -- y m d )
2@a 2>r
2r@ FE00 and 9 rshift \ year
2r@ 01E0 and 5 rshift \ month
2r> 001F and \ day
;
decimal
```

Re: Type Declaration for Date & DateTime

Posted by [Barry Marks](#) on April 13, 1999 at 16:12:56:

In Reply to: [Type Declaration for Date & DateTime](#) posted by Mike Will on April 13, 1999 at 14:33:26:

Is the . in the structure item's name treated as any other character and used to make it obvious it's a structure item, or does it have special meaning as in c?

Barry

> needs struct

```
> struct \ DateTime
> 1 cells field dt.second
> 1 cells field dt.minute
> 1 cells field dt.hour
> 1 cells field dt.day
> 1 cells field dt.month
> 1 cells field dt.year
> 1 cells field dt.weekDay ( 0=Sunday)
> end-struct DateTimeType:
```

```
> struct \ Date
> \ 7 bits year (since 1904)
> \ 4 bits month
```

```
> \ 5 bits day  
> 1 cells field date.packed  
> end-struct DateType:
```

Re: Type Declaration for Date & DateTime

Posted by [Neal Bridges](#) on April 13, 1999 at 16:16:07:

In Reply to: [Re: Type Declaration for Date & DateTime](#) posted by Barry Marks on April 13, 1999 at 16:12:56:

```
> Is the . in the structure item's name treated as any other character and used  
> to make it obvious it's a structure item, or does it have special meaning as  
in  
> c?
```

There's no special meaning. It's just being used as a separator. Forth names can have any characters (except space) in them, including punctuation.

Neal

Re: Type Declaration for Date & DateTime

Posted by [Neal Bridges](#) on April 13, 1999 at 15:43:11:

In Reply to: [Type Declaration for Date & DateTime](#) posted by Mike Will on April 13, 1999 at 14:33:26:

```
> hex  
> : unpackDate ( &date. -- y m d )  
> 2@a 2>r  
> 2r@ FE00 and 9 rshift \ year  
> 2r@ 01E0 and 5 rshift \ month  
> 2r> 001F and \ day  
> ;  
> decimal
```

The definition above has a few bugs. I'd write it as:

```
: unpackDate ( packeddate -- d m y )  
  dup (binary) 11111 and swap 5 rshift  
  dup (binary) 1111 and swap 4 rshift  
  1904 + ;  
  
: packDate ( d m y -- packeddate )
```

```
1904 - 9 lshift
swap 5 lshift or or ;
```

I've left the actual fetching and storing of the packed date out of these words, for greater flexibility.

Neal

Re: Type Declaration for Date & DateTime

Posted by [Mike Will](#) on April 13, 1999 at 16:54:49:

In Reply to: [Re: Type Declaration for Date & DateTime](#) posted by Neal Bridges on April 13, 1999 at 15:43:11:

> I'd write it as:

>

```
> : unpackDate ( packeddate -- d m y )
>   dup (binary) 11111 and swap 5 rshift
>   dup (binary) 1111 and swap 4 rshift
>   1904 + ;
```

>

>

```
> : packDate ( d m y -- packeddate )
>   1904 - 9 lshift
>   swap 5 lshift or or ;
```

> I've left the actual fetching and storing of the packed date out of these words, for greater flexibility.

> Neal

Very nice. Much cleaner. I forgot about the 1904 because I'm only using the function DateDaysToDate right now to implement a counter that starts at 0/0/0 00:00:00 The (binary) modifier is lovely, I didn't know about it.

Thanks, Neal.

Type declaration for tables

Posted by [Laurent MOUSSAULT](#) on April 13, 1999 at 08:57:04:

Hello everyone,

As this is my first post to this forum, I'd like to thank Neal for his *great* product.

Now, here is my contribution to the PalmOS type declaration libraries. I'm working (playing ?) with tables at the moment, so I defined some constants and a struct for the Event type.

As the first part (eType, penDown, screenX and screenY) of the Event struct is common to all events, I think it should be defined in another library. Or is there a better way ?

Also, I think we should agree on a naming convention. Here I use the same prefix name as in the SDK (tblSelect), but may be this may not be possible for all types...

-- Laurent

```
\ Tables
\ 1999.04.13
```

```
needs struct
```

```
0 >byte
constant checkboxTableItem
1 >byte
constant customTableItem
2 >byte
constant dateTableItem
3 >byte
constant labelTableItem
4 >byte
constant numericTableItem
5 >byte
constant popupTriggerTableItem
6 >byte
constant textTableItem
7 >byte
constant textWithNoteTableItem
8 >byte
constant timeTableItem
9 >byte
constant narrowTextTableItem
```

```
struct \ tblSelect Event
1 cells + ( eType )
1 cells + ( penDown )
1 cells + ( screenX )
```

```
1 cells + ( screenY )
1 cells field tblSelect.tableID
2 cells field tblSelect.pTable
1 cells field tblSelect.row
1 cells field tblSelect.column
end-struct tblSelect
```

Re: Type declaration for tables

Posted by [Neal Bridges](#) on April 13, 1999 at 13:35:49:

In Reply to: [Type declaration for tables](#) posted by Laurent MOUSSAULT on April 13, 1999 at 08:57:04:

> As this is my first post to this forum, I'd like to thank Neal for his
> *great* product.

Thanks!

Neal

Re: Type declaration for tables

Posted by [Neal Bridges](#) on April 13, 1999 at 13:34:54:

In Reply to: [Type declaration for tables](#) posted by Laurent MOUSSAULT on April 13, 1999 at 08:57:04:

> Hello everyone,

> As this is my first post to this forum, I'd like to thank Neal for his
> *great* product.

> Now, here is my contribution to the PalmOS type declaration libraries.
> I'm working (playing ?) with tables at the moment, so I defined some
> constants and a struct for the Event type.

> As the first part (eType, penDown, screenX and screenY) of the Event
> struct is common to all events, I think it should be defined in
> another library. Or is there a better way ?

It can be done like this:

```
\ Tables
\ 1999.04.13
needs struct
```

```
0 >byte constant checkBoxTableWidgetItem
1 >byte constant customTableWidgetItem
2 >byte constant dateTableWidgetItem
3 >byte constant labelTableWidgetItem
4 >byte constant numericTableWidgetItem
5 >byte constant popupTriggerTableWidgetItem
6 >byte constant textTableWidgetItem
7 >byte constant textWithNoteTableWidgetItem
8 >byte constant timeTableWidgetItem
9 >byte constant narrowTextTableWidgetItem
```

```
struct
1 cells eType
1 cells PenDown
1 cells screenX
1 cells screenY
\ 8 cells follow with event-specific information
end-struct EventStruct
```

```
struct \ tblSelect Event
sizeof EventStruct field tblSelect.EventStruct
1 cells field tblSelect.tableID
2 cells field tblSelect.pTable
1 cells field tblSelect.row
1 cells field tblSelect.column
end-struct tblSelect
```

Neal

Re: Type declaration for tables

Posted by [Laurent Moussault](#) on April 14, 1999 at 03:33:01:

In Reply to: [Re: Type declaration for tables](#) posted by Neal Bridges on April 13, 1999 at 13:34:54:

> It can be done like this:

[...]

```
> struct \ tblSelect Event
> sizeof EventStruct field tblSelect.EventStruct
> 1 cells field tblSelect.tableID
> 2 cells field tblSelect.pTable
> 1 cells field tblSelect.row
> 1 cells field tblSelect.column
> end-struct tblSelect
```

Yes, this is better ! :)

Should we put all the event struct in one library, or create a library for each UI object containing all the related events and constants ?

-- Laurent

Re: Type declaration for tables

Posted by [Neal Bridges](#) on April 14, 1999 at 10:37:14:

In Reply to: [Re: Type declaration for tables](#) posted by Laurent Moussault on April 14, 1999 at 03:33:01:

> Should we put all the event struct in one library, or create a library
> for each UI object containing all the related events and constants ?

I'd go with the second approach. Also, as regards naming -- I'd put a trailing
: at the end of the struct-names (i.e. tblSelect:).

Neal

Can't initialize or store values in variables

Posted by [ChRoNiC](#) on April 12, 1999 at 12:42:25:

Correct me if i'm wrong, but they way to initialize a variable after you
declare it is like this:

```
5 varname !
```

```
if this is right, then why isn't it working? when i do:
```

```
varname .
```

```
it usually displays 532, but if i have declared a couple variables in a row, it  
does 534 and 536
```

```
i am sure it is something that i am doing wrong, because i am new to this  
language. PLEASE HELP!!
```

Re: Can't initialize or store values in variables

Posted by [Neal Bridges](#) on April 12, 1999 at 12:53:55:

In Reply to: [Can't initialize or store values in variables](#) posted by ChRoNiC on April 12, 1999 at 12:42:25:

> Correct me if i'm wrong, but they way to initialize a variable after you
> declare it is like this:

> 5 varname !

That part is right.

> if this is right, then why isn't it working? when i do:

> varname .

> it usually displays 532, but if i have declared a couple variables in a row,
it

> does 534 and 536

> i am sure it is something that i am doing wrong, because i am new to this

> language. PLEASE HELP!!

Do

varname @ .

and you'll be off to the races. varname by itself returns the
address of the variable; @ fetches the contents at that memory
address.

Neal

Re: Can't initialize or store values in variables

Posted by [ChRoNiC](#) on April 12, 1999 at 23:22:06:

In Reply to: [Re: Can't initialize or store values in variables](#) posted by Neal
Bridges on April 12, 1999 at 12:53:55:

> > Correct me if i'm wrong, but they way to initialize a variable after you
> > declare it is like this:

> > 5 varname !

> That part is right.

> > if this is right, then why isn't it working? when i do:

> > varname .

> > it usually displays 532, but if i have declared a couple variables in a
row,

> it

> > does 534 and 536

> > i am sure it is something that i am doing wrong, because i am new to this

> > language. PLEASE HELP!!

> Do

> varname @ .

> and you'll be off to the races. varname by itself returns the
> address of the variable; @ fetches the contents at that memory

> address.

> Neal

THANK YOU VERY MUCH...if i get into this, i will definatelly get the registered version!

-mark

Re: Can't initialize or store values in variables

Posted by [Neal Bridges](#) on April 12, 1999 at 23:28:39:

In Reply to: [Re: Can't initialize or store values in variables](#) posted by ChRoNiC on April 12, 1999 at 23:22:06:

> THANK YOU VERY MUCH...if i get into this, i will definatelly get the registered
> version!

Great! Ask any questions that you come up with as you go forward.

Neal

Excited to have found Quartus

Posted by [Susan Gustafson](#) on April 11, 1999 at 21:24:02:

I stumbled on this Web site, having no idea that FORTH was available for the Palm organizers. You have no idea how excited I am to have found it. I don't think I ever had as much sheer fun as when learning and using FORTH on my old Apple II+. I downloaded the app and am writing this note before I even install it. I know in advance that I'll love

Re: Excited to have found Quartus

Posted by [Neal Bridges](#) on April 11, 1999 at 21:34:02:

In Reply to: [Excited to have found Quartus](#) posted by Susan Gustafson on April 11, 1999 at 21:24:02:

> I stumbled on this Web site, having no idea that FORTH was available for the
> Palm organizers. You have no idea how excited I am to have found it. I don't
> think I ever had as much sheer fun as when learning and using FORTH on my old

> Apple II+. I downloaded the app and am writing this note before I even install
> it. I know in advance that I'll love

That's good to hear! Be sure and let me know how I can help.

Neal

PalmOS Type Declarations

Posted by [Mike Will](#) on April 10, 1999 at 23:31:36:

Part 1:

I need to incorporate several controls on a form (1 list, 1 scrollbar, 1 repeating button, etc). Just about all the interaction will be read-only, and the controls are defined either in RsrcEdit or PilRC, not in Quartus code. On a PC, with 64Meg RAM, I would just instantiate all the different required types like the big dumb oaf I am. On the PalmOS, however, I'd like to be a bit more stingy with memory. Would it be possible/wise to instantiate (ALLOT in Forth) a single, general purpose buffer, and reuse it for whatever control type I'd like to query? This could save a couple of hundred bytes in a busy form. I guess what I'm asking is, does the PalmOS *require* a dedicated control buffer for each control on a form?

Part 2:

May I suggest that we combine our efforts to come up with a complete set of STRUCT headers that define all the TYPES in the PalmOS? An example would be the following for the DateTimeType:

```
struct \ PalmOS DateTimeType
  1 cells field second
  1 cells field minute
  1 cells field hour
  1 cells field day
  1 cells field month
  1 cells field year
  1 cells field weekDay (0=Sun)
end-struct DateTimeType:
```

If people could stick to the WinSDK documentation and publish their work here whenever they implement a new type of functionality, it would build a nice library in no time, without overly burdening Neal.

Thanks very much.

Mike

Re: PalmOS Type Declarations

Posted by [Neal Bridges](#) on April 10, 1999 at 23:38:59:

In Reply to: [PalmOS Type Declarations](#) posted by Mike Will on April 10, 1999 at 23:31:36:

> Part 1:

> I need to incorporate several controls on a form (1 list, 1 scrollbar, 1
> repeating button, etc). Just about all the interaction will be read-only, and
> the controls are defined either in RsrcEdit or PilRC, not in Quartus code. On a
> PC, with 64Meg RAM, I would just instantiate all the different required types
> like the big dumb oaf I am. On the PalmOS, however, I'd like to be a bit more
> stingy with memory. Would it be possible/wise to instantiate (ALLOT in Forth)
> a
> single, general purpose buffer, and reuse it for whatever control type I'd
> like
> to query? This could save a couple of hundred bytes in a busy form. I guess
> what I'm asking is, does the PalmOS *require* a dedicated control buffer
> for each control on a form?

I don't quite understand what you mean by 'control buffer'.

> Part 2:

> May I suggest that we combine our efforts to come up with a complete set of
> STRUCT headers that define all the TYPEs in the PalmOS? An example would be
> the
> following for the DateTimeType:

>

```
> struct \ PalmOS DateTimeType
>   1 cells field second
>   1 cells field minute
>   1 cells field hour
>   1 cells field day
>   1 cells field month
>   1 cells field year
>   1 cells field weekDay ( 0=Sun )
> end-struct DateTimeType:
>
```

> If people could stick to the WinSDK documentation and publish their work here
> whenever they implement a new type of functionality, it would build a nice
> library in no time, without overly burdening Neal.

That's a good idea. I'd recommend fieldnames like dt.second, dt.minute, etc. as there may be more than one structure using a given field name.

Part of the process should be grouping related structures into named memos -- you'd want to be able to selectively include some structures and not others.

Neal

Re: PalmOS Type Declarations

Posted by [Mike Will](#) on April 11, 1999 at 12:31:52:

In Reply to: [Re: PalmOS Type Declarations](#) posted by Neal Bridges on April 10, 1999 at 23:38:59:

> I don't quite understand what you mean by 'control buffer'.
I just mean the structured storage area that one passes a reference to for most control functions. Eg. &List. is needed for most List functions.

> That's a good idea. I'd recommend fieldnames like dt.second, dt.minute, etc.
> as there may be more than one structure using a given field name.

Right. Thanks. The TimeDate example I gave was a trivial one, by the way. Most conversion requires considerable digging through the SDK docs to figure out the exact byte-by-byte structure. 3Com seems to have about 15 different names that all seem to refer to a 16 bit cell, and it's sometimes unclear whether a value is bit, byte, cell or double in length because the subTyping is extensive.

> Part of the process should be grouping related structures into named memos --
> you'd want to be able to selectively include some structures and not others.
Ok, well I'll just go ahead and start posting the work I do, hopefully others will join in (or, at least, correct mine).

Cheers

Mike

Re: PalmOS Type Declarations

Posted by [Neal Bridges](#) on April 11, 1999 at 13:11:15:

In Reply to: [Re: PalmOS Type Declarations](#) posted by Mike Will on April 11, 1999 at 12:31:52:

> > I don't quite understand what you mean by 'control buffer'.
> I just mean the structured storage area that one passes a reference to for most control functions. Eg. &List. is needed for most List functions.

That's not a storage area, but rather a pointer to a list object -- returned by FrmGetObjectPtr (or the easier-to-use GetObjectPtr from *forms.txt*). The system returns that pointer and manages any memory needed.

> > That's a good idea. I'd recommend fieldnames like dt.second, dt.minute, etc.
> > as there may be more than one structure using a given field name.
> Right. Thanks. The TimeDate example I gave was a trivial one, by the way. Most
> conversion requires considerable digging through the SDK docs to figure out the
> exact byte-by-byte structure. 3Com seems to have about 15 different names that
> all seem to refer to a 16 bit cell, and it's sometimes unclear whether a value
> is bit, byte, cell or double in length because the subTyping is extensive.

There's a section in the Quartus Forth manual that documents most of that. Let me know if there's something missing.

> > Part of the process should be grouping related structures into named memos
--
> > you'd want to be able to selectively include some structures and not others.
> Ok, well I'll just go ahead and start posting the work I do, hopefully others
> will join in (or, at least, correct mine).

I look forward to seeing what you come up with!

Neal

More info about Example B

Posted by [Barry Marks](#) on April 10, 1999 at 18:33:30:

First, a correction to the error message. It says line 4128, not 4120. I don't know if this matters.

At the bottom of the error message is a button that says Reset. But I've had to reset each time with the pin in the hole in the back.

I've found that if I use make-hw to compile, it crashes but it creates the executable. This crash gives the same error message but it does let me press the reset button to recover.

Running the executable crashes, too. And then I have to poke something in the hole in the back to reset. I get the same error message.

In all cases a soft reset is all that's needed.

Barry

Problem with example B in the tutorial

Posted by [Barry Marks](#) on April 10, 1999 at 18:03:53:

I'm unable to make example B work correctly. A worked just fine.

I get the following error message when I tap the silk screen menu button and select About under Options:

```
MemoryMgrNew.c,  
Line 4120, Invalid handle
```

I've rewritten the whole thing from scratch about 4 or 5 times, code and resources, but I always get the same error. Finally I loaded the copy that comes with the tutorial and the same thing happens with that.

I'm using a new (8 days old) Palm IIIx with the 8 meg memory upgrade. I have hackmaster installed but not hacks activated. I have Flashpro installed but nothing in flash memory.

I'm at a complete loss as to how to procede. I've started looking in the PalmOS docs but it'll be a while before I know enough about that to get any real benefit.

Any ideas? Have other people reported this problem? Are resources possibly handled differently on the IIIx?

Any suggestions or advice would be very much appreciated.

Barry

Re: Problem with example B in the tutorial

Posted by [Dennis Groves](#) on April 10, 1999 at 19:36:25:

In Reply to: [Problem with example B in the tutorial](#) posted by Barry Marks on April 10, 1999 at 18:03:53:

```
> MemoryMgrNew.c,  
> Line 4120, Invalid handle
```

I had this the first time I ran the compiled app, after that it never happened again.

Dennis Groves

Sorry, I have know idea why this happened or if it will ever happen again. I can only afirm that you not the only one, and I also have hackmaster, Flashpro and a IIIx although I don't have a 8mb upgrade.

PS try streak hack it rocks.

Re: Problem with example B in the tutorial

Posted by [Barry Marks](#) on April 10, 1999 at 19:42:40:

In Reply to: [Re: Problem with example B in the tutorial](#) posted by Dennis Groves on April 10, 1999 at 19:36:25:

>
> > MemoryMgrNew.c,
> > Line 4120, Invalid handle

> I had this the first time I ran the compiled app, after that it never happened
> again.

I've run it a number of times. At least 15. It's done it every time.

> Dennis Groves

> Sorry, I have know idea why this happened or if it will ever happen again.
> I can only afirm that you not the only one, and I also have hackmaster, Flashpro
> and a IIIx although I don't have a 8mb upgrade.
> PS try streak hack it rocks.

Thanks to all the posts on the newsgroup I was warned about the streaks and Office Depot let me try units till I got one that didn't streak.

Barry

Re: Problem with example B in the tutorial

Posted by [Neal Bridges](#) on April 10, 1999 at 19:56:31:

In Reply to: [Re: Problem with example B in the tutorial](#) posted by Barry Marks on April 10, 1999 at 19:42:40:

Hi Barry -- try setting the height of the "Options" menu to 12 (during "Step 4" in the Tutorial). From the tutorial, it looks like it gets left at 0, which causes undesirable results.

Let me know if it works; if it does I'll give Steven Donahue the heads-up about it.

Neal

Re: Problem with example B in the tutorial

Posted by [Barry Marks](#) on April 10, 1999 at 20:19:41:

In Reply to: [Re: Problem with example B in the tutorial](#) posted by Neal Bridges on April 10, 1999 at 19:56:31:

I forgot to say thanks for looking into this.

Thanks.

Barry

Re: Problem with example B in the tutorial - Solved!

Posted by [Neal Bridges](#) on April 11, 1999 at 12:19:32:

In Reply to: [Re: Problem with example B in the tutorial](#) posted by Barry Marks on April 10, 1999 at 20:19:41:

> I forgot to say thanks for looking into this.

I went offline with Barry on this one; turns out a duplicate version of the resource database was still hanging around in memory, but one without an "Alert". Once that was deleted, everything worked.

Neal

Re: Problem with example B in the tutorial - Solved!

Posted by [Barry Marks](#) on April 11, 1999 at 16:09:15:

In Reply to: [Re: Problem with example B in the tutorial - Solved!](#) posted by Neal Bridges on April 11, 1999 at 12:19:32:

> > I forgot to say thanks for looking into this.

> I went offline with Barry on this one; turns out a duplicate version of the
> resource database was still hanging around in memory, but one without an
> "Alert". Once that was deleted, everything worked.

Per your request I did post a message explaining what happened. But it doesn't seem to be posted. Any idea what happened?

Barry

Re: Problem with example B in the tutorial - Solved!

Posted by [Neal Bridges](#) on April 11, 1999 at 17:19:56:

In Reply to: [Re: Problem with example B in the tutorial - Solved!](#) posted by Barry Marks on April 11, 1999 at 16:09:15:

> > > I forgot to say thanks for looking into this.

> > I went offline with Barry on this one; turns out a duplicate version of the
> > resource database was still hanging around in memory, but one without an
> > "Alert". Once that was deleted, everything worked.

> Per your request I did post a message explaining what happened. But it
doesn't
> seem to be posted. Any idea what happened?

Hmm, no. I had one other person a few months back say the same thing happened;
I imagine it's a rare quirk in the message board software.

Neal

Re: Problem with example B in the tutorial

Posted by [Barry Marks](#) on April 10, 1999 at 20:18:46:

In Reply to: [Re: Problem with example B in the tutorial](#) posted by Neal Bridges
on April 10, 1999 at 19:56:31:

> Hi Barry -- try setting the height of the "Options" menu to 12 (during "Step
4"
> in the Tutorial). From the tutorial, it looks like it gets left at 0, which
> causes undesirable results.

> Let me know if it works; if it does I'll give Steven Donahue the heads-up
about
> it.

I tried that and it didn't have any effect.

By the way, until you said you hadn't gone through this tutorial I assumed it was yours. When I got that message I also sent an email to Steven Donahue. I found his email address on the last page of the tutorial.

Barry

Re: Problem with example B in the tutorial

Posted by [Neal Bridges](#) on April 10, 1999 at 19:01:38:

In Reply to: [Problem with example B in the tutorial](#) posted by Barry Marks on April 10, 1999 at 18:03:53:

> I'm unable to make example B work correctly. A worked just fine.

> I get the following error message when I tap the silk screen menu button and
> select About under Options:

> MemoryMgrNew.c,
> Line 4120, Invalid handle

> I've rewritten the whole thing from scratch about 4 or 5 times, code and
> resources, but I always get the same error. Finally I loaded the copy that
> comes with the tutorial and the same thing happens with that.

> I'm using a new (8 days old) Palm IIIx with the 8 meg memory upgrade. I have
> hackmaster installed but not hacks activated. I have Flashpro installed but
> nothing in flash memory.

> I'm at a complete loss as to how to procede. I've started looking in the
> PalmOS docs but it'll be a while before I know enough about that to get any
> real benefit.

> Any ideas? Have other people reported this problem? Are resources possibly
> handled differently on the IIIx?

Hi Barry. I haven't tried the examples in Steven's tutorial on a IIIx, but I'll do so and let you know what happens here.

Neal

Hello!

Posted by [Neal Bridges](#) on April 10, 1999 at 12:57:18:

Hi folks; lest you think I've been slacking, rest assured I've been working away. I'll be updating the sources to Year and Duco this weekend, and posting the sources to Swatch. I'm working on the next update, and on Quartus Forth version 2.

By the way, if any of you have a IIIx and have a 'streaking' problem (shadow lines extending beyond vertical lines in the display), try StreakHack from my home page. Aside from reducing the streaking, it gives an 8% speed increase (and lower average battery consumption) on the IIIx -- the speed increase is nice when you're doing a lot of on-board work.

Neal

newbie to systrops

Posted by [Brent DeWitt](#) on April 06, 1999 at 22:32:37:

The learning curve for Quartus seems to be progressing smoothly, but as a newbie to the Palm, I'd appreciate suggestions for the best information/tutorial on what the 800+ systrops actually do! Neal has provided a great compilation of the names and stack diagrams, but I'm still at a loss.

Thanks for your tolerance.....

Brent

Re: newbie to systrops

Posted by [Carl Jacobsen](#) on April 07, 1999 at 13:46:07:

In Reply to: [newbie to systrops](#) posted by Brent DeWitt on April 06, 1999 at 22:32:37:

> The learning curve for Quartus seems to be progressing smoothly, but as a
> newbie to the Palm, I'd appreciate suggestions for the best
> information/tutorial on what the 800+ systrops actually do!

I know exactly how you feel. Neal's suggestion of the Palm SDK docs is right on the money. I'd also like to recommend the O'Reilly book "Palm Programming", which is oriented entirely towards C programming (i.e. no mention of Quartus; perhaps they will in the second edition, eh? :-), but gives a pretty solid explanation of how all those systrops fit together to actually make a program.

Plus, it has the added advantage that you can carry it around with you, rather than having to sit in front of your PC (and isn't that part of the reason for *having* the PalmPilot? :-)

Note that there have been two reprintings, with progressively more bugs fixed (heh, I submitted about half the errata that got fixed in the "3/99" printing :-). They seem to have had trouble keeping gremlins out of the examples, which can be a bit disconcerting when you're trying to learn, but on the whole the book is great. Just see if you can get the 3/99 printing, or get the errata list off their web site and be prepared to sit down with your copy and mark it up...

-- Carl

- [O'Reilly book: Palm Programming](#)

Re: newbie to systrops

Posted by [Neal Bridges](#) on April 06, 1999 at 22:57:34:

In Reply to: [newbie to systrops](#) posted by Brent DeWitt on April 06, 1999 at 22:32:37:

> The learning curve for Quartus seems to be progressing smoothly, but as a
> newbie to the Palm, I'd appreciate suggestions for the best
> information/tutorial on what the 800+ systrops actually do! Neal has provided
> a great compilation of the names and stack diagrams, but I'm still at a loss.

Have you downloaded the SDK documentation (in Adobe Acrobat PDF format) from 3Com? It's a necessary reference for doing Palm programming.

Neal

Re: newbie to systrops

Posted by [Brent DeWitt](#) on April 07, 1999 at 22:12:40:

In Reply to: [Re: newbie to systrops](#) posted by Neal Bridges on April 06, 1999 at 22:57:34:

> > The learning curve for Quartus seems to be progressing smoothly, but as a
> > newbie to the Palm, I'd appreciate suggestions for the best
> > information/tutorial on what the 800+ systrops actually do! Neal has
provided

> > a great compilation of the names and stack diagrams, but I'm still at a
loss.

> Have you downloaded the SDK documentation (in Adobe Acrobat PDF format) from

> 3Com? It's a necessary reference for doing Palm programming.

> Neal

I keep trying, but Netcom seems to be having fits here in Colorado over the last month or so and I have yet to get a complete file. I'm still trying though. Thanks!

bd

Conduit support?

Posted by [Matt](#) on April 06, 1999 at 12:33:01:

I just ran across this page and am very intrigued. (Forth on the PALM is a great fit!)

Do you have any support for conduits? What is your strategy for handling applications running on a host (PC/ MAC / etc.)?

Thanks!

-- Matt

PS: I spent a lot of time working with JForth and loved the language.

Re: Conduit support?

Posted by [Neal Bridges](#) on April 06, 1999 at 12:39:39:

In Reply to: [Conduit support?](#) posted by Matt on April 06, 1999 at 12:33:01:

> I just ran across this page and am very intrigued. (Forth on the PALM is a
> great fit!)

> Do you have any support for conduits? What is your strategy for handling
> applications running on a host (PC/ MAC / etc.)?

Conduit support will come with the ability to handle launch codes, which is coming in the next update. I've never written a conduit, but I'd be interested in working with someone who has to get any kinks out of the system.

Neal

How to extract PRC/PDB from copilot .RAM or .PSF files?

Posted by [Mark Huang](#) on April 05, 1999 at 15:44:00:

I am using copilot (PalmOS Emulator) to learn Quartus Forth programming. There is a tool called eme.exe which can extract the source code in memopad from the .RAM or .PSF files. I am wondering if there is similar tool which can extract PRC/PDB, since I want to use RsrcEdit to build some resource databases on the copilot. There is a way to do it by connecting two COM ports and doing a hotsync on the copilot, but I don't have the required cable.

Thanks,

- Mark

Re: How to extract PRC/PDB from copilot .RAM or .PSF files?

Posted by [Neal Bridges](#) on April 05, 1999 at 16:23:35:

In Reply to: [How to extract PRC/PDB from copilot .RAM or .PSF files?](#) posted by Mark Huang on April 05, 1999 at 15:44:00:

> I am using copilot (PalmOS Emulator) to learn Quartus Forth programming.
> There is a tool called eme.exe which can extract the source code in
> memopad from the .RAM or .PSF files. I am wondering if there is similar
> tool which can extract PRC/PDB, since I want to use RsrcEdit to build
> some resource databases on the copilot. There is a way to do it by
> connecting two COM ports and doing a hotsync on the copilot, but I
> don't have the required cable.

Below is a link to a handy program that will let you extract PRCs and PDBs from within the Emulator.

Neal

- [Extract PRCs and PDBs from the Emulator](#)

Installation to Palm 1000

Posted by Dave on April 02, 1999 at 21:41:38:

I have tried to install evaluation version of Quartus to Pilot 1000 running v.1.0.6 system with 128K standard memory. If I dump all my applications out I have approx 90 K space; I receive a memory mgr.c,line:3840 invalid Handle message when I run program so am assuming I am a little short on space. I would like to know if it is possible to install without upgrading to 2 meg board ? Any help greatly appreciated.

Dave

Re: Installation to Palm 1000

Posted by [Neal Bridges](#) on April 02, 1999 at 21:46:55:

In Reply to: [Installation to Palm 1000](#) posted by Dave on April 02, 1999 at 21:41:38:

> I have tried to install evaluation version of Quartus to Pilot 1000 running
> v.1.0.6 system with 128K standard memory. If I dump all my applications out I
> have approx 90 K space; I receive a memory mgr.c,line:3840 invalid Handle
> message when I run program so am assuming I am a little short on space.
> I would like to know if it is possible to install without upgrading
> to 2 meg board ? Any help greatly appreciated.

With 128K, you're clearly going to be feeling the pinch. If you're desperate to shoe-horn it in, I can compile you a special version that allocates a smaller workspace. Let me know.

Neal

Re: Installation to Palm 1000

Posted by [Dave](#) on April 02, 1999 at 22:07:53:

In Reply to: [Re: Installation to Palm 1000](#) posted by Neal Bridges on April 02, 1999 at 21:46:55:

> > I have tried to install evaluation version of Quartus to Pilot 1000 running
> > v.1.0.6 system with 128K standard memory. If I dump all my applications out I
> > have approx 90 K space; I receive a memory mgr.c,line:3840 invalid Handle
> > message when I run program so am assuming I am a little short on space.

> > I would like to know if it is possible to install without upgrading

> > to 2 meg board ? Any help greatly appreciated.

> With 128K, you're clearly going to be feeling the pinch. If you're desperate to

> shoe-horn it in, I can compile you a special version that allocates a smaller workspace. Let me know.

> Neal

Thanks for feedback, I will use this as an excuse to replace my machine. As a newbie to Forth I much appreciate you excellent web page.

Dave

Re: Installation to Palm 1000

Posted by [Neal Bridges](#) on April 02, 1999 at 22:31:36:

In Reply to: [Re: Installation to Palm 1000](#) posted by Dave on April 02, 1999 at 22:07:53:

> > > I have tried to install evaluation version of Quartus to Pilot 1000 running

> > > v.1.0.6 system with 128K standard memory. If I dump all my applications out

> I

> > > have approx 90 K space; I receive a memory mgr.c,line:3840 invalid Handle message when I run program so am assuming I am a little short on space.

> > > I would like to know if it is possible to install without upgrading

> > > to 2 meg board ? Any help greatly appreciated.

> > With 128K, you're clearly going to be feeling the pinch. If you're desperate

> to

> > shoe-horn it in, I can compile you a special version that allocates a smaller

> > workspace. Let me know.

> > Neal

> Thanks for feedback, I will use this as an excuse to replace my machine. As a newbie to Forth I much appreciate you excellent web page.

Thanks! If you want to sell your Pilot 1000, let me know -- I have a use for one.

Neal

daVinci

Posted by [Darius Clarke](#) on April 02, 1999 at 16:01:56:

Could you wrap the daVinci function calls and item types with your own function call names and your own item types to allow a release w/o relying on daVinci to give you permission for using theirs?

Re: daVinci

Posted by [Neal Bridges](#) on April 02, 1999 at 16:55:14:

In Reply to: [daVinci](#) posted by Darius Clarke on April 02, 1999 at 16:01:56:

> Could you wrap the daVinci function calls and item types with your own function
> call names and your own item types to allow a release w/o relying on daVinci
> to
> give you permission for using theirs?

I could. Then the question would become "where did I get the original information upon which mine is based", and we're back into 'trade secret' territory.

Royal is going to have to come forward with a policy on whether or not they consider the names and parameter types of the function calls in the daVinci ROM to be freely distributable information. In my opinion, they must make the information public; however, if they do, they'll cut the legs out from under the CompanionLink SDK, which is 95% header files.

Neal

Symbol's SPT1500

Posted by [Ray Burke](#) on April 02, 1999 at 15:27:27:

I'm developing an application for Symbol's SPT1500, a Palm III with an integrated barcode scanner. Does Quartus Forth run on the SPT1500 and does it provide access to the barcode scanning functions? Thanks!

Re: Symbol's SPT1500

Posted by [Neal Bridges](#) on April 02, 1999 at 16:52:18:

In Reply to: [Symbol's SPT1500](#) posted by Ray Burke on April 02, 1999 at 15:27:27:

> I'm developing an application for Symbol's SPT1500, a Palm III with an
> integrated barcode scanner. Does Quartus Forth run on the SPT1500 and
> does it provide access to the barcode scanning functions? Thanks!

I believe it will work with the SPT1500, yes. I don't have the hardware to test, but I'd be happy to work with you to overcome any obstacles that may exist. Write to me and let me know what happens; in the meantime I'll review the SDK materials I've downloaded from Symbol.

Neal



Programmers needed to join Char-Ware effort!

Posted by [Barry Ekstrand](#) on April 02, 1999 at 08:59:32:

Friends,

I have begun an effort that I call "Char-Ware" - charitable shareware - where the proceeds go to the Juvenile Diabetes Foundation. I have set up a web site with my first package (called BBEConvert), which is a set of add-in conversion scripts for the RPN program (by Russ Webb). My website is at <http://members.aol.com/ekstrandbb>. Kenny West at PilotGear HQ has graciously joined me in donating his profit off of the registrations of that package and is handling the distribution of funds to JDF for me, so the money goes straight from registration to JDF. It is a simple and efficient way to help raise funds for them. JDF's mission is to fund medical research to find a cure for juvenile diabetes, and JDF is the largest private grantor of funds for this purpose. This year they will fund some \$65 million in juvenile diabetes research projects; they are considered one of the most efficient charities with well over 80% of funds raised going straight to research - overhead is kept low by reliance on a large volunteer effort.

I have a personal interest in helping JDF find a cure for juvenile diabetes (also known as Type 1 diabetes), as my youngest daughter was stricken with the disease last summer. You may not be aware (as I was not before her diagnosis) that juvenile diabetes has no cure and is not outgrown - it is for life. Most of us are more familiar with adult-onset (Type 2) diabetes, but there are significant differences: all juvenile diabetics must take insulin shots several times a day since their pancreas has stopped producing insulin naturally. They must endure getting their fingers stuck 4 to 8 times a day for blood tests to check on their blood sugar level, and they must adhere to a rigid daily schedule for the tests, shots and eating of meals and snacks. It is a life-changing event for both the patient and their family when juvenile diabetes is diagnosed.

The char-ware effort was born out of my desire to merge my interest in programming my Palm device with my desire to help JDF raise funds on an ongoing basis. While I'm continuing to work on my programming skills for this purpose, I am hoping some other "real" programmers will be interested in joining the effort. That is the purpose of this note: I am extending an invitation to others to join the cause.

If you have a small program that you would release as char-ware, donating the proceeds from it to JDF, it would be great. Besides the personal gratitude of my wife and I and other parents of juvenile diabetics, you will benefit from a great feeling knowing you are trading your skills and some of your time for more medical research to find a cure. The registrations donated will also be a charitable contribution tax deduction (at least for the US).

I realize many of you make a living with your programming skills, and I would not be so bold as to ask for you to 'go hungry' in order to support this cause. Nevertheless, I know some of you have great programming skills and can produce some handy utilities and neat applications that folks would be willing to spend \$5 -\$10 or so registering. Would you consider creating one and donating it to the cause?

I hope you'll give this serious consideration. The more research we fund, the faster a cure will be found. If anyone has any questions at all, send me a note. I appreciate your assistance, and I want to thank Neal for his support in agreeing to let me put this posting up on the Quartus discussion forum.

Regards,

Barry Ekstrand

- [Barry's Char-Ware Site](#)

see?

Posted by [Dennis Groves](#) on April 02, 1999 at 07:27:47:

In the olden days I learned alot about how to accomlisch something by being able to decompile a dictionary word with:

see

and view how another had accomplished something. I was wondering if that is still

possible? do we use a different word in the new standard? view or define...

I have written my first hello world app and compiled (what a rush!!) all on my palm 3x!! I will move on to play with duco and hopefully gain greater understatnding via this example. Also streak hack is written onboard the pilot as well I understand from a post in a usenet news group is it possible that you could provide us with sample code for a hackmaster type app (not streakhack) but perhaps some kind of useless hack that gives one a solid example with how to create thier own hack?

Thanks,
Dennis Groves

Re: see?

Posted by [Neal Bridges](#) on April 02, 1999 at 08:32:58:

In Reply to: [see?](#) posted by Dennis Groves on April 02, 1999 at 07:27:47:

> In the olden days I learned alot about how to accomlisch something by being
> able
> to decompile a dictionary word with:
> see
> and view how another had accomplished something. I was wondering if that is
> still
> possible? do we use a different word in the new standard? view or define...

It's still SEE. You'll need to do

needs disasm

first.

> I have written my first hello world app and compiled (what a rush!!) all on my
> palm 3x!! I will move on to play with duco and hopefully gain greater
> understatnding via this example. Also streak hack is written onboard the
> pilot
> as well I understand from a post in a usenet news group is it possible that
> you
> could provide us with sample code for a hackmaster type app (not streakhack)
> but perhaps some kind of useless hack that gives one a solid example with how
> to
> create thier own hack?

Can do. I'm glad you're enjoying it!

Neal

What's this? Competition for Quartus?

Posted by [Carl Jacobsen](#) on April 01, 1999 at 11:57:56:

It seems that some competition may have appeared for our beloved Quartus,
in the field of on-board compilers for the PalmPilot. I just ran across
a homepage, paired with the following press release (shamelessly cut and
pasted off of PilotGear):

Yorick Systems is proud to announce the immediate release of YS Cobol, the first COBOL development tool for creating full-featured applications right on your Palm Computing Platform device. YS Cobol supports the complete ANSI COBOL-85 specification, plus PalmOS API extensions, letting you design both mainframe and handheld computing solutions -- all in the palm of your hand! Learn more at our website: <http://members.aol.com/yoricksys/>

And now I've got to run off and see about getting my watch fixed, by the way, does anyone happen to know what day it is?

-- Carl

- [YS Cobol for the Palm Computing Platform](#)

Re: What's this? Competition for Quartus?

Posted by [E. Ross Helton](#) on April 01, 1999 at 13:18:24:

In Reply to: [What's this? Competition for Quartus?](#) posted by Carl Jacobsen on April 01, 1999 at 11:57:56:

> It seems that some competition may have appeared for our beloved Quartus, > in the field of on-board compilers for the PalmPilot. I just ran across > a homepage, paired with the following press release (shamelessly cut and > pasted off of PilotGear):

Hi Carl;

I looked at that, the competition I see is that it works directly on the Pilot. The disadvantages to it are it requires a min of 750k for the Professional model and 1.5mg on the PalmIII. Also the price is way beyond most users (Over \$300.00). Maybe they will eventually will come down in the price range. However, the amount of ram required is 15 times more that Quartus needs. That is a real bummer!

Make it a good day!

Ross

Re: What's this? Competition for Quartus?

Posted by [Carl Jacobsen](#) on April 01, 1999 at 16:21:20:

In Reply to: [Re: What's this? Competition for Quartus?](#) posted by E. Ross Helton on April 01, 1999 at 13:18:24:

> I looked at that, the competition I see is that it works directly on the > Pilot.

Well, to get serious for a moment, I've spent considerable time looking at ways to program the Pilot **on** the Pilot, and have come to the conclusion that the Pilot and Forth were made for each other. This coming from someone who has spent the past fifteen odd years programming in C, and the last six or seven of that also in Perl -- they're both terrific languages **in their environments**, but I've yet to find anything else that meshes as well with the Pilot's itty bitty 160x160 screen as Forth does (C and Perl both function best with *lots* of white space and indentation). Forth source code tends to be terribly compact, and the structure of writing small words means that you only have to concern yourself with the details of a small bit of code at a time. When I first got a Pilot, I dreamt of having a Pilot version of Perl, but have since realized that in reality such would have been rather clumsy...

Oh, and COBOL would actually be an **exceptionally** bad choice for the Pilot's little screen :-)

One more for the Quartus fan club...
-- Carl

Re: What's this? Competition for Quartus?

Posted by [E. Ross Helton](#) on April 01, 1999 at 17:10:35:

In Reply to: [Re: What's this? Competition for Quartus?](#) posted by Carl Jacobsen on April 01, 1999 at 16:21:20:

When I first got a Pilot, I dreamt of having a Pilot
> version of Perl, but have since realized that in reality such would have
> been rather clumsy...

> Oh, and COBOL would actually be an **exceptionally** bad choice for
> the Pilot's little screen :-)

> One more for the Quartus fan club...
> -- Carl

Hi Carl;

Have never programmed with Perl. Have done several types of Basic going clear back to the earliest available for both Apple and PC. Have also programmed in Visual Basic for Dos and For Windows. Make C++ modules to work with the former. Tried some Pascal. Of all Quartus is the only one that real excites me. I have much to learn. I can sometimes ask the seeming dumbest questions, but this program has the shortest learning curve I have seen.

Of course one of the biggest assets is this discussion group. You can enter a question or comment and get information fairly quickly.

The real key is you get good solid and usable information; thanks to Neal.

Make it a good day!

Ross

Re: What's this? Competition for Quartus?

Posted by [Neal Bridges](#) on April 01, 1999 at 13:37:25:

In Reply to: [Re: What's this? Competition for Quartus?](#) posted by E. Ross Helton on April 01, 1999 at 13:18:24:

> I looked at that, the competition I see is that it works directly on the Pilot.
> The disadvantages to it are it requires a min of 750k for the Professional model
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> \$300.00). Maybe they will eventually will come down in the price range.
> However, the amount of ram required is 15 times more that Quartus needs. That
> is a real bummer!

I have a strong suspicion this product announcement is closely linked with today's date.

Neal

Re: What's this? Competition for Quartus?

Posted by [Erwin Schomburg](#) on April 02, 1999 at 09:10:07:

In Reply to: [Re: What's this? Competition for Quartus?](#) posted by Neal Bridges on April 01, 1999 at 13:37:25:

> I have a strong suspicion this product announcement is closely linked with
> today's date.

> Neal

Strong suspicion, my ass. Jeff Jetton (of Tricorder fame, although he has also written some *really* useful stuff) has had some of us (err, you) again the third time in a row on fools day like he does every year. Remember the screen saver of '97 and the juice belt of last year? The giveaway is always the reference to last years prank (Tasaday company this time). Better still was PilotGear's SoftModem, someone really asked in the German Palm Forum if someone has tested it beyond the connection lost error.

/Erwin

/Erwin

Re: What's this? Competition for Quartus?

Posted by Erwin on April 02, 1999 at 09:35:27:

In Reply to: [Re: What's this? Competition for Quartus?](#) posted by Erwin Schomburg on April 02, 1999 at 09:10:07:

Now we are completely off topic, but, just as a service to them newbies who might have missed the '97 and '98 pranks:

<http://members.aol.com/tasasoft/>

and

<http://members.aol.com/juicebelt/index.html>

also follow the links inside those pages for maximum fun.

/Erwin

Re: What's this? Competition for Quartus?

Posted by [E. Ross Helton](#) on April 01, 1999 at 14:54:57:

In Reply to: [Re: What's this? Competition for Quartus?](#) posted by Neal Bridges on April 01, 1999 at 13:37:25:

Hi Neal;

Even if it isn't. It will never be a competitive product for Quartus. You have a product that is superior, cost efficient and very compact to use.

> I have a strong suspicion this product announcement is closely linked with
> today's date.

> Neal

Thanks again for it!

make it a good say!

Ross

Re: What's this? Competition for Quartus?

Posted by [Neal Bridges](#) on April 01, 1999 at 13:12:42:

In Reply to: [What's this? Competition for Quartus?](#) posted by Carl Jacobsen on April 01, 1999 at 11:57:56:

> It seems that some competition may have appeared for our beloved Quartus,
> in the field of on-board compilers for the PalmPilot. I just ran across
> a homepage, paired with the following press release (shamelessly cut and
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> right on your Palm Computing Platform device. YS Cobol supports the
> complete ANSI COBOL-85 specification, plus PalmOS API extensions,
> letting you design both mainframe and handheld computing solutions --
> all in the palm of your hand! Learn more at our website:
> <http://members.aol.com/yoricksys/>
>

> And now I've got to run off and see about getting my watch fixed,
> by the way, does anyone happen to know what day it is?

As an additional amusing note: I have a partial COBOL compiler written in Forth from a project several years back. So in fact, theoretically it's possible to compile COBOL using Quartus Forth, if you were so perversely inclined. However, I refuse to contribute to so horrible an idea :)

Neal

A question and a problem

Posted by [Philippe de Rochembeau](#) on March 31, 1999 at 17:09:03:

In the code below, I get mis's address by doing "mis drop". Is there a more efficient way of doing that? " ' mis " does not seem to return mis's address.

The code below works fine until it reaches the '[char] + oparr oai + c!' line, which is supposed to store a plus sign at index oai in the oparr array. The first few times I ran that code, I got an 'invalid parameter' message. Now Quartus systematically crashes upon reading that line. Can anyone please tell me why?

Any help on these matters would be much appreciated.

Philippe de Rochambeau

===== code begins =====

```
\ mycalc
needs toolkit
needs core-ext
needs string
needs float-ext

create floatarr 5 cells allot
create oparr 4 chars allot
fvariable total 0e total f!
0 value fai
0 value oai
0 value lli

: mis s" 12+34+6=" ;
: go
mis nip 1 + 1 do
[char] + mis drop i + c@ = if
mis lli /string i min >float drop floatarr fai + f!
fai 1+ to fai
[char] + oparr oai + c!
...
then
loop
;
===== code ends =====
```

Re: A question and a problem

Posted by [Neal Bridges](#) on March 31, 1999 at 17:22:24:

In Reply to: [A question and a problem](#) posted by Philippe de Rochambeau on March 31, 1999 at 17:09:03:

```
> In the code below, I get mis's address by doing "mis drop". Is there a more
> efficient way of doing that? " ' mis " does not seem to return mis's address.
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> which is supposed to store a plus sign at index oai in the oparr array. The
> first few times I ran that code, I got an 'invalid parameter' message. Now
> Quartus systematically crashes upon reading that line. Can anyone please tell
me
> why?
> Any help on these matters would be much appreciated.
> Philippe de Rochambeau
```

Several things here:

```
> ===== code begins =====
```

```
> \ mycalc
> needs toolkit
> needs core-ext
> needs string
> needs float-ext

> create floatarr 5 cells allot
```

This should be '5 floats allot'.

```
> create oparr 4 chars allot
> fvariable total 0e total f!
> 0 value fai
> 0 value oai
> 0 value lli

> : mis s" 12+34+6=" ;
```

You are correct, mis will return the address, and the length. For just the address, do 'mis drop'.

```
> : go
> mis nip 1 + 1 do
> [char] + mis drop i + c@ = if
> mis lli /string i min >float drop floatarr fai + f!
```

'floatarr fai + f!' needs to be 'floatarr fai floats + f!' -- fai is an index into your float array, not an address offset. 'floats' converts it to an address offset.

```
> fai 1+ to fai
> [char] + oparr oai + c!
> ...
> then
> loop
> ;

> ===== code ends =====
```

There's a simpler way to iterate over a string. Here's an example:

```
: type ( c-addr u -- )
  over + swap do
    i c@ emit
  loop ;
```

Neal



DmInsertionSort

Posted by [Ron Doerfler](#) on March 31, 1999 at 15:54:55:

Hi Neal,

I would like to do a DmInsertionSort of the Memo Database records after a memo is edited, in case the title was changed. According to section 6.3 of the book *_Palm Programming: The Developer's Guide_*, the C-code function call would be:

```
err = DmInsertionSort (gdb, (DMComparF*) CompareRecordFunc, 0);
```

where gDB is the database Reference and the third argument is "other". I don't know what to do about the second parameter, and the Palm OS 3.0 documentation confuses me even more, saying that DMComparF is the typedef of a callback used by this type of function, and it seems that the argument refers to the address(?) of a comparison function.

Have you encountered this comparison function, and if so, do you have any suggestions on what to do here?

Thanks!

Ron
(still tying up loose ends)

Re: DmInsertionSort

Posted by [Michael Collas](#) on March 31, 1999 at 16:30:17:

In Reply to: [DmInsertionSort](#) posted by Ron Doerfler on March 31, 1999 at 15:54:55:

> ...

```
> err = DmInsertionSort (gdb, (DMComparF*) CompareRecordFunc, 0);
```

```
> where gDB is the database Reference and the third argument is  
> "other". I don't know what to do about the second parameter,  
> and the Palm OS 3.0 documentation confuses me even more, saying  
> that DMComparF is the typedef of a callback used by this type  
> of function, and it seems that the argument refers to the address(?)  
> of a comparison function.
```

There's a prototype and example of the comparison function in the same book. I haven't got the book with me right now, but from memory the parameters are pointers (or handles?) to the records to be compared, a pointer to the

application info block of the database, and an extra integer value which is passed through to your callback from the last parameter of the DmInsertionSort function call.

To write the callback in Quartus, you need to start the word defining the callback routine with the word 'callback', and end it with the word 'end-callback'. The parameters of the comparison routine will be on the stack (reverse order from the C prototype), and should be left there - ie. copy them using 2dup, pick, etc. The return value of the callback function (-1 for record1 < record2, 0 for equal, and +1 for greater than) should be stored into the d0 register using the 'd0!' word. To pass your callback function to the DmInsertionSort routine, tick the word you define to get it's execution token, then use 'xt>abs' to get an absolute pointer to it's code. It's fairly simple, but a bit of a nightmare if things go wrong - I crashed so bad while I was debugging that I had to do a hard reset and lose all data.

good luck,

Michael Collas

Re: DmInsertionSort

Posted by [Ron Doerfler](#) on March 31, 1999 at 18:53:27:

In Reply to: [Re: DmInsertionSort](#) posted by Michael Collas on March 31, 1999 at 16:30:17:

```
> > ...
> > err = DmInsertionSort (gdb, (DMComparF*) CompareRecordFunc, 0);
> > where gDB is the database Reference and the third argument is
> > "other". I don't know what to do about the second parameter,
> > and the Palm OS 3.0 documentation confuses me even more, saying
> > that DMComparF is the typedef of a callback used by this type
> > of function, and it seems that the argument refers to the address(?)
> > of a comparison function.
> There's a prototype and example of the comparison function in the same book...
> (detailed explanation of callback function snipped)
```

Oh, I didn't realize that the comparison function was discussed elsewhere in the book. That's fine. In fact, given your excellent explanation of what's required, and given that I will just have at most one memo to relocate after editing, I may just write a plain old Quartus word to sequence through the memo titles, doing string compares, and insert the record at the index where it goes. I already extract the titles for the initial memo selection list. If that doesn't pan out, I'll write the callback function like you described and let DmInsertionSort sort it all out.

Thanks, Michael!

Ron

DaVinci Support?

Posted by [Randy Young](#) on March 31, 1999 at 09:15:53:

Sirs,

Is there a version of Quartus for the low end Davinci palmtop? Will there be?

Randy

Re: DaVinci Support?

Posted by [Neal Bridges](#) on March 31, 1999 at 10:02:19:

In Reply to: [DaVinci Support?](#) posted by Randy Young on March 31, 1999 at 09:15:53:

> Is there a version of Quartus for the low end Davinci palmtop? Will there be?

Hi, Randy. Yes, I have that project underway, awaiting a response from Royal as to licensing of the SDK information. The way they're selling the SDK info now, it's apparently wouldn't be legal for me even to use the *names* of the ROM function calls in a Forth implementation.

Unfortunately they're not responding to my requests for information; hopefully I'll hear something soon.

Thanks for your interest!

Neal

Re: DaVinci Support?

Posted by [Mike Will](#) on March 31, 1999 at 11:43:44:

In Reply to: [Re: DaVinci Support?](#) posted by Neal Bridges on March 31, 1999 at 10:02:19:

> Unfortunately they're not responding to my requests for information; hopefully

> I'll hear something soon.

I too have had great difficulty getting anything from Royal. They've hacked together a blatant knock-off of GCC and POSE, hoping that's sufficient to foster the third party development critical to their success. At least 3Com provides Code Warrior and a very open PalmOS. I suspect Royal is being run by a couple of Apple Newton refugees.

Mike

Re: DaVinci Support?

Posted by [Randy Young](#) on April 01, 1999 at 12:24:56:

In Reply to: [Re: DaVinci Support?](#) posted by Mike Will on March 31, 1999 at 11:43:44:

> > Unfortunately they're not responding to my requests for information;
> hopefully
> > I'll hear something soon.

> I too have had great difficulty getting anything from Royal. They've hacked
> together a blatant knock-off of GCC and POSE, hoping that's sufficient to
> foster the third party development critical to their success. At least 3Com
> provides Code Warrior and a very open PalmOS. I suspect Royal is being run by
> a
> couple of Apple Newton refugees.

> Mike

Thanks for the consideration of your reply! My only attraction to the DaVinci was the low price! I would much rather go with the 3com but they're going exactly in the wrong direction of where I wish they were headed... less bells and whistles --- thinner and cheaper. That's what I need.

My regard,
Randy

short cuts

Posted by [E. Ross Helton](#) on March 30, 1999 at 09:47:47:

Hi;

Came across a help for the shortcut options on the Pilot that I thought might help.

Most people probably have the word 'include' set up in their short cuts so they

don't have to type it everytime. However you can also cut out one key stroke by setting up the word with a space at the end of the word. If you do this, when you activate 'include' in Quartus you can begin typing the name of your program without having to make a space then start typing.

Re: short cuts

Posted by [Neal Bridges](#) on March 30, 1999 at 12:26:11:

In Reply to: [short cuts](#) posted by E. Ross Helton on March 30, 1999 at 09:47:47:

> Most people probably have the word 'include' set up in their short cuts so they
> don't have to type it everytime. However you can also cut out one key stroke by
> setting up the word with a space at the end of the word. If you do this, when
> you activate 'include' in Quartus you can begin typing the name of your program
> without having to make a space then start typing.

Thanks, Ross! I've had a space after my 'include' shortcut since the earliest PilotFORTH days, but it's the sort of thing I'd never think to mention.

Neal

Making a program repeat

Posted by [E. Ross Helton](#) on March 29, 1999 at 14:03:25:

Hi;

I was wondering if anyone can help me solve two problems.

One I would like the user to be able to repeat a program without getting out of it and restarting. For example when the user finishes the game and wants to play again, how can that be done within the program?

I know that it must work like a sub-routine or goto. The problem I have had with this is that when the game finishes, it won't allow me to start at the beginning.

Also the code below show how this program comes back to a particular section and then sent user back to a point to enter their information. The problem is that I haven't been able to make the program use an 'if' 'then' statement. The only way I have made it work is to use a series or 'me' (this is the place where there entry is made.

If I use an 'if' 'then' statment it only works the first time through and then the next pass goes to the next line after the 'if' 'then' line.

```
: f1 ( -- )
1 begin while
first
me
me
me
me
." Tap screen for another one" cr
." Graffiti Return to end" cr
begin
ekey dup
0 = while
drop
repeat
no-wait 4 -
repeat
cr ;
: go ( -- )
1001 showform intro Rules page 13 dup cr cr .switches ." switches" randomize
coin f1 ;
```

Re: Making a program repeat

Posted by [Neal Bridges](#) on March 29, 1999 at 15:23:24:

In Reply to: [Making a program repeat](#) posted by E. Ross Helton on March 29, 1999 at 14:03:25:

> I was wondering if anyone can help me solve two problems.

> One I would like the user to be able to repeat a program without getting out
> of it and restarting. For example when the user finishes the game and wants to
> play again, how can that be done within the program?

> I know that it must work like a sub-routine or goto. The problem I have had
> with this is that when the game finishes, it won't allow me to start at the
> beginning.

I'm not clear as to what your code snippet does, but to run a routine repeatedly you'll need to do something similar to this:

```
: setup-game ... ;
: play-game ... ;
: go begin setup-game play-game again ;
```

Neal

Re: Making a program repeat

Posted by [E. Ross Helton](#) on March 30, 1999 at 09:33:17:

In Reply to: [Re: Making a program repeat](#) posted by Neal Bridges on March 29, 1999 at 15:23:24:

Hi Neal;

What you have put below is what I would assume. However, how do you make a line go down in order? Doesn't the order of commands start from the bottom and go up? I see that you have the again command. That is what makes it go again correct? Then my further issue is how I make it do a turn back within the code? For example the player enters a number, then that is processed, the computer gets a turn and then it needs to come back to the player. Do you then put the word 'again' at the end of the line or section where the player enters their initial entry?

```
> : setup-game ... ;
> : play-game ... ;
> : go begin setup-game play-game again ;

> Neal
```

Re: Making a program repeat

Posted by [Barry Marks](#) on April 03, 1999 at 15:05:56:

In Reply to: [Re: Making a program repeat](#) posted by E. Ross Helton on March 30, 1999 at 09:33:17:

```
> What you have put below is what I would assume. However, how do you make a
line
> go down in order? Doesn't the order of commands start from the bottom and go
> up? I see that you have the again command. That is what makes it go again
> correct? Then my further issue is how I make it do a turn back within the
code?
> For example the player enters a number, then that is processed, the computer
> gets a turn and then it needs to come back to the player. Do you then put
the
> word 'again' at the end of the line or section where the player enters their
> initial entry?
```

```
>  
> > : setup-game ... ;  
> > : play-game ... ;  
> > : go begin setup-game play-game again ;
```

I'm new enough at Forth to identify with your confusion.

Begin and again work together to make a loop structure. Everything between those words is executed from left to right over and over again. The sequence (after begin) would be setup-game play-game setup-game play-game over and over until something stopped it. There has to be some mechanism to exit the loop if the player didn't want to play another round. Unless the Pilot lets you just terminate the program. I just got my Pilot yesterday so I'm not sure of the way it works yet.

Following the above code, on a new line, probably would be the word go. That would cause the program to execute.

Barry

Also

Re: Making a program repeat

Posted by [Neal Bridges](#) on March 30, 1999 at 09:42:13:

In Reply to: [Re: Making a program repeat](#) posted by E. Ross Helton on March 30, 1999 at 09:33:17:

```
> Hi Neal;  
  
> What you have put below is what I would assume. However, how do you make a  
> line  
> go down in order? Doesn't the order of commands start from the bottom and go  
> up? I see that you have the again command. That is what makes it go again  
> correct? Then my further issue is how I make it do a turn back within the  
> code?  
> For example the player enters a number, then that is processed, the computer  
> gets a turn and then it needs to come back to the player. Do you then put the  
> word 'again' at the end of the line or section where the player enters their  
> initial entry?
```

Execution of words is linear, top to bottom, unless control-flow words are present, i.e. BEGIN/AGAIN, DO/LOOP, IF/ELSE/THEN, etc. Here's pseudo-code for the game-play you describe:

```
: computer-move ... ;  
: get-number ... ;  
: player-move get-number ... ;  
: go  
  begin
```

```
player-move
computer-move
again ;
```

In 'go', 'again' loops back to 'begin'.

Neal

Database access

Posted by [Jamie Macleod](#) on March 27, 1999 at 18:58:16:

I'm new to Quarus Forth. Is there an example of accessing (create,open,read,write, and close) a database file with Quartus Forth?

Jamie

Re: Database access

Posted by [Neal Bridges](#) on March 27, 1999 at 19:04:37:

In Reply to: [Database access](#) posted by Jamie Macleod on March 27, 1999 at 18:58:16:

```
> I'm new to Quarus Forth. Is there an example of accessing
> (create,open,read,write, and close) a database file with Quartus Forth?
```

Hi, Jamie. I suggest you first look at *newmemo.txt* -- it shows accessing an existing database. I'll put together a quick example of creating a new database and post it shortly.

Neal

Re: Database access

Posted by [Neal Bridges](#) on March 27, 1999 at 20:10:54:

In Reply to: [Re: Database access](#) posted by Neal Bridges on March 27, 1999 at 19:04:37:

```
> > I'm new to Quarus Forth. Is there an example of accessing
> > (create,open,read,write, and close) a database file with Quartus Forth?
```

```
> Hi, Jamie. I suggest you first look at newmemo.txt -- it shows
> accessing an existing database. I'll put together a quick example of creating
```

a
> new database and post it shortly.

As promised: *db-example.txt*, in the Quartus Forth File Area.

Neal

- [File Area](#)

Re: Database access

Posted by [Jamie Macleod](#) on March 29, 1999 at 12:28:25:

In Reply to: [Re: Database access](#) posted by Neal Bridges on March 27, 1999 at 20:10:54:

> > > I'm new to Quarus Forth. Is there an example of accessing
> > > (create,open,read,write, and close) a database file with Quartus Forth?

> > Hi, Jamie. I suggest you first look at *newmemo.txt* -- it shows
> > accessing an existing database. I'll put together a quick example of
creating

> a
> > new database and post it shortly.

> As promised: *db-example.txt*, in the Quartus Forth File Area.

> Neal

Thanks Neal. This will help me greatly. I want to figure out how to do a
simple form with data base behind.

Jamie

Library files available in Outlook 98 format

Posted by [Neal Bridges](#) on March 27, 1999 at 18:57:10:

Courtesy of Brent DeWitt, *qlibpst.zip* is now available in the Quartus
Forth File Area -- it contains all Quartus Forth library files (as at version
1.2.1) in Outlook 98 format.

Neal

- [File Area](#)

Trapping application stop is breaking event handling

Posted by [Steve Gibson](#) on March 26, 1999 at 08:05:35:

I looked at the example in the Quartus Manual of how to trap for application quit, but I can't seem to get it to work correctly alongside ekey.

It will trap the application quit properly, but it disables all other event handling (i.e. all other buttons, menus, etc, become inoperative).

```
-257 constant byeThrow
```

```
: catchStop  
['] key catch  
byeThrow = if  
beep beep  
(bye)  
then ;
```

```
: go show-main  
begin  
ekey do-event  
catchStop  
again ;
```

Re: Trapping application stop is breaking event handling

Posted by [Neal Bridges](#) on March 26, 1999 at 10:51:58:

In Reply to: [Trapping application stop is breaking event handling](#) posted by Steve Gibson on March 26, 1999 at 08:05:35:

> I looked at the example in the Quartus Manual of how to trap for application quit, but I can't seem to get it to work correctly alongside ekey.

> It will trap the application quit properly, but it disables all other event handling (i.e. all other buttons, menus, etc, become inoperative).

```
> -257 constant byeThrow
```

```
> : catchStop  
> ['] key catch  
> byeThrow = if  
> beep beep
```

```
> (bye)
> then ;

> : go show-main
> begin
> ekey do-event
> catchStop
> again ;
```

The code you post here won't do what you want. Try this:

```
: (go) show-main
  begin
    ekey do-event
  again ;

: go ['] (go) catch byeThrow = if beep beep (bye) then ;
```

Neal

Re: Trapping application stop is breaking event handling

Posted by [Steve Gibson](#) on March 26, 1999 at 12:32:34:

In Reply to: [Re: Trapping application stop is breaking event handling](#) posted by Neal Bridges on March 26, 1999 at 10:51:58:

```
> > I looked at the example in the Quartus Manual of how to trap for application
> > quit, but I can't seem to get it to work correctly alongside ekey.

> > It will trap the application quit properly, but it disables all other event
> > handling (i.e. all other buttons, menus, etc, become inoperative).

> > -257 constant byeThrow

> > : catchStop
> > ['] key catch
> > byeThrow = if
> > beep beep
> > (bye)
> > then ;

> > : go show-main
> > begin
> > ekey do-event
> > catchStop
> > again ;
```

> The code you post here won't do what you want. Try this:

>

```
: (go) show-main
>   begin
>     ekey do-event
>   again ;

> : go  ['] (go) catch byeThrow = if beep beep (bye) then ;
>
> Neal
```

That works! Thanks!

-Steve

Using forms so that entered data remains

Posted by [Steve Gibson](#) on March 25, 1999 at 11:18:40:

I've run into a problem with my app. It consists of a Main form and 2 sub-forms. Currently the main form has buttons that load the sub-forms via the `PopupForm` word in the Forms library. The sub-forms have a button that returns the user to the Main form.

When I enter data into the fields in the Main form, go to a sub-form and return to the Main form, my data in the Main form is still there. Apparently the form is never closed, so everything remains as is. Great.

This isn't true, though, with the sub-forms. If I had entered data into one of the sub-forms, if I go back to that form, after having returned to the Main form, all the fields are blank. To get back to the Main form I am having to send a `FrmEraseForm` to the sub-form and then setting the Main form with `FrmSetActiveForm`. But I think the `FrmEraseForm` is what is causing the data in the fields of my sub-form to get wiped out. Or maybe it is the fact that `FrmPopupForm` "initializes" the form. I've tried not using `FrmEraseForm`, and instead used `FrmGotoForm` to return to the Main form, but this erases my fields on the Main form (initializing the form?)!

Is there a way for me to keep all three forms open and just display them when needed? If there is an easy way to do this, it has thus far eluded me (big surprise). I'd rather not have to figure out how to save all the fields and reload them at form initialization each time unless this is the only way to do it.

Thanks,

-Steve

Re: Using forms so that entered data remains

Posted by [Neal Bridges](#) on March 25, 1999 at 11:26:50:

In Reply to: [Using forms so that entered data remains](#) posted by Steve Gibson on March 25, 1999 at 11:18:40:

> I've run into a problem with my app. It consists of a Main form and 2
> sub-forms. Currently the main form has buttons that load the sub-forms via
> the `PopupForm` word in the Forms library. The sub-forms have a button that
> returns the user to the Main form.

> When I enter data into the fields in the Main form, go to a sub-form and
return
> to the Main form, my data in the Main form is still there. Apparently the
form
> is never closed, so everything remains as is. Great.

> This isn't true, though, with the sub-forms. If I had entered data into one
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> the sub-forms, if I go back to that form, after having returned to the Main
> form, all the fields are blank. To get back to the Main form I am having to
> send a `FrmEraseForm` to the sub-form and then setting the Main form with
> `FrmSetActiveForm`. But I think the `FrmEraseForm` is what is causing the data in
> the fields of my sub-form to get wiped out. Or maybe it is the fact that
> `FrmPopupForm` "initializes" the form. I've tried not using `FrmEraseForm`, and
> instead used `FrmGotoForm` to return to the Main form, but this erases my fields
> on the Main form (initializing the form?)!

> Is there a way for me to keep all three forms open and just display them when
> needed? If there is an easy way to do this, it has thus far eluded me (big
> surprise). I'd rather not have to figure out how to save all the fields and
> reload them at form initialization each time unless this is the only way to do
> it.

I believe the answer lies in the Palm OS call **`FrmReturnToForm`** -- try that
instead of **`FrmGotoForm`**. Have a look at *input.txt* for an
example of its use.

I've never tried keeping multiple forms loaded at the same time; I'll be
interested to see how it turns out.

Neal

Re: Using forms so that entered data remains

Posted by [Steve Gibson](#) on March 26, 1999 at 07:22:00:

In Reply to: [Re: Using forms so that entered data remains](#) posted by Neal Bridges on March 25, 1999 at 11:26:50:

> I believe the answer lies in the Palm OS call **FrmReturnToForm** -- try that

> instead of **FrmGotoForm**. Have a look at *input.txt* for an example of its use.

> I've never tried keeping multiple forms loaded at the same time; I'll be interested to see how it turns out.

Well, I couldn't get keeping multiple forms open and switching between them to work. Seems that all of the calls that allow displaying/loading of a particular form first want to erase/close/delete the current form rather than just sending it to the background.

I achieved the functionality that I wanted by saving all of the fields in my popup forms to fvariables upon close. On re-opening, I load all fvariables back into the fields. It works, but I don't know if that is the best way to do it. As one of Murphy's Laws of Combat state: "If it's stupid, but works -- it's not stupid."

-Steve

Re: Using forms so that entered data remains

Posted by [Neal Bridges](#) on March 26, 1999 at 10:54:12:

In Reply to: [Re: Using forms so that entered data remains](#) posted by Steve Gibson on March 26, 1999 at 07:22:00:

> Well, I couldn't get keeping multiple forms open and switching between them to work. Seems that all of the calls that allow displaying/loading of a particular form first want to erase/close/delete the current form rather than just sending it to the background.

> I achieved the functionality that I wanted by saving all of the fields in my popup forms to fvariables upon close. On re-opening, I load all fvariables back into the fields. It works, but I don't know if that is the best way to do it. > As one of Murphy's Laws of Combat state: "If it's stupid, but works -- it's not stupid."

I'm glad you found a working solution. I believe by using PopupForm and

FrmReturnToForm, you could make it work the other way -- that's what *input.txt* does, though I haven't tested it with more than two forms.

Neal

BYE and locked memory

Posted by [Ron Doerfler](#) on March 24, 1999 at 12:28:31:

Hi Neal,

Quick question:

When Quartus exits with BYE, is it true that any allocated memory is released, even though the handle is locked in the process of allocation, or do I have to use FREE first? Also, if, say, the Memo database is opened and locked, is that released when BYE occurs, or do I have to release it myself before calling (BYE)?

Thanks,

Ron Doerfler

Re: BYE and locked memory

Posted by [Neal Bridges](#) on March 24, 1999 at 13:34:24:

In Reply to: [BYE and locked memory](#) posted by Ron Doerfler on March 24, 1999 at 12:28:31:

> When Quartus exits with BYE, is it true that any
> allocated memory is released, even though the handle
> is locked in the process of allocation, or do I have
> to use FREE first? Also, if, say, the Memo database
> is opened and locked, is that released when BYE occurs,
> or do I have to release it myself before calling (BYE)?

Yes, allocated memory is freed when Quartus Forth (or a generated stand-alone app) exits. Record locks aren't necessarily freed, though -- it's wise to release records in use yourself.

Neal

Quitting Quartus

Posted by [Patrick](#) on March 24, 1999 at 08:44:49:

Hi Neal,

You may want to add instructions to the Quick Start section of your manual on how to exit Quartus.

I know it's kinda hard to believe but, ahem, it's just possible that there might be some newbie who might rashly assume that 'QUIT' will exit... (instead of 'bye')

:~)

Re: Quitting Quartus

Posted by [Neal Bridges](#) on March 24, 1999 at 10:29:27:

In Reply to: [Quitting Quartus](#) posted by Patrick on March 24, 1999 at 08:44:49:

> You may want to add instructions to the Quick Start section of your manual on
> how to exit Quartus.

> I know it's kinda hard to believe but, ahem, it's just possible that there
might
> be some newbie who might rashly assume that 'QUIT' will exit... (instead of
> 'bye')

I'd expect most folks would just tap the Applications button and start another app -- but you're right, there's the possibility of confusion between QUIT and BYE. Thanks for the suggestion!

Neal

Re: Quitting Quartus

Posted by [Barry Marks](#) on April 03, 1999 at 15:48:52:

In Reply to: [Re: Quitting Quartus](#) posted by Neal Bridges on March 24, 1999 at 10:29:27:

> > You may want to add instructions to the Quick Start section of your manual
on
> > how to exit Quartus.

> > I know it's kinda hard to believe but, ahem, it's just possible that there
> might
> > be some newbie who might rashly assume that 'QUIT' will exit... (instead of
> > 'bye')
> I'd expect most folks would just tap the Applications button and start
another
> app -- but you're right, there's the possibility of confusion between QUIT
and
> BYE. Thanks for the suggestion!

I'd like to suggest another addition, or at least more clarification. I
installed Quartus and everything was fine but when I tried to install the
libraries it just wouldn't work.

The problem was mine. I just got the Pilot yesterday and I didn't understand
that I had to import them into memo, not just open them. Opening seemed to
work but it wouldnt send it to the Pilot.

I was up till the wee hours working on that one. I finally got it. But a
little more explanation would have been a big help.

By the way, this seems like a pretty comprehensive system. I'm impressed with
all the parts that I understand, so far. I'm new at the Pilot and pretty new
at forth so I'm still pretty confused.

I also appreciate the way you're handling support on this forum. Nice job!

Barry

Barry

Re: Quitting Quartus

Posted by [Neal Bridges](#) on April 03, 1999 at 15:50:59:

In Reply to: [Re: Quitting Quartus](#) posted by Barry Marks on April 03, 1999 at
15:48:52:

> I'd like to suggest another addition, or at least more clarification. I
> installed Quartus and everything was fine but when I tried to install the
> libraries it just wouldn't work.
> The problem was mine. I just got the Pilot yesterday and I didn't understand
> that I had to import them into memo, not just open them. Opening seemed to
> work but it wouldnt send it to the Pilot.
> I was up till the wee hours working on that one. I finally got it. But a
> little more explanation would have been a big help.

I'll add some further direction to the installation section of the manual.
Remember you can always drop me a note if you're having problems; I'm happy to

help.

> By the way, this seems like a pretty comprehensive system. I'm impressed with
> all the parts that I understand, so far. I'm new at the Pilot and pretty new
> at forth so I'm still pretty confused.

> I also appreciate the way you're handling support on this forum. Nice job!

Thanks!

Neal

Question - using Duco source in unregistered Quartus...

Posted by [Stuart C Bunt](#) on March 23, 1999 at 18:34:44:

I am missing something I am sure. I thought I would be able to run the source for Duco in the unregistered interpreter only mode, but it doesn't work.

I have downloaded doco.txt (and year.txt for that matter) but when I "include" the memo from the Quartus command line I get the message:

```
"Exception in file: ducp  
Resource db not found."
```

I have all the library files referred to in the various "needs" statements (I have approx 50 memos which were included in the .zip)

An explanation of the error(s!) of my ways would be appreciated.

Thanks

Re: Question - using Duco source in unregistered Quartus...

Posted by [Neal Bridges](#) on March 23, 1999 at 19:38:11:

In Reply to: [Question - using Duco source in unregistered Quartus...](#) posted by Stuart C Bunt on March 23, 1999 at 18:34:44:

> I am missing something I am sure. I thought I would be able to run the source
> for Duco in the unregistered interpreter only mode, but it doesn't work.

> I have downloaded doco.txt (and year.txt for that matter) but when I "include"
> the memo from the Quartus command line I get the message:

```
> "Exception in file: ducp
```

> Resource db not found."

> I have all the library files referred to in the various "needs" statements (I
> have approx 50 memos which were included in the .zip)

> An explanation of the error(s!) of my ways would be appreciated.

You'll need to install the resource PRC, as well -- it's called *DucoRsrc.PRC* and is included in the same directory with the Duco sources. Then all should be well!

Neal

Re: Question - using Duco source in unregistered Quartus...

Posted by [Stuart C Bunt](#) on March 25, 1999 at 17:35:08:

In Reply to: [Re: Question - using Duco source in unregistered Quartus...](#) posted by Neal Bridges on March 23, 1999 at 19:38:11:

> You'll need to install the resource PRC, as well -- it's called
> *DucoRsrc.PRC* and is included in the same directory with the Duco
> sources. Then all should be well!

OK that works fine. But why? What is in there that is not in the code?

Is *DucoRsrc,prc* a compiled version of all the library calls?

If so, am I right to think that, with the registered version, these would be included into *duco.prc*?

Thanks

Stuart

Re: Question - using Duco source in unregistered Quartus...

Posted by [Neal Bridges](#) on March 25, 1999 at 18:53:19:

In Reply to: [Re: Question - using Duco source in unregistered Quartus...](#) posted by Stuart C Bunt on March 25, 1999 at 17:35:08:

> > You'll need to install the resource PRC, as well -- it's called
> > *DucoRsrc.PRC* and is included in the same directory with the Duco

> > sources. Then all should be well!

> OK that works fine. But why? What is in there that is not in the code?

> Is `DucoRsrc.prc` a compiled version of all the library calls?

> If so, am I right to think that, with the registered version, these would be

> included into `duco.prc`?

`DucoRsrc.PRC` contains the graphical user-interface resources, as created using `RsrcEdit` (or `PilRC` on the desktop). It contains:

- one form containing: a title, 17 calculator buttons, and a copyright notice
- one menu bar (Help/About)
- one alert (About Duco)
- one string (the Help text)
- two icons, one small and one large for the stand-alone PRC.

It contains no actual code of any kind, just the data structures that define the graphical user-interface elements (called "resources" in Palm OS parlance). You are correct that with the registered version, these resources are copied into `Duco.PRC`.

Neal

Re: Question - using Duco source in unregistered Quartus...

Posted by [Barry Marks](#) on April 05, 1999 at 23:10:07:

In Reply to: [Re: Question - using Duco source in unregistered Quartus...](#) posted by Neal Bridges on March 25, 1999 at 18:53:19:

> `DucoRsrc.PRC` contains the graphical user-interface resources, as created using `RsrcEdit` (or `PilRC` on the desktop). It contains:

- > - one form containing: a title, 17 calculator buttons, and a copyright notice
- > - one menu bar (Help/About)
- > - one alert (About Duco)
- > - one string (the Help text)
- > - two icons, one small and one large for the stand-alone PRC.

> It contains no actual code of any kind, just the data structures that define the graphical user-interface elements (called "resources" in Palm OS parlance). You are correct that with the registered version, these resources are copied into `Duco.PRC`.

I'm going through the Hello World tutorial I found in your downloads and it walked me through building simple resources with `RsrcEdit`. Are these resources in a form that's specifically designed for Quartus or is this a general Pilot structure?

As a long time non-gui programmer (kind of new to forth, too) I find this whole structure pretty confusing. I can't see how it all works together. Can you point me to some kind of explanation of that? I've downloaded about everything I can find but there's just so much of it it's hard to find anything. Or, maybe I found it and didn't recognize it. :)

Barry

Barry

Re: Question - using Duco source in unregistered Quartus...

Posted by [Neal Bridges](#) on April 05, 1999 at 23:17:30:

In Reply to: [Re: Question - using Duco source in unregistered Quartus...](#) posted by Barry Marks on April 05, 1999 at 23:10:07:

> I'm going through the Hello World tutorial I found in your downloads and it
> walked me through building simple resources with RsrcEdit. Are these
resources
> in a form that's specifically designed for Quartus or is this a general Pilot
> structure?

RsrcEdit creates and edit standard resources -- the same as are in any Palm program. Quartus Forth works directly with these standard resources.

> As a long time non-gui programmer (kind of new to forth, too) I find this
whole
> structure pretty confusing. I can't see how it all works together. Can you
> point me to some kind of explanation of that? I've downloaded about
everything
> I can find but there's just so much of it it's hard to find anything. Or,
> maybe I found it and didn't recognize it. :)

"Resources" are a kind of programming shorthand. They describe forms, buttons, and controls; the operating system draws them, handles them, and passes simplified information (an 'event') back to a program (written in Quartus Forth, C, assembler, or what-have-you) telling it what happened -- a button was pressed, a list item was selected, a menu option was chosen, a checkbox was ticked, that sort of thing.

GUI systems (Mac, Windows, Palm, etc.) handle things this way for two reasons: first, all controls then get a standard appearance; second, programmers don't have to write their own routines for buttons/menus/checkboxes/lists/etc.

Neal

float-ext

Posted by [Philippe de Rochambeau](#) on March 23, 1999 at 09:22:57:

Could someone please explain what the words in float-ext do?

Thank you very much.

Philippe de Rochambeau

Re: float-ext

Posted by [Neal Bridges](#) on March 23, 1999 at 13:41:28:

In Reply to: [float-ext](#) posted by Philippe de Rochambeau on March 23, 1999 at 09:22:57:

> Could someone please explain what the words in float-ext do?

F~ and **F.** are described in the Standard; that's the best place to start. The other words (-frot, zeroes, #trailing0, etc.) are internal factors used to build **F.** -- the most useful is (**f.**), which turns a float into an ASCII string.

Neal

F: r and ALIGN/ALIGNED

Posted by [Philippe de Rochambeau](#) on March 23, 1999 at 09:21:11:

What does "F: r" stand for? From what I have gathered from the ANS94 documentation, "F: r" refers to the floating-point stack(?). Can anyone enlighten me on this point?

Could someone please explain what ALIGN and ALIGNED are used for in QForth and provide an example?

Thank you.

Philippe de Rochambeau

Re: F: r and ALIGN/ALIGNED

Posted by [Neal Bridges](#) on March 23, 1999 at 13:38:16:

In Reply to: [F: r and ALIGN/ALIGNED](#) posted by Philippe de Rochembeau on March 23, 1999 at 09:21:11:

> What does "F: r" stand for? From what I have gathered from the ANS94
> documentation, "F: r" refers to the floating-point stack(?). Can anyone
enlighten
> me on this point?

I'll try. A stack comment that starts with F: describes the action of a word on
the floating-point stack. For instance:

```
: F. ( F: r -- ) ... ;
```

F. is a word that displays the top float on the floating-point stack; the stack
diagram shows that the float is consumed.

> Could someone please explain what ALIGN and ALIGNED are used for in QForth and
> provide an example?

ALIGNED rounds the number on the stack up to the next cell-sized boundary.
ALIGN does the same thing to HERE. Both are used to ensure that cell-sized (or
larger) data writes occur on even boundaries, as on the DragonBall CPU, writing
cell-sized (or larger) data to an odd address causes a processor exception.

Neal

Re: F: r and ALIGN/ALIGNED

Posted by [Philippe de Rochembeau](#) on March 24, 1999 at 03:53:39:

In Reply to: [Re: F: r and ALIGN/ALIGNED](#) posted by Neal Bridges on March 23, 1999
at 13:38:16:

Neal,

Thank you for the explanation, but could you please provide specific examples of
when you should align cells?

Philippe de Rochembeau

> > What does "F: r" stand for? From what I have gathered from the ANS94
> > documentation, "F: r" refers to the floating-point stack(?). Can anyone
> enlighten
> > me on this point?

> I'll try. A stack comment that starts with F: describes the action of a word
on
> the floating-point stack. For instance:

```
> : F. ( F: r -- ) ... ;  
  
> F. is a word that displays the top float on the floating-point stack; the  
stack  
> diagram shows that the float is consumed.  
  
> > Could someone please explain what ALIGN and ALIGNED are used for in QForth  
and  
> > provide an example?  
  
> ALIGNED rounds the number on the stack up to the next cell-sized boundary.  
> ALIGN does the same thing to HERE. Both are used to ensure that cell-sized (or  
> larger) data writes occur on even boundaries, as on the DragonBall CPU,  
writing  
> cell-sized (or larger) data to an odd address causes a processor exception.  
  
> Neal
```

Re: F: r and ALIGN/ALIGNED

Posted by [Neal Bridges](#) on March 24, 1999 at 13:58:24:

In Reply to: [Re: F: r and ALIGN/ALIGNED](#) posted by Philippe de Rochambeau on
March 24, 1999 at 03:53:39:

```
> Thank you for the explanation, but could you please provide specific examples  
> of when you should align cells?
```

It's not often that you'd need to use ALIGN. Here's a contrived example:

```
create mydata  
char A c, align 14000 ,
```

In this example, after using `c`, to store the 8-bit character A, we need
to align the dataspace pointer before using `,` to store 14000 (a 16-bit
value).

In Quartus Forth (a 16-bit system), **ALIGNED** does the same thing as the
DUP 1 AND + sequence you asked about the other day -- rounds up to the
nearest even value. In fact, you could replace that sequence in **bitmap**
with **ALIGNED** and it would work identically.

Neal

Importing Quartus libraries into PalmPilot emulator

Posted by [Philippe de Rochambeau](#) on March 23, 1999 at 03:59:33:

How do you import QForth libraries into the PalmPilot emulator's memopad other than by doing the complicated synchronization process which is described in the emulator's documentation?

Thank you.

Philippe de Rochambeau

Re: Importing Quartus libraries into PalmPilot emulator

Posted by [Neal Bridges](#) on March 23, 1999 at 10:14:03:

In Reply to: [Importing Quartus libraries into PalmPilot emulator](#) posted by Philippe de Rochambeau on March 23, 1999 at 03:59:33:

> How do you import QForth libraries into the PalmPilot emulator's memopad other
> than by doing the complicated synchronization process which is described in
the
> emulator's documentation?

Download *MemoDB.zip* from the Quartus Forth File Area: Library Files.
It has all library code as a MemoDB.PDB file that can be loaded directly into
the Palm OS Emulator.

Neal

Newbie's questions regarding Forth

Posted by [Philippe de Rochambeau](#) on March 22, 1999 at 12:42:55:

How do you...

- create an appendable string (i.e., a string you can add characters to, similar to a StringBuffer in Java)?
- get substrings from such a string?
- convert substrings in that string to floats (e.g., if the string contains the following data, "1.22+3", how do you get the substring "1.22" and convert it to

a
float?

- convert a float to a string?

One last question, how do you use safe.txt?

Many thanks.

Philippe de Rochambeau

Re: Newbie's questions regarding Forth

Posted by [Neal Bridges](#) on March 22, 1999 at 14:25:07:

In Reply to: [Newbie's questions regarding Forth](#) posted by Philippe de Rochambeau on March 22, 1999 at 12:42:55:

> How do you...

> - create an appendable string (i.e., a string you can add characters to, similar to a StringBuffer in Java)?

The simplest way: **append** in *toolkit.txt* will append one string to the end of another. The buffer for the destination string must be large enough to handle the additional data. *roman.txt* uses **append**.

A more complex solution would involve dynamically allocating and resizing blocks of memory for your strings -- a lot of overhead, rarely required, and not recommended.

> - get substrings from such a string?

/STRING from the STRING wordset is used for calculating substrings. For example:

```
needs toolkit
needs string
create mystring 20 chars allot
: foo s" Data! " ;
mystring 0 foo append
foo append
2dup type cr \ will display "Data! Data! "
\ Equivalent to substr(mystring,3,4):
3 /string 4 min type cr \ will display "a! D"
```

> - convert substrings in that string to floats (e.g., if the string contains the following data, "1.22+3", how do you get the substring "1.22" and convert it to a float?

First, get the substring as per the example above. Converting a string to a float is done using the Standard word **>FLOAT**.

```
: floatstring s" 4.231" ;  
floatstring >float . \ will display -1 indicating a successful conversion  
fs. \ will display 0.42310000E1
```

> - convert a float to a string?

Use (**f.**) from *float.txt*. New version coming very soon; I've enhanced it to allow variable significant digits and decimal places.

> One last question, how do you use *safe.txt*?

Erwin was kind enough to field that one.

Neal

Re: Newbie's questions regarding Forth

Posted by [E. Ross Helton](#) on March 23, 1999 at 11:58:19:

In Reply to: [Re: Newbie's questions regarding Forth](#) posted by Neal Bridges on March 22, 1999 at 14:25:07:

Hey Neal;

Erwin is a new name for me. Maybe I will have to use that now.

Make it a good day!

Ross

> > One last question, how do you use *safe.txt*?

> Erwin was kind enough to field that one. (should be Ross)

> Neal

Re: Newbie's questions regarding Forth

Posted by [Neal Bridges](#) on March 23, 1999 at 13:32:54:

In Reply to: [Re: Newbie's questions regarding Forth](#) posted by E. Ross Helton on March 23, 1999 at 11:58:19:

> Hey Neal;

> Erwin is a new name for me. Maybe I will have to use that now.

Sorry 'bout that Ross :)

Neal

Re: Newbie's questions regarding Forth

Posted by [Neal Bridges](#) on March 22, 1999 at 19:21:09:

In Reply to: [Re: Newbie's questions regarding Forth](#) posted by Neal Bridges on March 22, 1999 at 14:25:07:

> Use (**f.**) from *float.txt*. New version coming very soon; I've
> enhanced it to allow variable significant digits and decimal places.

I mis-typed that -- the correct file is *float-ext.txt*. Sorry for any confusion.

Neal

Re: Newbie's questions regarding Forth

Posted by [E. Ross Helton](#) on March 22, 1999 at 13:08:57:

In Reply to: [Newbie's questions regarding Forth](#) posted by Philippe de Rochambeau on March 22, 1999 at 12:42:55:

Hi Philippe;

I cannot answer you first question fully, but I can answer the one about 'safe text'.

Below is an example of a short file I use which starts 'safe text'. The file name is question(testrchill) is for a file I was working on. You will want to give it your own name. Notice I have 'needs safe' which includes the safe text program. Also the other 'needs' is the name of the program which I want tested. After making up this file you run it in Quartus as you would any program and it will check for the errors and give you a report.

\ testrchill

needs safe
needs rchill

Make it a good day!

Ross

> How do you...

> - create an appendable string (i.e., a string you can add characters to,
similar
> to a StringBuffer in Java)?

> - get substrings from such a string?

> - convert substrings in that string to floats (e.g., if the string contains
the
> following data, "1.22+3", how do you get the substring "1.22" and convert it
to a
> float?

> - convert a float to a string?

> One last question, how do you use safe.txt?

> Many thanks.

> Philippe de Rochambeau

ALLOCATE again!!

Posted by [Ron Doerfler](#) on March 22, 1999 at 00:24:52:

Hi Neal,

I am puzzled. If I start up Quartus without including
my code (which is very large) and I execute the word
MYTEST given by the following definition:

```
variable myaddr  
:MYTEST 100 allocate . myaddr ! 33 myaddr @ ! ;
```

then I get a zero emitted (so there is no error
generated by the ALLOCATE) and an ok. Also,
myaddr contains a 16-bit address of about 800 decimal.

However, if this word is defined in my included code,
the execution of it results in a zero again
(which is good) followed by the message

```
"MYTEST? invalid memory address."  
myaddr now contains a 16-bit address like -2008 decimal.
```

Does this mean that it lies beyond the 32K(?) limit of the dynamic memory allowed? How could I have eaten all that up? I do know that my code is large enough that when I run CSUNUSED I get about 4500 bytes left (although I can trim down a LOT of unused words in included library files--do I have any other option if I run out?). Also, if I run the command MEM, I get two double numbers out of around 67,000 decimal each. I tried that trick of ALLOting and de-ALLOting a large block to avoid base pointer changes affecting the ALLOCATE word, even though I'm only doing allocations at run-time, right? It didn't help, anyway. Finally, could I just use the 32-bit memory locking mechanism of MemHandleNew (which I did elsewhere before I discovered the word ALLOCATE) to get around this? ALLOCATE seems to be defined in that manner, but with the pointer changed by >rel to a 16-bit address. Another option is to create a record in a database, but that seems like an extreme option. I'm running PalmOS 3.0.

Thanks for your help!! This forum is a great help to me, and I'm using a lot of code submitted by you and other folks here--perhaps I can contribute some myself as I go.

Ron Doerfler
(surprised and relieved that the stand-alone executable ends up at only 10K so far)

Re: ALLOCATE again!!

Posted by [Neal Bridges](#) on March 22, 1999 at 08:27:41:

In Reply to: [ALLOCATE again!!](#) posted by Ron Doerfler on March 22, 1999 at 00:24:52:

```
> I am puzzled. If I start up Quartus without including  
> my code (which is very large) and I execute the word  
> MYTEST given by the following definition:  
  
> variable myaddr  
> :MYTEST 100 allocate . myaddr ! 33 myaddr @ ! ;  
  
> then I get a zero emitted (so there is no error  
> generated by the ALLOCATE) and an ok. Also,  
> myaddr contains a 16-bit address of about 800 decimal.  
  
> However, if this word is defined in my included code,
```

> the execution of it results in a zero again
> (which is good) followed by the message
> "MYTEST? invalid memory address."
> myaddr now contains a 16-bit address like -2008 decimal.

It sounds like you're running *safe.txt*; it may be misreporting an error for some addresses returned by ALLOCATE. I'll check. Try your code without *safe.txt*, let me know what happens.

> Does this mean that it lies beyond the 32K(?) limit
> of the dynamic memory allowed? How could I have
> eaten all that up? I do know that my code is large
> enough that when I run CSUNUSED I get about 4500
> bytes left (although I can trim down a LOT of unused
> words in included library files--do I have any other
> option if I run out?).

CSUNUSED reports the amount of free codespace; UNUSED reports the amount of free dataspace. They're unrelated figures.

In terms of available codespace, *safe.txt* will bloat your generated code somewhat. There's still some slack available in the workspace; let me know if you're out of space -- you'll be the first to have written so large a program. If I may ask, what are you working on?

> Thanks for your help!! This forum is a great help to me,
> and I'm using a lot of code submitted by you and other
> folks here--perhaps I can contribute some myself as I go.

> Ron Doerfler
> (surprised and relieved that the stand-alone executable
> ends up at only 10K so far)

I like that!

Neal

Re: ALLOCATE again

Posted by [Ron Doerfler](#) on March 22, 1999 at 16:37:28:

In Reply to: [Re: ALLOCATE again!!](#) posted by Neal Bridges on March 22, 1999 at 08:27:41:

Hi Neal,

Thanks for your response!

> > However, if this word is defined in my included code,
> > the execution of it results in a zero again
> > (which is good) followed by the message
> > "MYTEST? invalid memory address."
> > myaddr now contains a 16-bit address like -2008 decimal.

> It sounds like you're running safe.txt; it may be
> misreporting an error for some addresses returned by ALLOCATE.
> I'll check. Try your code without safe.txt, let me know what happens.

It works without complaint without safe.txt, so I guess(?)
it's OK. The address is now around 2000 instead of -2000,
though, so I'm not sure if this is a great test. I never
suspected safe.txt, but I did notice later that the standalone
executable seemed to work fine. However, I REALLY like using
safe.txt, so I think I'll use MemHandleNew directly to allocate
memory and just use the 32-bit pointer like I did before so
safe.txt won't complain.

> CSUNUSED reports the amount of free codespace; UNUSED reports
> the amount of free dataspace. They're unrelated figures.

Well, in that case, UNUSED returns 256. I don't know how
to interpret this. It returns 254 without including any of my code.

> If I may ask, what are you working on?

No secret to anyone here. I started on this program as an
exercise to learn Quartus and the PalmOS in preparation for
taking on a more serious project. Well, it just kept growing
and I got more into it. It's a new memo editor with touchscreen
entry of characters rather than Graffiti or the tiny keyboard.
It's not a new thought, but I think it's a superior implementation.
However, I still don't know how practical it is 8^).

It has three screen overlays containing character sets, switchable
with the other thumb by tapping the two Graffiti entry areas,
and it supports cut, paste, etc. (Actually, most all the
keys are identified along the edge, so hardly any text is covered
by a key letter, and even those can be removed if desired.)
Letters go uppercase when pressed for longer than .75 sec,
and caps-lock goes on if a letter is pressed for longer than
1.5 sec. The editing part is done, and now I'm writing my
own memo selection front end (which I think I will be spinning off
as a contribution here) that is simpler than re-writing the
memopad.c from the Palm source. Everything is designed to be
done without a stylus, although one can be used.

It's somewhat involved partly because I have to intercept and
re-define Field events and such to do things my way--for example, a
pen-down triggers a character insertion rather than just relocating
the cursor; for scrolling, the "window" is moved rather than
the text so the cursor line is always at the same position on
the screen; for the backspace touchkey and hardkeys, auto-
repeating is done; and the Graffiti area now has a new use.
Well, you get the idea--it's so fun I'm still going at it,
even if it's not ultimately the most useful thing in the world.
It's been very educational.

Cheers,

Ron Doerfler

Re: ALLOCATE again

Posted by [Neal Bridges](#) on March 22, 1999 at 17:12:47:

In Reply to: [Re: ALLOCATE again](#) posted by Ron Doerfler on March 22, 1999 at 16:37:28:

> It works without complaint without safe.txt, so I guess(?)
> it's OK. The address is now around 2000 instead of -2000,
> though, so I'm not sure if this is a great test. I never
> suspected safe.txt, but I did notice later that the standalone
> executable seemed to work fine. However, I REALLY like using
> safe.txt, so I think I'll use MemHandleNew directly to allocate
> memory and just use the 32-bit pointer like I did before so
> safe.txt won't complain.

I'll fix *safe.txt*.

> > CSUNUSED reports the amount of free codespace; UNUSED reports
> > the amount of free dataspace. They're unrelated figures.

> Well, in that case, UNUSED returns 256. I don't know how
> to interpret this. It returns 254 without including any of my code.

UNUSED indicates the amount of currently free dataspace. The actual figure fluctuates as dataspace is dynamically resized.

> > If I may ask, what are you working on?

[description snipped]

That sounds really interesting. I'd like to have a look, if you feel like sharing. :)

Neal

Re: ALLOCATE again

Posted by [Ron Doerfler](#) on March 22, 1999 at 18:10:02:

In Reply to: [Re: ALLOCATE again](#) posted by Neal Bridges on March 22, 1999 at 17:12:47:

Hi Neal,

> [description snipped]

> That sounds really interesting. I'd like to have a look, if you feel like
> sharing. :)

I'd be happy to. At the moment, it's "broken" as I am trying to merge my current (primitive) memo selection front-end onto my existing memo editor. Give me a week to get the two working together, and I'll send you by email the stand-alone PRC file and the source code of what I'll have at that point.

Ron

Program to view fonts - source included

Posted by [Alistair George](#) on March 20, 1999 at 19:37:27:

If anyone is interested in a forth program to view the fonts installed then please email me at ajg@rooding.prestel.co.uk
Source code is included which may help those out there looking for help on 'moving on'.

Any comments, suggestions or ideas are welcome as this only my second program written in Quartus Forth (or any Forth for that matter).

Neal - I am interested in access to the launch codes as I wish to add an alarm to my clock program. Keep up the great work.

Alistair

More questions regarding Duco

Posted by [Philippe de Rochembeau](#) on March 20, 1999 at 08:56:59:

MORE QUESTIONS REGARDING DUCO

In the colon definition called 'refresh', what is the purpose of the zero at the end of the 's" error" type zero-display 0" line?

'type.right' takes a c-addr, a u, and a right-margin value as parameters. In the line '0 <# #s #> 38 type.right', 38 is the right-margin value, but where are the c-addr and the u? Moreover, what is the 0 for?

Could you please explain what the 'item>button' does, in detail?

Many thanks.

Philippe de Rochambeau

Re: More questions regarding Duco

Posted by [Neal Bridges](#) on March 20, 1999 at 15:47:34:

In Reply to: [More questions regarding Duco](#) posted by Philippe de Rochambeau on March 20, 1999 at 08:56:59:

> MORE QUESTIONS REGARDING DUCO

> In the colon definition called 'refresh', what is the purpose of the zero at the
> end of the 's" error" type zero-display 0" line?

The code is

```
\ Display Roman
24 45 at
out-of-range @ if
  s" error" type zero-display 0
  else get-display dup romantype
  then
\ Display Arabic...
```

There are two parts to this IF construct.

If the calculator's register is not out-of-range, its value is retrieved with 'get-display', DUPed, displayed as a Roman number, and passed on to the 'Display Arabic' code that follows.

If the calculator's register is out-of-range, "error" is displayed and a zero is placed on the stack to be passed on to the 'Display Arabic' code that follows.

> 'type.right' takes a c-addr, a u, and a right-margin value as parameters. In the
> line '0 <# #s #> 38 type.right', 38 is the right-margin value, but where are the
> c-addr and the u? Moreover, what is the 0 for?

The '0' turns the positive integer on top of the stack into a double-cell number. '<# #s #>' are called 'pictured numeric output' words; they produce a c-addr u which is the address and length of the ASCII representation of the double-cell number on the stack.

> Could you please explain what the 'item>button' does, in detail?

'item>button' is a simple word. If you pass it a value from 2000 to 2016, it returns an ASCII character. I use this to translate calculator-button presses into ASCII characters for easy processing in 'do-button'. The Roman buttons (M, C, X, etc.) are mapped directly to their designated letter; the other buttons

(=, +, m+, etc.) are mapped to other characters.

Neal

Newbie - How to move on ...

Posted by [Stuart](#) on March 20, 1999 at 07:43:07:

Hi there, I am a Forth and Quartus newbie, but having read one of the tutorials linked to from the Quartus site I have written my first program - it prints out times tables like in primary school, you know $1 \times 3 = 3$, $2 \times 3 = 6$, etc.

Anyway, I love Forth and the RPN element, but now I want to move on to programming something cool for my PalmPilot. But I am a bit lost where to go next.

Is there a document which specifies each word, its function and what is required to be on the stack before it is "called" (or whatever the expression is :) ?

* Does such a document exist for the basic Quartus implementation of Forth?

* And also for all the PalmPilot system calls ?

* What is the difference between "include" (which I have used) and "needs" (which I haven't but appears to do something similar) ?

Thanks

Re: Newbie - How to move on ...

Posted by [Stuart C Bunt](#) on March 21, 1999 at 08:01:13:

In Reply to: [Newbie - How to move on ...](#) posted by Stuart on March 20, 1999 at 07:43:07:

Thanks to you all.

Neal, thanks for Quartus and a discussion forum that **really** works - I'm impressed.

I look forward to asking more constructive questions soon (ish - I have a lot of reading to do! ;)

Thanks again.

Re: Newbie - How to move on ...

Posted by [Neal Bridges](#) on March 22, 1999 at 10:48:34:

In Reply to: [Re: Newbie - How to move on ...](#) posted by Stuart C Bunt on March 21, 1999 at 08:01:13:

> Thanks to you all.

> Neal, thanks for Quartus and a discussion forum that *really* works - I'm
> impressed.

> I look forward to asking more constructive questions soon (ish - I have a lot
> of reading to do! ;)

> Thanks again.

No problem -- questions are always welcome.

Neal

Re: Newbie - How to move on ...

Posted by [Neal Bridges](#) on March 20, 1999 at 15:38:49:

In Reply to: [Newbie - How to move on ...](#) posted by Stuart on March 20, 1999 at 07:43:07:

> Is there a document which specifies each word, its function and what is
> required to be on the stack before it is "called" (or whatever the expression
> is :) ?

The ISO/ANS Forth Standard gives this information for all Standard words -- you can get an electronic copy from my Online Resources page. I've also converted it into a DOC file that can be read on the Palm itself.

> * Does such a document exist for the basic Quartus implementation of Forth?
> * And also for all the PalmPilot system calls ?

There's a section in the manual for "Words Specific to Quartus Forth" that covers non-standard words. Also, stack diagrams for all the systrops are also in the manual. Let me know if you have any questions about any specific words; I'm always happy for the opportunity to make the manual more informative.

> * What is the difference between "include" (which I have used) and "needs"
> (which I haven't but appears to do something similar) ?

"needs" does what "include" does, but won't include a file that has already been included. It's useful in library modules -- if you have two modules, each of which depends on 'core-ext', for instance, you'd put "needs core-ext" in each

file; then 'core-ext' will only be included once, instead of twice.

Neal

Newbie - How to move on ...

Posted by [Stuart](#) on March 20, 1999 at 07:47:22:

In Reply to: [Newbie - How to move on ...](#) posted by Stuart on March 20, 1999 at 07:43:07:

By the way the tutorial which I have read is:

<http://cdr.stanford.edu/spdl/manuals/forthtut.html>

Re: Newbie - How to move on ...

Posted by [Philippe de Rochambeau](#) on March 20, 1999 at 09:07:09:

In Reply to: [Newbie - How to move on ...](#) posted by Stuart on March 20, 1999 at 07:47:22:

> By the way the tutorial which I have read is:

> <http://cdr.stanford.edu/spdl/manuals/forthtut.html>

Hello,

being a newbie myself, here is what I have done so far:

- purchased a copy of "Starting Forth, 2nd Edition" from Computer Solutions UK
- read it and tried the exercises
- purchased a copy of "Forth Programmer's Handbook" from Computer Solutions UK (also available from www.forth.com), which is quite intelligible (as opposed to the ANS document)
- did the QForth tutorial available on the QForth website

Right now, I am working through Neal's Duco application to try and understand how a basic QForth application works.

Philippe de Rochambeau

Re: Newbie - How to move on ...

Posted by [Neal Bridges](#) on March 20, 1999 at 17:40:27:

In Reply to: [Re: Newbie - How to move on ...](#) posted by Philippe de Rochambeau on March 20, 1999 at 09:07:09:

> - purchased a copy of "Forth Programmer's Handbook" from Computer Solutions UK
> (also available from www.forth.com), which is quite intelligible (as opposed
to
> the ANS document)

I'll mention again -- the "Forth Programmer's Handbook" is also available in Adobe PDF format with the 30-day-free-trial version of "SwiftForth", available at www.forth.com.

Neal

Quartus Discussion Forum messages from before March 20, 1999.

[Return to the Quartus Discussion Forum](#)

What is the way?

Posted by [Gayle Skinner](#) on March 19, 1999 at 20:10:50:

Quartus:

I am a non-palm user at this time, but I had a suggestion put to me that a '3COM Palm Pilot solution' could be the way to go.

This is my goal: Produce an application that splits the screen in half - then performs a countdown function from a preset time for each half of the screen depending on which side was tapped.

Can such a thing be done using the Forth language with your Quartus product? Is there any documentation on how-to do such a (seemingly) simple task?

Regards

--- Gayle (gayle.skinner@lmco.com)

Re: What is the way?

Posted by [Neal Bridges](#) on March 19, 1999 at 20:33:24:

In Reply to: *What is the way?* posted by Gayle Skinner on March 19, 1999 at 20:10:50:

> Quartus:

> I am a non-palm user at this time, but I had a suggestion put to me that a '3COM

> Palm Pilot solution' could be the way to go.

>

> This is my goal: Produce an application that splits the screen in half - then
> performs a countdown function from a preset time for each half of the screen
> depending on which side was tapped.

> Can such a thing be done using the Forth language with your Quartus product?

> Is there any documentation on how-to do such a (seemingly) simple task?

You can certainly use Quartus Forth to do such a thing. Sounds a bit like a chess clock.

Are you a programmer now, or just getting into it?

Neal

"Newest messages" feature added to the Discussion Forum

Posted by [Neal Bridges](#) on March 18, 1999 at 20:39:25:

I've added a link to the Forum page that lets you view the 50 most recent messages. Let me know if it suits.

Neal

Re: "Newest messages" feature added to the Discussion Forum

Posted by [Branko Znuderl](#) on March 19, 1999 at 02:11:10:

In Reply to: *"Newest messages" feature added to the Discussion Forum* posted by Neal Bridges on March 18, 1999 at 20:39:25:

It's OK !

Branko

> I've added a link to the Forum page that lets you view the 50 most recent
> messages. Let me know if it suits.

> Neal

QDocs files

Posted by [Michael Collas](#) on March 18, 1999 at 19:45:08:

I've noticed that the Palm Systraps have disappeared from the TealDoc document in the latest version of qdocs.zip. Any chance of getting this restored, or of getting an old version of the document? Having the systraps listed in this format was very useful - TealDoc has searching and scrolling facilities which are missing from TealInfo, making it much easier to use.

Thanks,

Michael.

Re: QDocs files

Posted by [Neal Bridges](#) on March 18, 1999 at 20:00:25:

In Reply to: *QDocs files* posted by Michael Collas on March 18, 1999 at 19:45:08:

> I've noticed that the Palm Systraps have disappeared from the TealDoc document
> in the latest version of qdocs.zip. Any chance of getting this restored, or
> of
> getting an old version of the document? Having the systraps listed in this
> format was very useful - TealDoc has searching and scrolling facilities which
> are missing from TealInfo, making it much easier to use.

Those are still around -- they were never part of qdocs.zip. Check the File Area; I'll check it myself shortly to confirm.

Neal

Re: QDocs files

Posted by [Neal Bridges](#) on March 18, 1999 at 20:34:35:

In Reply to: *Re: QDocs files* posted by Neal Bridges on March 18, 1999 at 20:00:25:

> > I've noticed that the Palm Systraps have disappeared from the TealDoc
document
> > in the latest version of qdocs.zip. Any chance of getting this restored, or
> of
> > getting an old version of the document? Having the systraps listed in this
> > format was very useful - TealDoc has searching and scrolling facilities
which
> > are missing from TealInfo, making it much easier to use.

> Those are still around -- they were never part of qdocs.zip. Check the File
> Area; I'll check it myself shortly to confirm.

I believe what you're looking for is "stackdia.zip" in the Quartus Forth File Area.

Neal

- [File Area](#)

WebBBS

Posted by Dan Hughes on March 18, 1999 at 16:06:14:

Neil,

We are using WebBBS to help support our product and it works real well. I don't know how much customization we did since I haven't done much with it but you might want to check it out. Our site is at <http://www.multiedit.com/support.htm>

There is a converter for WWWBoard which I believe you are using.

The WebBBS information can be found at <http://awsd.com/scripts/webbbs/>

Dan

Re: WebBBS

Posted by [Neal Bridges](#) on March 18, 1999 at 16:26:25:

In Reply to: *WebBBS* posted by Dan Hughes on March 18, 1999 at 16:06:14:

> We are using WebBBS to help support our product and it works real well. I
> don't know how much customization we did since I haven't done much with it but
> you might want to check it out. Our site is at
> <http://www.multiedit.com/support.htm>

> There is a converter for WWWBoard which I believe you are using.

> The WebBBS information can be found at <http://awsd.com/scripts/webbbs/>

Thanks, Dan. I'm going to take a stab at adding a chronological view to this Forum; if it proves painful, WebBBS looks like a possible alternative.

Neal

compiling 'include'

Posted by [Mike Will](#) on March 18, 1999 at 14:50:55:

Thanks for the tip on Hotsync user name in Emulator, Neal (it works).

I notice that INCLUDE can be compiled into a colon definition. That's handy. Can I also compile an entire command such as INCLUDE TOOLKIT ? That would be very handy.

Thanks

Mike

Re: compiling 'include'

Posted by [Neal Bridges](#) on March 18, 1999 at 15:19:04:

In Reply to: *compiling 'include'* posted by Mike Will on March 18, 1999 at 14:50:55:

> Thanks for the tip on Hotsync user name in Emulator, Neal (it works).

> I notice that INCLUDE can be compiled into a colon definition. That's handy.
> Can I also compile an entire command such as INCLUDE TOOLKIT ? That would be
> very handy.

```
: myword s" toolkit" included ;
```

Neal

Re: compiling 'include'

Posted by [Mike Will](#) on March 18, 1999 at 15:48:13:

In Reply to: *Re: compiling 'include'* posted by Neal Bridges on March 18, 1999 at 15:19:04:

> > I notice that INCLUDE can be compiled into a colon definition. That's
handy.

> > Can I also compile an entire command such as INCLUDE TOOLKIT ? That would
be

> > very handy.

```
> : myword s" toolkit" included ;
```

> Neal

Wow. Never noticed it. Thanks.

Mike

Reg version in Emulator?

Posted by [Mike Will](#) on March 18, 1999 at 11:54:40:

I can't seem to compile stand-alones in the emulator. I get 'invalid registration code' error. Is this normal?

Thanks

Mike

Re: Reg version in Emulator?

Posted by [Neal Bridges](#) on March 18, 1999 at 11:59:30:

In Reply to: *Reg version in Emulator?* posted by Mike Will on March 18, 1999 at 11:54:40:

> I can't seem to compile stand-alones in the emulator. I get 'invalid registration code' error. Is this normal?

You need to set the "HotSync User Name" under the "Properties" menu. Quartus Forth registration codes are keyed to your HotSync username.

Neal

Questions on bitmap and duco

Posted by [Philippe de Rochembeau](#) on March 18, 1999 at 03:15:05:

Questions regarding bitmap and Duco

why do you divide add the duplicated width to 7, divide the result by 8, duplicate it,

'and' it with 1, add up the two remaining digits, and store the total?

what is that total?

what are the 'flags' and the 'reserved' digits, which you store?

at what point in the bitmap structure creation process does the does> go into effect? Is the does>

carried out after the last line of 1s and 0s is stored into the memory-indicator bitmap structure?

where does [char] in duco come from?

where do the add, subtract, ... words come from?

what is 'pendingequals' used for?

why do you used a '[' in show-panel?

Many thanks.

Philippe de Rochambeau

Re: Questions on bitmap and duco

Posted by [Neal Bridges](#) on March 18, 1999 at 11:57:32:

In Reply to: *Questions on bitmap and duco* posted by Philippe de Rochambeau on March 18, 1999 at 03:15:05:

> Questions regarding bitmap and Duco

> at what point in the bitmap structure creation process does the does> go into
> effect? Is the does>
> carried out after the last line of 1s and 0s is stored into the
> memory-indicator bitmap structure?

Missed this one last time.

The code after DOES> is the action assigned to each new word defined using 'bitmap'. It isn't carried out until you use the newly-defined word.

For example, here's *telephone.txt* from the File Area:

```
\ telephone 98.10.7 8:53 pm NAB
needs bitmap
```

```
decimal
12 16 bitmap telephone
2 base ! \ switch to binary
0000111111110000 ,
0111111111111110 ,
1110110000110111 ,
1110110000110111 ,
1110011111100111 ,
0000110000110000 ,
0001101111011000 ,
0011101111011100 ,
0111101111011110 ,
1111110000111111 ,
1111111111111111 ,
1111111111111111
```

```
,
decimal
\ Example:
\ 80 80 telephone
```

'12 16 bitmap telephone' defines a new word, 'telephone'. The binary data stored in memory following is the bitmap picture of the telephone.

Later, '80 80 telephone' will draw the telephone at 80 pixels down and 80 pixels across on-screen, using the 'WinDrawBitmap' code assigned to it by 'bitmap' (the code after the DOES> in 'bitmap').

This is akin to object-orientation; 'telephone' becomes an active object that knows how to draw itself, by virtue of CREATE/DOES>.

Neal

Re: Questions on bitmap and duco

Posted by [Neal Bridges](#) on March 18, 1999 at 11:52:14:

In Reply to: *Questions on bitmap and duco* posted by Philippe de Rochambeau on March 18, 1999 at 03:15:05:

> Questions regarding bitmap and Duco

> why do you divide add the duplicated width to 7, divide the result by 8,
> duplicate it,
> 'and' it with 1, add up the two remaining digits, and store the total?
> what is that total?

The 'bitmap' word creates a 'BitmapType' structure in memory, as defined in the *Window.H* file provided by 3Com as part of the SDK:

```
typedef struct {  
    Word width;  
    Word height;  
    Word rowBytes;  
    BitmapFlagsType flags;  
    Word reserved [4];  
} BitmapType;
```

The first three words are width and height (both in pixels), and the number of bytes/row, which must be an even number. To calculate that number, I add 7 to the width in pixels and divide by 8; this rounds up to next byte. The 'dup 1 and +' rounds the result up to the nearest even value.

>what are the 'flags' and the 'reserved' digits, which you store?

The flags, and four reserved cells are all left at 0. The only meaningful flag indicates whether a bitmap is compressed or not; 'bitmap' defines uncompressed bitmaps.

> where does [char] in duco come from?

It's a Standard word, and is built into the kernel.

> where do the add, subtract, ... words come from?

They're defined as part of the 'OpType' enum.

```
\ Opcodes:  
0 enum OpType  
  OpType do-nothing  
  OpType add  
  OpType subtract  
  OpType multiply  
  OpType divide
```

As a result of the enum, 'do-nothing' is a constant with the value 0, 'add' is a constant with the value 1, 'subtract' is a constant with the value 2, and so on.

> what is 'pendingequals' used for?

'pendingequals' is a flag that indicates that the calculator user has pressed an operator (+ - X or divide). Before another operator can be stored, the first one would have to be processed; this flag ensures that that happens. This mirrors the function of a 'real' 4-function calculator.

> why do you used a [''] in show-panel?

The line

```
[''] simple-handler eventhandler !
```

sets up the word 'simple-handler' as the menu event handler for the program. While this works, it is outdated and no longer required; I've revised Duco to use a simpler method of handling menu events, and will post it soon.

Neal

LCD digits module available in the File Area

Posted by [Neal Bridges](#) on March 17, 1999 at 16:10:39:

I've made *LCD.zip* available in the Quartus Forth File Area. It provides LCD-style digits, 30x40 pixels each. There's a resource database containing the bitmaps, and a short library file that makes using them easy.

Neal

- [File Area](#)

tinychars.zip available in the File Area

Posted by [Neal Bridges](#) on March 16, 1999 at 21:50:39:

tinychars.zip provides a complete 4x5-pixel character set, with upper/lower-case alphabetic, symbols, and numbers. With it you can display 40 columns and 32 rows of text on the Palm display. Note that one of the files, 'tinynums', replaces the library file of the same name; this new module will replace the existing library code in the next update.

Also, I've enhanced the source to "Year", removing the use of 'simple-handler' in favour of more direct and simpler menu event handling; that'll appear soon, as will a similarly-modified version of "Duco". The sources to "Swatch" will follow, as I've had a number of requests for it.

Enjoy, and let me know how it's going. My email traffic has gone up while forum traffic has declined; I encourage you all to post your questions in this forum -- that way the answers are available to all, and we'll also gain from the valuable experience of other Quartus Forth users.

Neal

Re: tinychars.zip available in the File Area

Posted by Nigel Brown on March 17, 1999 at 00:36:57:

In Reply to: *tinychars.zip available in the File Area* posted by Neal Bridges on March 16, 1999 at 21:50:39:

> *tinychars.zip* provides a complete 4x5-pixel character set, with
> upper/lower-case alphabetic, symbols, and numbers. With it you can display 40
> columns and 32 rows of text on the Palm display. Note that one of the files,
> 'tinynums', replaces the library file of the same name; this new module will
> replace the existing library code in the next update.

> Also, I've enhanced the source to "Year", removing the use of 'simple-handler'
> in favour of more direct and simpler menu event handling; that'll appear soon,
> as will a similarly-modified version of "Duco". The sources to "Swatch" will
> follow, as I've had a number of requests for it.

> Enjoy, and let me know how it's going. My email traffic has gone up while
forum
> traffic has declined;

With the discussions nesting so deeply for the longer topics it is hard to keep up with which are new comments. Is it possible to see recently added comments listed separately somewhere rather than having to scroll through the list looking at the tail-end dates?

>I encourage you all to post your questions in this forum
> -- that way the answers are available to all, and we'll also gain from the

> valuable experience of other Quartus Forth users.

> Neal

State of the Forum (was Re: tinychars.zip)

Posted by [Carl Jacobsen](#) on March 17, 1999 at 14:42:55:

In Reply to: *Re: tinychars.zip available in the File Area* posted by Nigel Brown on March 17, 1999 at 00:36:57:

> > The sources to "Swatch" will
> > follow, as I've had a number of requests for it.

Here here! I for one would be quite interested to see the Swatch sources. By the way, did you notice that someone has released a "competitor" to your Swatch, which a) isn't as pretty, b) lacks a converter, c) despite (a) & (b), is about the same size, and, d) costs money? (Try looking up "InternetClock" at PilotGear.)

> > ... My email traffic has gone up while forum traffic has declined;

Hmm, weird. Would it make sense to either a) repost such replies on the forum, b) only post the answer to the Forum, and tell the person where to look to find it :-P, or c) add a boilerplate section to every email response to point at the forum and strongly suggest they use it in the future?

I suppose I can understand that if the ranks of Quartus users are expanding out from the fearless first-adopters to a wider group who perhaps are in awe of our superior intelligence and good looks (eh? :-), maybe some are intimidated to post questions in a public place. That's a shame, because I've found this forum a terrific place to find answers to questions I hadn't thought to ask yet. And, Neal, you've done a great job of answering novice questions with the same respect as those from long-time Forthers (and I'm much more in the former category than the latter) -- we just need to find a way make that apparent to new arrivals, yes?

> With the discussions nesting so deeply for the longer topics it is hard
> to keep up with which are new comments. Is it possible to see recently
> added comments listed separately somewhere rather than having to scroll
> through the list looking at the tail-end dates?

If you're reading with Netscape or Explorer (less of a given here than most places, as perhaps some are using AvantGo/ProxiWeb/etc., or even PalmTelnet and Lynx :-), then the unread articles should show up as a different color than the ones you've already read. If they're switching back too soon, then just increase the number of days your browser remembers "history" (which is something altogether different than the browser's "cache") -- I raised mine from 7 days to 30, and detect no performance hit. You still have to scroll

down a ways, but if you read every article, the new unread ones will stand out quite obviously, with no need to examine date stamps.

If I understand things correctly, the wwwboard software Neal is using is freely available, but relatively inflexible and limited in options; any major structural changes would entail Neal doing a bunch of Perl hacking on his own...

> >I encourage you all to post your questions in this forum
> > -- that way the answers are available to all, and we'll also gain from the
> > valuable experience of other Quartus Forth users.

I have found this forum to harken back to the olde days of Usenet news, with an impressively high signal-to-noise ratio; it doesn't take much time to read, and has lots of useful information, so I make it a point to drop in and read it every day, even if I don't post very often...

Just another vote in favor of the forum :-)
-- Carl

Re: State of the Forum (was Re: tinychars.zip)

Posted by [Neal Bridges](#) on March 17, 1999 at 17:17:24:

In Reply to: *State of the Forum (was Re: tinychars.zip)* posted by Carl Jacobsen on March 17, 1999 at 14:42:55:

> > > The sources to "Swatch" will
> > > follow, as I've had a number of requests for it.

> Here here! I for one would be quite interested to see the Swatch sources.
> By the way, did you notice that someone has released a "competitor" to your
> Swatch, which a) isn't as pretty, b) lacks a converter, c) despite (a) & (b),
> is about the same size, and, d) costs money? (Try looking up
> "InternetClock" at PilotGear.)

Saw that one; the author said he hadn't seen mine, or he wouldn't have bothered to write his. I've been cleaning up the Swatch sources a bit; wrote them when I was down with the 'flu. Just a bit of additional factoring required, and they'll be set to go. As a start, the LCD module is available now in the File Area.

> > > ... My email traffic has gone up while forum traffic has declined;
> Hmm, weird. Would it make sense to either a) repost such replies on the
> forum, b) only post the answer to the Forum, and tell the person where
> to look to find it :-P, or c) add a boilerplate section to every email
> response to point at the forum and strongly suggest they use it in the
> future?

Certainly should a user prefer to discuss an issue by e-mail, I'm happy to oblige; I think there are benefits to group discussion, however, and certainly

I'll bring into the forum any new issues arising from discussions in e-mail.

> I suppose I can understand that if the ranks of Quartus users are expanding
> out from the fearless first-adopters to a wider group who perhaps are in
> awe of our superior intelligence and good looks (eh? :-), maybe some are
> intimidated to post questions in a public place. That's a shame, because
> I've found this forum a terrific place to find answers to questions I hadn't
> thought to ask yet. And, Neal, you've done a great job of answering novice
> questions with the same respect as those from long-time Forthers (and I'm
> much more in the former category than the latter) -- we just need to find
> a way make that apparent to new arrivals, yes?

Thanks, Carl. Maybe a friendlier shade of green for the forum pages? :)

...
> If I understand things correctly, the wwwboard software Neal is using is
> freely available, but relatively inflexible and limited in options; any
> major structural changes would entail Neal doing a bunch of Perl hacking
> on his own...

Which isn't a big deal; I'll see if I can add a 'recent messages' page without
too much grief.

> > >I encourage you all to post your questions in this forum
> > > -- that way the answers are available to all, and we'll also gain from the
> > > valuable experience of other Quartus Forth users.

> I have found this forum to harken back to the olde days of Usenet news, with
> an impressively high signal-to-noise ratio; it doesn't take much time to read,
> and has lots of useful information, so I make it a point to drop in and read
> it every day, even if I don't post very often...

That's a good thing to hear. UseNet ain't what she used to be.

Neal

Re: State of the Forum (was Re: tinychars.zip)

Posted by [Carl Jacobsen](#) on March 19, 1999 at 15:37:30:

In Reply to: *Re: State of the Forum (was Re: tinychars.zip)* posted by Neal
Bridges on March 17, 1999 at 17:17:24:

> > ["InternetClock", poor Swatch alternative]
>
> Saw that one; the author said he hadn't seen mine, or he wouldn't have
> bothered to write his. ...

The thing that impressed me was that the Quartus version was prettier and
more featureful (is that a word?) in about the same code size: this speaks
well for Forth being a really viable development language on the Pilot.

> > [Forum is a friendly place] ... -- we just need to find

> > a way make that apparent to new arrivals, yes?

>

> ... Maybe a friendlier shade of green for the forum pages? :)

Nah, I've thought long and hard about this, and I've realized what should have been obvious long ago, to make people feel more at ease here, you need to put a large banner across the top of the forum, that says...

. **DON'T PANIC**

> > I have found this forum to harken back to the olde days of Usenet news...

>

> That's a good thing to hear. UseNet ain't what she used to be.

Sure isn't... I can't *read* news any more; there's just too much, and so much of it is advertising... These days, running keyword searches through DejaNews seems the only reasonable alternative.

-- Carl

P.S. Neal should get the reference; if other's don't, go read HHGG... :-)

Re: State of the Forum (was Re: tinychars.zip)

Posted by [Neal Bridges](#) on March 19, 1999 at 15:43:14:

In Reply to: *Re: State of the Forum (was Re: tinychars.zip)* posted by Carl Jacobsen on March 19, 1999 at 15:37:30:

> The thing that impressed me was that the Quartus version was prettier and
> more featureful (is that a word?) in about the same code size: this speaks
> well for Forth being a really viable development language on the Pilot.

It is. Small footprint, fast code, full access to the ROM functions. Can't go wrong.

> Nah, I've thought long and hard about this, and I've realized what should
> have been obvious long ago, to make people feel more at ease here, you need
> to put a large banner across the top of the forum, that says...

> **DON'T PANIC**

Funny thing -- my PalmPilot Professional hard-cover has "Don't Panic" written on it in large, friendly letters. Maybe I'll post a picture.

Neal

Re: State of the Forum (was Re: tinychars.zip)

Posted by [E. Ross Helton](#) on March 17, 1999 at 16:03:15:

In Reply to: *State of the Forum (was Re: tinychars.zip)* posted by Carl Jacobsen on March 17, 1999 at 14:42:55:

Hi Neal

I agree with Carl about encouraging users to use this forum. I can speak to the issue of newbies and timid in writing a message here. It is a kind of scary to think about putting your questions out there for all the world to see. However, the way in which you handle things makes it worth the effort. You answer question quickly and to the point. Besides that you go out of your way to help find and/or make corrections to your software.

The added benefit of this forum are that others can chime and give additional support and opinions.

Make it a good day!

Ross

> > > ... My email traffic has gone up while forum traffic has declined;

> Hmm, weird. Would it make sense to either a) repost such replies on the
> forum, b) only post the answer to the Forum, and tell the person where
> to look to find it :-P, or c) add a boilerplate section to every email
> response to point at the forum and strongly suggest they use it in the
> future?

> I suppose I can understand that if the ranks of Quartus users are expanding
> out from the fearless first-adopters to a wider group who perhaps are in
> awe of our superior intelligence and good looks (eh? :-), maybe some are
> intimidated to post questions in a public place. That's a shame, because
> I've found this forum a terrific place to find answers to questions I hadn't
> thought to ask yet. And, Neal, you've done a great job of answering novice
> questions with the same respect as those from long-time Forthers (and I'm
> much more in the former category than the latter) -- we just need to find
> a way make that apparent to new arrivals, yes?

> > With the discussions nesting so deeply for the longer topics it is hard
> > to keep up with which are new comments. Is it possible to see recently
> > added comments listed separately somewhere rather than having to scroll
> > through the list looking at the tail-end dates?

> If you're reading with Netscape or Exploder (less of a given here than most
> places, as perhaps some are using AvantGo/ProxiWeb/etc., or even PalmTelnet
> and Lynx :-), then the unread articles should show up as a different color
> than the ones you've already read. If they're switching back too soon, then
> just increase the number of days your browser remembers "history" (which is
> something altogether different than the browser's "cache") -- I raised mine
> from 7 days to 30, and detect no performance hit. You still have to scroll
> down a ways, but if you read every article, the new unread ones will stand

> out quite obviously, with no need to examine date stamps.

> If I understand things correctly, the wwwboard software Neal is using is
> freely available, but relatively inflexible and limited in options; any
> major structural changes would entail Neal doing a bunch of Perl hacking
> on his own...

> > >I encourage you all to post your questions in this forum
> > > -- that way the answers are available to all, and we'll also gain from the
> > > valuable experience of other Quartus Forth users.

> I have found this forum to harken back to the olde days of Usenet news, with
> an impressively high signal-to-noise ratio; it doesn't take much time to read,
> and has lots of useful information, so I make it a point to drop in and read
> it every day, even if I don't post very often...

> Just another vote in favor of the forum :-)
> -- Carl

Re: State of the Forum (was Re: tinychars.zip)

Posted by [Neal Bridges](#) on March 17, 1999 at 17:18:13:

In Reply to: *Re: State of the Forum (was Re: tinychars.zip)* posted by E. Ross Helton on March 17, 1999 at 16:03:15:

> Hi Neal

> I agree with Carl about encouraging users to use this forum. I can speak to
> the
> issue of newbies and timid in writing a message here. It is a kind of scarry
> to
> think about putting your questions out there for all the world to see.
However,
> the way in which you handle things makes it worth the effort. You answer
> question quickly and to the point. Besides that you go out of your way to
> help
> find and/or make corrections to your software.

Always glad to help, Ross. Thanks for the kind comments.

> The added benefit of this forum are that others can chime and give additional
> support and opinions.

Definitely.

Neal

Re: tinychars.zip available in the File Area

Posted by [Neal Bridges](#) on March 17, 1999 at 13:35:35:

In Reply to: *Re: tinychars.zip available in the File Area* posted by Nigel Brown on March 17, 1999 at 00:36:57:

> With the discussions nesting so deeply for the longer topics it is hard to keep
> up with which are new comments. Is it possible to see recently added comments
> listed separately somewhere rather than having to scroll through the list
> looking at the tail-end dates?

I'll see what I can do.

Neal

Popup list handling

Posted by [Allen Chen](#) on March 14, 1999 at 19:21:44:

Hi Neal, I am trying to get a popup list to work. Can you give an example of how the popup trigger handling differs from the button handling? I figure that the even structure of a popup list is thus:

```
event >abs @a ====> event->eType
event >abs 8 m+ @a ====> event->data.popSelect.ControlID
event >abs 14 m+ @a ====> event->data.popSelect.ListID
event >abs 20 m+ @a ====> event->data.popSelect.Selection
```

Is the above correct? I am assuming that the OS will handle all the popping-up the list and selection process, and all I have to do is access **event->data.popSelect.Selection**. Indeed the form display, popup, list selection, etc do work in my form. However, my handling routine seems to be confusing the popSelectEvent with ctlSelectEvent. Not sure what's wrong. An quick example would be greatly helpful.

Thanks,
Allen

Re: Popup list handling

Posted by [Neal Bridges](#) on March 14, 1999 at 19:48:10:

In Reply to: *Popup list handling* posted by Allen Chen on March 14, 1999 at 19:21:44:

> Hi Neal, I am trying to get a popup list to work. Can you give an example of
> how the popup trigger handling differs from the button handling? I figure
that
> the even structure of a popup list is thus:
>

```
> event >abs @a ===> event->eType  
> event >abs 8 m+ @a ===> event->data.popSelect.ControlID  
> event >abs 14 m+ @a ===> event->data.popSelect.ListID  
> event >abs 20 m+ @a ===> event->data.popSelect.Selection  
>
```

> Is the above correct? I am assuming that the OS will handle all the
popping-up
> the list and selection process, and all I have to do is access
> **event->data.popSelect.Selection**. Indeed the form display, popup, list
> selection, etc do work in my form. However, my handling routine seems to be
> confusing the popSelectEvent with ctlSelectEvent. Not sure what's wrong. An
> quick example would be greatly helpful.

Hi, Allen. I notice you're doing a fair amount of 'event >abs 8 m+ @a' sorts of
things -- if you just do 'event 8 + @' you might find it simplifies the code a
touch.

I've just run a popup list to see what events are generated when I select a list
item --

```
ctlSelectEvent -- the trigger itself  
winExitEvent -- leaving the main form window to display the popup list  
winEnterEvent -- after the selection, returning to the main form window  
popSelectEvent -- from the list selection itself  
penUpEvent -- this is from lifting the pen from the list selection.
```

popSelectEvent is the one to watch for. Your offsets for retrieving the data
are all correct.

Neal

Re: Popup list handling

Posted by [Allen Chen](#) on March 14, 1999 at 20:45:17:

In Reply to: *Re: Popup list handling* posted by Neal Bridges on March 14, 1999 at 19:48:10:

> Hi, Allen. I notice you're doing a fair amount of 'event >abs 8 m+ @a' sorts of things -- if you just do 'event 8 + @' you might find it simplifies the code a touch.

Thaks, Neal. I thought as much, although the **itemid** word in the Events module use **>abs m+ @a**. I figured don't change it if it ain't broken. :)

I may have an idea why my program was confusing *popSelectEvent* and *ctlSelectEvent*. Apparently the popup trigger also generates a *ctlSelectEvent* as well prior to returning the *popSelectEvent*. Maybe my control event handling section was not correctly ignoring such event. I'll see.

Allen

String constants

Posted by [Mike Will](#) on March 14, 1999 at 18:23:56:

I'd like to lay down a string in the dictionary (ie permanently compiled, not just to a buffer). Does the core version of S" do this? I guess I'm a bit confused about the difference between code space and data space in Quartus.

Thanks

Mike

Re: String constants

Posted by [Neal Bridges](#) on March 14, 1999 at 18:25:45:

In Reply to: *String constants* posted by Mike Will on March 14, 1999 at 18:23:56:

> I'd like to lay down a string in the dictionary (ie permanently compiled, not > just to a buffer). Does the core version of S" do this? I guess I'm a bit > confused about the difference between code space and data space in Quartus.

```
: mystring s" This is my string" ;
```

will do what you want.

Neal

Re: String constants

Posted by [Mike Will](#) on March 14, 1999 at 19:03:04:

In Reply to: *Re: String constants* posted by Neal Bridges on March 14, 1999 at 18:25:45:

```
> : mystring s" This is my string" ;  
> will do what you want.
```

```
> Neal
```

That's what I thought. But where is this string stored? It seems to be a long way from the address of 'mystring'. (I'm DUMP'ing memory to look at memory around the HERE pointer. I guess I expected to see compiled words, strings, constants all contiguous in memory -- they don't appear to be)

If I'm missing something obvious, just slap me, I can take it.

Thanks

Mike

Re: String constants

Posted by [Neal Bridges](#) on March 14, 1999 at 19:30:49:

In Reply to: *Re: String constants* posted by Mike Will on March 14, 1999 at 19:03:04:

```
> > : mystring s" This is my string" ;  
> > will do what you want.
```

```
> > Neal
```

```
>
```

```
> That's what I thought. But where is this string stored? It seems to be a long  
> way from the address of 'mystring'. (I'm DUMP'ing memory to look at memory  
> around the HERE pointer. I guess I expected to see compiled words, strings,  
> constants all contiguous in memory -- they don't appear to be)
```

```
> If I'm missing something obvious, just slap me, I can take it.
```

You're right -- string (and variable) data are stored in the data segment (which is what HERE indexes), in dynamic RAM, so they can be accessed using C@ and C!.

Compiled words, word headers, constants, etc. live in the code segment -- which is in protected storage RAM.

Neal

Re: String constants

Posted by [Mike Will](#) on March 14, 1999 at 20:02:08:

In Reply to: *Re: String constants* posted by Neal Bridges on March 14, 1999 at 19:30:49:

> You're right -- string (and variable) data are stored in the data segment (which is what HERE indexes), in dynamic RAM, so they can be accessed using C@ and C!.

>

> Compiled words, word headers, constants, etc. live in the code segment -- which is in protected storage RAM.

> Neal

Ok. Now I create a stand-alone prc file. Two questions: 1) is this dynamic memory re-instantiated during startup (ie variables and strings are written from the prc to dynamic mem)? and 2) once the mystring word has been compiled, is the string re-processed every time I access it? (as opposed to just being returned as a pre-existing address) As you may guess, I'm looking for speed here. A string lookup is at the heart of my main execution loop.

I'm guessing the answers are yes and no respectively.

Thanks again

Mike

Re: String constants

Posted by [Neal Bridges](#) on March 14, 1999 at 20:38:07:

In Reply to: *Re: String constants* posted by Mike Will on March 14, 1999 at 20:02:08:

> > You're right -- string (and variable) data are stored in the data segment (which is what HERE indexes), in dynamic RAM, so they can be accessed using C@ and C!.

> >

> > Compiled words, word headers, constants, etc. live in the code segment -- which

> > is in protected storage RAM.

> > Neal

> Ok. Now I create a stand-alone prc file. Two questions: 1) is this dynamic
> memory re-instantiated during startup (ie variables and strings are written
> from the prc to dynamic mem)? and 2) once the mystring word has been compiled,
> is the string re-processed every time I access it? (as opposed to just being
> returned as a pre-existing address) As you may guess, I'm looking for speed
> here. A string lookup is at the heart of my main execution loop.

> I'm guessing the answers are yes and no respectively.

You have it right. If you're fanatical about the speed, here's the fastest
solution:

```
:noname s" My String" ; execute 2constant mystring
```

However, all this eliminates is the function-call, so I'd stick with

```
: mystring s" My String" ;
```

for simplicity and clarity.

Neal

Re: String constants

Posted by [Mike Will](#) on March 14, 1999 at 22:08:15:

In Reply to: *Re: String constants* posted by Neal Bridges on March 14, 1999 at 20:38:07:

> You have it right. If you're fanatical about the speed, here's the fastest
> solution:

```
> :noname s" My String" ; execute 2constant mystring
```

> However, all this eliminates is the function-call, so I'd stick with

```
> : mystring s" My String" ;
```

> for simplicity and clarity.

> Neal

Beautiful. I understand this much better now. An added spinoff of this little
discussion is that now I know how to build a table incrementally, adding pieces
using conditional logic. I need that for my next project, which requires
building an hierarchical trie in memory to implement a simple diagnostic expert
system. All I have to worry about is keeping in mind that the dataspace is
cell-aligned, not character.

Thanks for the help.

Mike

page

Posted by [Francois Vignon](#) on March 12, 1999 at 11:37:27:

Hi

the page word doesn't completely erase the screen: he leave 13 or 14 pixels rows on the bottom of the screen ...

Bye

PS: many thanks for your product

Re: page

Posted by [Neal Bridges](#) on March 12, 1999 at 12:07:35:

In Reply to: *page* posted by Francois Vignon on March 12, 1999 at 11:37:27:

> the page word doesn't completely erase the screen: he leave 13 or 14 pixels rows
> on the bottom of the screen ...

Correct -- PAGE only clears the 'active text area' of the screen. In the MainForm, that stops about 13 pixels from the bottom of the screen; the area at the bottom holds the Graffiti shift-state indicator.

If you wish PAGE to clear the entire screen, you can either work in another form (say, via BlankFormID ShowForm) or simply use WinEraseWindow, and then PAGE -- WinEraseWindow will always erase the entire form.

> PS: many thanks for your product

You're welcome!

Neal

OFF TOPIC: Philips TV commercial.

Posted by [Andrew Houghton](#) on March 11, 1999 at 15:36:34:

This is off topic but has anyone see the Philips TV commercial were this teenage guy is in a car, a teenage girl comes out of her house and gets in his car, he then does a half U turn and pulls into his driveway and pulls up to the garage. He goes for the glove box, she thinks something else, and what the!! He pulls a PalmPilot out of the glove box and points it at a big screen TV in the garage and turns it on.

I thought that the PalmPilot's IR could not modulate its signal for TV/VCR applications and that's why you needed something else like Tailbeam? Also any one use Quartus to do IR?

It's called a Pronto

Posted by [Kip DeGraaf](#) on March 11, 1999 at 20:24:14:

In Reply to: *OFF TOPIC: Philips TV commercial.* posted by Andrew Houghton on March 11, 1999 at 15:36:34:

It's been out for a while actually. Suggested retail \$400. 320x240 screen, think of it as a hardware version of OmniRemote.

- [Philips' Pronto home page](#)

Re: OFF TOPIC: Philips TV commercial.

Posted by [Lou Solomon](#) on March 11, 1999 at 17:56:50:

In Reply to: *OFF TOPIC: Philips TV commercial.* posted by Andrew Houghton on March 11, 1999 at 15:36:34:

Andrew:

Actually, I don't believe it is a PalmPilot or an equivalent. I've seen a demo of an HDTV screen (don't remember the manufacturer) that used a touch screen (LCD) type of remote that was similar looking to the PP. I guess for \$6000 they'll throw in a fancy remote.

Lou

Re: OFF TOPIC: Philips TV commercial.

Posted by [E. Ross Helton](#) on March 11, 1999 at 19:25:45:

In Reply to: *Re: OFF TOPIC: Philips TV commercial.* posted by Lou Solomon on March 11, 1999 at 17:56:50:

Hi Andrew;

My son said he had seen a program to make the Pilot work as a TV remote or a remote for anything which takes a remote

make it a good day!

Ross

> Andrew:

> Actually, I don't believe it is a PalmPilot or an equivalent. I've seen a demo

> of an HDTV screen (don't remember the manufacturer) that used a touch screen
> (LCD) type of remote that was similar looking to the PP. I guess for \$6000
> they'll throw in a fancy remote.

> Lou

Re: OFF TOPIC: Philips TV commercial.

Posted by [Neal Bridges](#) on March 11, 1999 at 15:43:27:

In Reply to: *OFF TOPIC: Philips TV commercial.* posted by Andrew Houghton on March 11, 1999 at 15:36:34:

> I thought that the PalmPilot's IR could not modulate its signal for TV/VCR
> applications and that's why you needed something else like Tailbeam? Also any
> one use Quartus to do IR?

Check out OmniRemote (at PilotGear); by directly manipulating the IR they're able to make the Palm act like a learning remote, though my Palm III has a range of about 6 feet max. A \$30 learning remote from Walmart does the job far better.

I'm not sure if OmniRemote's been updated -- apparently there are compatibility problems (not surprisingly) with the IIIx and V.

Neal

Exporting PRCs and PDBs from the Palm OS Emulator: How to!

Posted by [Neal Bridges](#) on March 11, 1999 at 02:16:30:

The link below is a handy program that lets you export files (.PDB and .PRC) from the Palm OS Emulator down to the desktop.

Neal

- [POSE DB Export program](#)

Re: Exporting PRCs and PDBs from the Palm OS Emulator: How to!

Posted by [Mike Will](#) on March 11, 1999 at 10:38:12:

In Reply to: *Exporting PRCs and PDBs from the Palm OS Emulator: How to!* posted by Neal Bridges on March 11, 1999 at 02:16:30:

> The link below is a handy program that lets you export files (.PDB and .PRC)
> from the Palm OS Emulator down to the desktop.

Wow. That's what we've been waiting for (it works with MemoDB, I checked).
Thanks, Neal.

Another nifty utility is PilotXfer (forgive me if it's been discussed before).
It allows one to fetch individual databases from a Pilot.

[PilotXfer](#)

Mike

Re: Exporting PRCs and PDBs from the Palm OS Emulator: How to!

Posted by [Mike Will](#) on March 11, 1999 at 10:42:40:

In Reply to: *Re: Exporting PRCs and PDBs from the Palm OS Emulator: How to!*
posted by Mike Will on March 11, 1999 at 10:38:12:

Ooops. The discussion script gorchd my URL. To get PilotXfer go to:

<http://linux.stud.fh-heilbronn.de/%7Echrist/pilot-xfer/pilotxfer.zip>

Mike

Re: Exporting PRCs and PDBs from the Palm OS Emulator: How to!

Posted by [E. Ross Helton](#) on March 11, 1999 at 16:56:41:

In Reply to: *Re: Exporting PRCs and PDBs from the Palm OS Emulator: How to!*
posted by Mike Will on March 11, 1999 at 10:42:40:

> Oops. The discussion script gorched my URL. To get PilotXfer go to:

>

> <http://linux.stud.fh-heilbronn.de/%7Echrist/pilot-xfer/pilotxfer.zip>

>

> Mike

Hi Mike;

Couldn't get to that site with either URL. When I try it says it is there.

Make it a good day!

Ross

Re: Exporting PRCs and PDBs from the Palm OS Emulator: How to!

Posted by [Neal Bridges](#) on March 11, 1999 at 17:00:26:

In Reply to: *Re: Exporting PRCs and PDBs from the Palm OS Emulator: How to!*
posted by E. Ross Helton on March 11, 1999 at 16:56:41:

> Hi Mike;

> Couldn't get to that site with either URL. When I try it says it is there.

Try the link below.

Neal

- [Pilot-Xfer program](#)

Re: Exporting PRCs and PDBs from the Palm OS Emulator: How to!

Posted by [E. Ross Helton](#) on March 11, 1999 at 19:23:15:

In Reply to: *Re: Exporting PRCs and PDBs from the Palm OS Emulator: How to!*
posted by Neal Bridges on March 11, 1999 at 17:00:26:

> > Hi Mike;

> > Couldn't get to that site with either URL. When I try it says it is there.

> Try the link below.

> Neal

Hi Neal;

That link worked

Make it a good day!

Ross

Re: Exporting PRCs and PDBs from the Palm OS Emulator: How to!

Posted by [Mike Will](#) on March 11, 1999 at 17:07:27:

In Reply to: *Re: Exporting PRCs and PDBs from the Palm OS Emulator: How to!*
posted by Neal Bridges on March 11, 1999 at 17:00:26:

> > Hi Mike;

> > Couldn't get to that site with either URL. When I try it says it is there.

> Try the link below.

> Neal

Thanks Neal. I notice as well that PilotXfer is listed at PalmCentral; that would have been easier.

Two things to keep in mind when using PilotXfer: First, don't specify the file extension when fetching from the pilot, but do specify it when you're installing to the Pilot. Also be sure that HotSync is not active on your desktop, because PilotXfer needs that serial port to communicate.

cheers

Mike

Returning values from a callback.

Posted by [Michael Collas](#) on March 10, 1999 at 23:31:47:

Some callback routines require a return value - eg. the callback for DmQuickSort. Does anyone have experience returning a value from a callback?

Thanks,

Michael Collas

Re: Returning values from a callback.

Posted by [Neal Bridges](#) on March 11, 1999 at 00:58:43:

In Reply to: *Returning values from a callback.* posted by Michael Collas on March 10, 1999 at 23:31:47:

> Some callback routines require a return value - eg. the callback for
> DmQuickSort. Does anyone have experience returning a value from a callback?

The word **d0!** is provided for this purpose. I have debated aliasing it as "RETURN", but nobody's wanted to use it yet, so the debate went undecided.

d0! takes a double-cell value, and sets the D0 register to that value, which is the Palm OS manner of passing a return value.

Neal

PrefGetAppPreferences

Posted by [Steven Donahue](#) on March 10, 1999 at 16:41:55:

So far, I have only needed simple variables for the purposes of my application. However, now I need a data structure to represent my saved preferences. The PrefGetAppPreferences OS call needs a pointer to a preferences data structure (i.e. "&prefs.>").

For instance, say the following pseudo-code represents a structure I need to pass to PrefGetAppPreferences:

```
STRUCTURE BEGIN
  FVARIABLE Value
  VARIABLE ButtonSettingA
  VARIABLE ButtonSettingB
  VARIABLE CheckBoxSetting
STRUCTURE END
```

How would this data structure be defined in Forth, and how is it subsequently passed as a pointer to PrefGetAppPreferences?

Thanks.

Steve

Re: PrefGetAppPreferences

Posted by [Neal Bridges](#) on March 10, 1999 at 17:15:58:

In Reply to: *PrefGetAppPreferences* posted by Steven Donahue on March 10, 1999 at 16:41:55:

> So far, I have only needed simple variables for the purposes of my application.
> However, now I need a data structure to represent my saved preferences. The
> PrefGetAppPreferences OS call needs a pointer to a preferences data structure
> (i.e. "&prefs.").

> For instance, say the following pseudo-code represents a structure I need to
> pass to PrefGetAppPreferences:

>

> STRUCTURE BEGIN
> FVARIABLE Value
> VARIABLE ButtonSettingA
> VARIABLE ButtonSettingB
> VARIABLE CheckBoxSetting
> STRUCTURE END
>

> How would this data structure be defined in Forth, and how is it subsequently
> passed as a pointer to PrefGetAppPreferences?

First, I recommend you use PrefGetAppPreferencesV10, so your code will be compatible back to the oldest Pilots.

Here's a script showing the steps -- very similar to your pseudo-code:

```
needs struct
needs ids
```

```
(id) myap 2constant crid \ your creator ID instead of 'myap'
```

```
struct
1 floats field Value
1 cells field ButtonSettingA
1 cells field ButtonSettingB
```

```
1 cells field CheckBoxSetting
end-struct prefs:
```

```
prefs: myprefs
```

```
sizeof prefs: myprefs >abs 1 crid PrefSetAppPreferencesV10
```

Likewise, you'd use `PrefGetAppPreferencesV10` to retrieve your preferences.

Neal

Floating point: significant digits, rounding.

Posted by [Neal Bridges](#) on March 10, 1999 at 16:16:37:

Thanks to Mike Will I've turned up some inconsistencies in the rounding routine inside FS. and `fpdissect` (and thus indirectly in `(f.)` and `F.`). I've fixed it; Quartus Forth 1.2.2 will go out soon.

Neal

Re: Floating point: significant digits, rounding.

Posted by [Steven Donahue](#) on March 10, 1999 at 16:32:50:

In Reply to: *Floating point: significant digits, rounding.* posted by Neal Bridges on March 10, 1999 at 16:16:37:

Does this address the floating point error that creeps into simple calculations and causes failures for `"f0="`? We had some discussions about this a while back. Although I have found a work around, I have never really been satisfied with the answer.

I can understand floating point error in the noise for `"f/"`, but when I `f-subtract 0.0025` from `.0600` twenty four times, I don't think there should be any floating point error. A test for `"f0="` should return true. It does on every other development platform I have ever used.

Keep up the good work, Neal.

Steve

```
> Thanks to Mike Will I've turned up some inconsistencies in the rounding
> routine
> inside FS. and fpdissect (and thus indirectly in (f.) and F.). I've fixed it;
> Quartus Forth 1.2.2 will go out soon.
```

```
> Neal
```

Re: Floating point: significant digits, rounding.

Posted by [Neal Bridges](#) on March 10, 1999 at 16:52:28:

In Reply to: *Re: Floating point: significant digits, rounding.* posted by Steven Donahue on March 10, 1999 at 16:32:50:

> Does this address the floating point error that creeps into simple calculations
> and causes failures for "f0="? We had some discussions about this a while back.
> Although I have found a work around, I have never really been satisfied with the answer.

> I can understand floating point error in the noise for "f/", but when I
> f-subtract 0.0025 from .0600 twenty four times, I don't think there should be
> any floating point error. A test for "f0=" should return true. It does on
> every other development platform I have ever used.

Nevertheless, it is floating-point loss-of-precision; if you walk through the loop of subtractions and display all the digits of precision, you'll see it.

What a number of platforms do -- QuickBasic, for instance -- is to do the equivalent of F~ for floating-point comparisons. You also have that option in Quartus Forth, but by default F0= works as == does in, say, C; it's an exact comparison. Nothing stops you from making a F0~ that will do a comparison to 0e0 within a small epsilon value.

Also, the floating-point numbers in Quartus Forth are single-precision floats; with double-precision floats you'd have greater resolution, and likely wouldn't encounter precision loss in the same range of values.

Neal

Re: Floating point: significant digits, rounding.

Posted by [Neal Bridges](#) on March 10, 1999 at 18:03:46:

In Reply to: *Re: Floating point: significant digits, rounding.* posted by Neal Bridges on March 10, 1999 at 16:52:28:

I said:
> Nevertheless, it is floating-point loss-of-precision; if you walk through the
> loop of subtractions and display all the digits of precision, you'll see it.

In fact I just did this -- due to cumulative loss of precision in the 24

successive subtractions, it overshoots zero by 0.000000012572855.

Your other option (besides using `F~` for close-comparison) would be to round your own results as you go.

Again, directly comparing floating-point values for equality is a cardinal programming error; though it may often work, when it doesn't it'll bite you hard.

For an example of a real-life failure caused by cumulative floating-point precision errors, see the link below.

Neal

- [Some details on patriot problem \(from comp.realtime\)](#)

Re: Floating point: significant digits, rounding.

Posted by [Steven Donahue](#) on March 10, 1999 at 21:43:24:

In Reply to: *Re: Floating point: significant digits, rounding.* posted by Neal Bridges on March 10, 1999 at 18:03:46:

> Your other option (besides using `F~` for close-comparison) would be to round
> your own results as you go.

That is exactly what I am doing. I just thought it was a messy approach.

Thanks for revisiting this topic. I hope I haven't been too stubborn about this. I don't really have a lot of practical experience in developing floating point apps, so some of these concepts are new to me. Telecommunications R&D doesn't really require much floating point development...

Steve

Re: Floating point: significant digits, rounding.

Posted by [Neal Bridges](#) on March 11, 1999 at 01:53:57:

In Reply to: *Re: Floating point: significant digits, rounding.* posted by Steven Donahue on March 10, 1999 at 21:43:24:

> > Your other option (besides using `F~` for close-comparison) would be to round
> > your own results as you go.

> That is exactly what I am doing. I just thought it was a messy approach.

> Thanks for revisiting this topic. I hope I haven't been too stubborn about

this.

> I don't really have a lot of practical experience in developing floating point
> apps, so some of these concepts are new to me. Telecommunications R&D doesn't
> really require much floating point development...

Stubborn is good -- keeps me hopping, anyway :)

Floating-point is frequently abused; it has its domain, but for most purposes (including financial calculations) integer calculation (or fixed-point, i.e. calculating in pennies) is the right technique. I hate to think of the number of programs that inadvisedly use floating-point values as counters, just waiting for the wrong range of values (or slightly different floating-point hardware) to cause a spectacular failure.

Neal

Re: Floating point: significant digits, rounding.

Posted by [Mike Will](#) on March 10, 1999 at 19:20:23:

In Reply to: *Re: Floating point: significant digits, rounding.* posted by Neal Bridges on March 10, 1999 at 18:03:46:

> For an example of a real-life failure caused by cumulative floating-point
> precision errors, see the link below.

Neal, I've got to hand it to you. You have the wildest reading list, bar none, that I have ever seen. You are a true cyberneticist. (I got into the Internet in '93 to hang out at CERN).

I hope you're getting some rest and orange juice.

Mike

Re: Floating point: significant digits, rounding.

Posted by [Neal Bridges](#) on March 11, 1999 at 01:56:16:

In Reply to: *Re: Floating point: significant digits, rounding.* posted by Mike Will on March 10, 1999 at 19:20:23:

> I hope you're getting some rest and orange juice.

Doing that. Thanks for the good thought.

Neal

structure of events

Posted by [Wayne Carson](#) on March 10, 1999 at 10:46:50:

I'm trying to trap pen events and get the current location of pen. I can't find any examples or information on accessing components of an event (aside from itemid). Am I missing something?

Thanks,
Wayne

Re: structure of events

Posted by [Neal Bridges](#) on March 10, 1999 at 10:57:57:

In Reply to: *structure of events* posted by Wayne Carson on March 10, 1999 at 10:46:50:

> I'm trying to trap pen events and get the current location of pen. I can't find
> any examples or information on accessing components of an event (aside from
> itemid). Am I missing something?

The layout of an event is detailed in the SDK -- EventType in *event.h*.

Here's a snippet of Forth that'll do the trick for you:

```
event 2 cells + constant &coords  
: coords ( -- y x ) &coords 2@ ;
```

coords will retrieve the x and y coordinates from the event structure.

Neal

Reading a database

Posted by [Michael Ethetton](#) on March 10, 1999 at 09:16:32:

I've been playing with writing a Z-80 emulator in Forth, and things are going fairly well so far.

My question is: what is the fastest way to read bytes from a database? Speed is important to my application. If I need to read in a chunk at a time into an array, I can do that, although I would prefer to save the memory and read the bytes directly as needed.

Thank you, Neal, for an excellent language. I'm new to Forth, but am really enjoying the way it works.

--
Mike

Re: Reading a database

Posted by [Neal Bridges](#) on March 10, 1999 at 10:53:28:

In Reply to: *Reading a database* posted by Michael Ethetton on March 10, 1999 at 09:16:32:

> I've been playing with writing a Z-80 emulator in Forth, and things are going
> fairly well so far.

Interesting project!

> My question is: what is the fastest way to read bytes from a database? Speed
> is important to my application. If I need to read in a chunk at a time into
an
> array, I can do that, although I would prefer to save the memory and read the
> bytes directly as needed.

You can read the bytes directly. Once you have locked the handle to the record
you want, you can use **@a** to read the data straight out of memory, or
MemMove to copy blocks of it.

> Thank you, Neal, for an excellent language. I'm new to Forth, but am really
> enjoying the way it works.

You're welcome -- let me know how it goes!

Neal

HackDelete Hack v0.2 incompatible with Quartus Compiler

Posted by [Barry Ekstrand](#) on March 10, 1999 at 08:46:37:

Folks,

I had difficulty getting my newly-registered Quartus to compile - I would get
the following error message:

MemoryMgrNew.c

Line:3009 Nill ID

I then had to tap the Reset button offered by the error window.

After some correspondence with Neal, we verified Quartus was fine, and with some detective work I finally found that a hack was causing the program to bomb when I attempted to compile. The hack is HackDelete Hack v0.2, whose mission in life is to prevent you from deleting an active hack. Needless to say, I can live without this insurance policy, and it has been removed from my machine. All seems to be well now.

Regards,

Barry Ekstrand

Re: HackDelete Hack v0.2 incompatible with Quartus Compiler

Posted by [Erwin Schomburg](#) on March 10, 1999 at 11:38:05:

In Reply to: *HackDelete Hack v0.2 incompatible with Quartus Compiler* posted by Barry Ekstrand on March 10, 1999 at 08:46:37:

> Folks,

> I had difficulty getting my newly-registered Quartus to compile - I would get
> the following error message:

> MemoryMgrNew.c

> Line:3009 Nill ID

> I then had to tap the Reset button offered by the error window.

> After some correspondence with Neal, we verified Quartus was fine, and with
> some detective work I finally found that a hack was causing the program to
bomb

> when I attempted to compile. The hack is HackDelete Hack v0.2, whose mission
> in life is to prevent you from deleting an active hack. Needless to say, I
can

> live without this insurance policy, and it has been removed from my machine.

> All seems to be well now.

> Regards,

> Barry Ekstrand

If you need a "Hack insurance" you might want to evaluate Trap Weaver. Least I can say it does not conflict with Quartus or anything else I have installed.

/Erwin

- [Trap Weaver's Home](#)

4K memo limit

Posted by [Steven Donahue](#) on March 09, 1999 at 21:10:28:

What is the best way to overcome the 4K memo limit? I have broken my source up into several "modules". I have tried to do this in a logical fashion. My question is this. Which is the best approach?

1. Structure the modules such that a few "needs" statements in each module allows any of the individual modules to be loaded independently.
2. "include" (include instead of needs) all sub-modules at the top of the module containing the main (go) word.

I don't know if I am explaining this very well, but I can't think of a better way to describe my delima. However, I need to think of a better way to describe it, because I have to cover this in the tutorial :-)

Any insight or suggestions would be appreciated. Thanks.

Steve

Re: 4K memo limit

Posted by [Neal Bridges](#) on March 09, 1999 at 21:36:14:

In Reply to: *4K memo limit* posted by Steven Donahue on March 09, 1999 at 21:10:28:

> What is the best way to overcome the 4K memo limit? I have broken my source up
> into several "modules". I have tried to do this in a logical fashion. My
> question is this. Which is the best approach?
>

> 1. Structure the modules such that a few "needs" statements in each
> module allows any of the individual modules to be loaded independently.
> 2. "include" (include instead of needs) all sub-modules at the top of the
> module containing the main (go) word.
>

> I don't know if I am explaining this very well, but I can't think of a better
> way to describe my delima. However, I need to think of a better way to
> describe
> it, because I have to cover this in the tutorial :-)

I prefer the second method -- writing my source in discrete modules, and including them at the top, or in the main module. "Duco" does something like

that -- the Roman number conversion engine is a separate module.

4K is quite a reasonable amount of space for a single module; if I exceed that I know I should identify a sub-module and extract it. This increases my available library of modules, and subsequent code-reuse.

Neal

Re: 4K memo limit

Posted by [Neal Bridges](#) on March 09, 1999 at 21:37:24:

In Reply to: *Re: 4K memo limit* posted by Neal Bridges on March 09, 1999 at 21:36:14:

> 2. "include" (include instead of needs) all sub-modules at the top of the

By the way -- I always use 'needs' to include library code, and 'include' when I want the file to definitely be included right at that spot.

Neal

Re: 4K memo limit

Posted by [Steven Donahue](#) on March 09, 1999 at 21:46:04:

In Reply to: *Re: 4K memo limit* posted by Neal Bridges on March 09, 1999 at 21:37:24:

> By the way -- I always use 'needs' to include library code, and 'include'
> when I want the file to definitely be included right at that spot.

It is always refreshing to get the answer you were hoping for. This is the way I have implemented the examples, and for the very reasons you have given, Neal. As always, thanks for the feedback.

Steve

Significant Digits

Posted by [Mike Will](#) on March 09, 1999 at 17:52:04:

I've noticed that floats are good for about 7 significant digits. However, they're often displayed to 8 digits, as in the F. word. This can lead to results such as:

```
3.14e0 f. --> 3.1400001
```

This isn't a problem for calculations, but it's untidy for displaying results. It's most noticeable in calculator type apps, where the user enters a simple number, and is later confronted with a strange representation like this. Of course it can look even worse if you do something like:

```
7e0 5e0 f/ f. --> 1.3999999
```

I've been working for a bit on a word called F7 which would round such results to 7 digits, whereupon we could get:

```
3.14e0 f7 f. --> 3.14
```

I'm basing it on REPRESENT, a nifty new word (thanks Neal) that allows one to specify the number of significant digits required. It's getting messy. What I'd like to know is whether I'm on the right track. Here's what I'm doing:

- 1) use REPRESENT to get a string version with 7 sig. digits
- 2) rebuild the string to a temp buffer, inserting sign and/or decimal point as needed
- 3) call >FLOAT to reconstruct the float

or whether I should be using FPDISECT and working with doubles instead. I'm sinking in complexity and wondering if I'm doing it right at all.

Many thanks.

Mike

PS. There's a typo in FLOAT which defines REPRESENT, where one of the comments has (F: ... instead of (F: ... that causes an error on load.

Re: Significant Digits

Posted by [Neal Bridges](#) on March 09, 1999 at 18:02:54:

In Reply to: *Significant Digits* posted by Mike Will on March 09, 1999 at 17:52:04:

> I've noticed that floats are good for about 7 significant digits. However,
> they're often displayed to 8 digits, as in the F. word.
> This can lead to results such as:

>

> 3.14e0 f. --> 3.1400001

>

> This isn't a problem for calculations, but it's untidy for displaying results.
> It's most noticable in calculator type apps, where the user enters a simple
> number, and is later confronted with a strange representation like this. Of
> course it can look even worse if you do something like:

>

> 7e0 5e0 f/ f. --> 1.3999999

>

> I've been working for a bit on a word called F7 which would round such results
> to 7 digits, whereupon we could get:

>

> 3.14e0 f7 f. --> 3.14

>

Save your efforts -- use the Standard word **SET-PRECISION** to adjust the
number of places past the decimal point.

> PS. There's a typo in FLOAT which defines REPRESENT, where one of the comments
> has (F: ... instead of (F: ... that causes an error on load.

Really? Not in my copy; I'll check the archives. Thanks!

Neal

Re: Significant Digits

Posted by [Mike Will](#) on March 09, 1999 at 19:25:20:

In Reply to: *Re: Significant Digits* posted by Neal Bridges on March 09, 1999 at
18:02:54:

> Save your efforts -- use the Standard word **SET-PRECISION** to adjust the
> number of places past the decimal point.

Oh.

Could you steer me to some docs on SET-PRECISION ?

Thanks.

Re: Significant Digits

Posted by [Neal Bridges](#) on March 09, 1999 at 19:30:47:

In Reply to: *Re: Significant Digits* posted by Mike Will on March 09, 1999 at 19:25:20:

> > Save your efforts -- use the Standard word **SET-PRECISION** to adjust
the
> > number of places past the decimal point.
> Oh.
> Could you steer me to some docs on SET-PRECISION ?

As with all Standard words, the Standard is the place to look for info on SET-PPRECISION -- in this case, the FLOAT wordset.

Neal

Re: Significant Digits

Posted by [Mike Will](#) on March 09, 1999 at 19:46:09:

In Reply to: *Re: Significant Digits* posted by Neal Bridges on March 09, 1999 at 19:30:47:

> As with all Standard words, the Standard is the place to look for info on
> SET-PPRECISION -- in this case, the FLOAT wordset.

Ok, got it, thanks.

Now, does SET-PRECISION set the number of significant digits, or the number of decimal places? The former is what I need, the latter is what's happening:

```
5 set-precision
387.172e0 f.    -->  387.17199
```

Mike

Re: Significant Digits

Posted by [Neal Bridges](#) on March 09, 1999 at 20:05:10:

In Reply to: *Re: Significant Digits* posted by Mike Will on March 09, 1999 at 19:46:09:

> Now, does SET-PRECISION set the number of significant digits, or the number of
> decimal places? The former is what I need, the latter is what's happening:

>

> 5 set-precision
> 387.172e0 f. --> 387.17199
>

That's something I battled with for a while, settling on using the precision to determine the number of digits beyond the decimal place. This wasn't an arbitrary decision, but one reached after a fair amount of consideration.

The requirement I read from the Standard is to eliminate trailing zeroes displayed after the decimal place, which runs counter to the idea of displaying a specific number of significant digits.

7 set-precision 1e3 f.

displays 1000. on every Forth I've tried, and thus is in agreement with the Standard. To display seven significant digits would result in "1000.000".

For a significant-digit display implementation,

3 set-precision 3.14e0 f.

would display "3.14", while

3 set-precision 3214.786e0 f.

would display "3210.".

This would make F. display an approximate result depending on the magnitude of a given float, which seems extremely undesirable to me.

It may be preferable to have F. display significant digits, as you suggest -- in which case I'll provide the current F. functionality under another name. I look forward to your feedback on this, Mike, as I know you're doing a lot of floating-point work.

Neal

Re: Significant Digits

Posted by [Steven Donahue](#) on March 09, 1999 at 20:58:38:

In Reply to: *Re: Significant Digits* posted by Neal Bridges on March 09, 1999 at 20:05:10:

> It may be preferable to have F. display significant digits, as you
> suggest -- in which case I'll provide the current F. functionality
> under another name. I look forward to your feedback on this, Mike,
> as I know you're doing a lot of floating-point work.

If I can cast my vote...

All of my code for the upcoming tutorial examples uses "2 SET-PRECISION" to put the system into "financial mode". So, obviously I am using it to set the number of displayed decimal places.

I guess if this changes, I will need to update my code (and the tutorial) to reflect the new convention. Let me know how this turns out.

Steve

Re: Significant Digits

Posted by [Neal Bridges](#) on March 09, 1999 at 21:01:13:

In Reply to: *Re: Significant Digits* posted by Steven Donahue on March 09, 1999 at 20:58:38:

>
> > It may be preferable to have F. display significant digits, as you
> > suggest -- in which case I'll provide the current F. functionality
> > under another name. I look forward to your feedback on this, Mike,
> > as I know you're doing a lot of floating-point work.

>
> If I can cast my vote...

> All of my code for the upcoming tutorial examples uses "2 SET-PRECISION" to put
> the system into "financial mode". So, obviously I am using it to set the
> number
> of displayed decimal places.

> I guess if this changes, I will need to update my code (and the tutorial) to
> reflect the new convention. Let me know how this turns out.

Steve, bear in mind if you always want two decimal places displayed -- that is,

1.7e0 displayed as 1.70 -- you'll need to use **(f.) type** so that trailing zeroes are not removed.

I'll certainly keep you posted.

Neal

Re: Significant Digits

Posted by [Mike Will](#) on March 09, 1999 at 21:38:25:

In Reply to: *Re: Significant Digits* posted by Neal Bridges on March 09, 1999 at 21:01:13:

> > > It may be preferable to have F. display significant digits, as you
> > > suggest -- in which case I'll provide the current F. functionality
> > > under another name. I look forward to your feedback on this, Mike,
> > > as I know you're doing a lot of floating-point work.

Ok, I've read and thought about this for a bit. Here are my thoughts, somewhat skewed as they are due to there being a Leaf game on tonight.

Your arguments about weird effects left of the decimal point are duly noted and agreed with. However, I'm more concerned about the digits to the right of the dp. Take my calculator app. The user enters 1.4, then '+'. Immediately the display changes to 1.3999999 which is problematic. To fix this, I would need to cut back to 7 significant digits. However, it's entirely possible that the next number might be 254/2 and get displayed as 127.00001 The number still needs to be rounded to 7 places, but now that corresponds to the 5th decimal place, not the 7th. I'm left with no way to consistently round off. Again, the problem is not one of arithmetic correctness, but of common sense to the common user.

Here's what ANSI94 states:

12.6.2.2200 SET-PRECISION

FLOATING EXT

(u --)

Set the number of significant digits currently used by F., FE., or FS. to u.

That's my case for significant digits. Let me know if it makes sense. On a related subject, let me talk about REPRESENT for a moment (this is quickly becoming one of my favourite FORTH words, complex though it is). Again quoting from ANSI94:

"The significand is rounded to u digits following the **round to nearest** rule; ..."

It appears this is not happening in Quartus:

(addr u --) (F: r --) REPRESENT gives the following

addr 4 387.172e0 represent --> a string of '3871' at addr
shouldn't it be '3872' ?

If you don't mind, I'll e-mail you a copy of my calculator so you can see this stuff in action, it makes it clearer than I can express it.

Your time and efforts are greatly appreciated, as usual.

cheers
Mike

Re: Significant Digits

Posted by [Neal Bridges](#) on March 09, 1999 at 21:48:57:

In Reply to: *Re: Significant Digits* posted by Mike Will on March 09, 1999 at 21:38:25:

> Your arguments about weird effects left of the decimal point are duly noted and

> agreed with. However, I'm more concerned about the digits to the right of the
> dp. Take my calculator app. The user enters 1.4, then '+'. Immediately the
> display changes to 1.3999999 which is problematic. To fix this, I would need to

> cut back to 7 significant digits. However, it's entirely possible that the next

> number might be 254/2 and get displayed as 127.00001 The number still needs to

> be rounded to 7 places, but now that corresponds to the 5th decimal place, not
> the 7th. I'm left with no way to consistently round off. Again, the problem is
> not one of arithmetic correctness, but of common sense to the common user.

If in fact you're concerned with the digits right of the decimal, the current handling of the precision should suit you well. Bear in mind that the single-precision floating-point numbers in Quartus Forth only have about 6 and a half useful digits of precision.

> Here's what ANSI94 states:

> 12.6.2.2200 SET-PRECISION

> FLOATING EXT

> (u --)

> Set the number of significant digits currently used by F., FE., or FS. to u.

> That's my case for significant digits. Let me know if it makes sense. On a
> related subject, let me talk about REPRESENT for a moment (this is quickly
> becoming one of my favourite FORTH words, complex though it is). Again quoting
> from ANSI94:

It makes sense, though standard practice (as per my "1000." example in the

previous message) makes it a bit more complex. Needs more thought.

> "The significand is rounded to u digits following the **round to nearest**
> rule; ..."

> It appears this is not happening in Quartus:

>

> (addr u --) (F: r --) REPRESENT gives the following

> addr 4 387.172e0 represent --> a string of '3871' at addr

> shouldn't it be '3872' ?

>

I believe you've found a bug -- I suspect it's rounding at the '1', instead of at the '7'. The rounding code is definitely there, though; let me check on it.

> If you don't mind, I'll e-mail you a copy of my calculator so you can see this
> stuff in action, it makes it clearer than I can express it.

Please do send me the code.

> Your time and efforts are greatly appreciated, as usual.

Anytime!

Neal

Re: Significant Digits

Posted by [Mike Will](#) on March 09, 1999 at 22:26:33:

In Reply to: *Re: Significant Digits* posted by Neal Bridges on March 09, 1999 at 21:48:57:

> If in fact you're concerned with the digits right of the decimal, the current
> handling of the precision should suit you well. Bear in mind that the
> single-precision floating-point numbers in Quartus Forth only have about 6
> and a half useful digits of precision.

I'm not sure we're on the same page here. If, in one case, I need to set the precision to 5 decimal places, and in the next to say, 4 decimal places, how can I use SET-PRECISION as-is ? What I need is to set the **significant digits** to 7 in both cases.

Back to you.

Re: Significant Digits

Posted by [Neal Bridges](#) on March 09, 1999 at 23:40:31:

In Reply to: *Re: Significant Digits* posted by Mike Will on March 09, 1999 at 22:26:33:

> > If in fact you're concerned with the digits right of the decimal, the current
> > handling of the precision should suit you well. Bear in mind that the
> > single-precision floating-point numbers in Quartus Forth only have about 6
> > and a half useful digits of precision.

> I'm not sure we're on the same page here. If, in one case, I need to set the
> precision to 5 decimal places, and in the next to say, 4 decimal places, how
> can I use SET-PRECISION as-is ? What I need is to set the **significant**
> **digits** to 7 in both cases.

Hi Mike. Got the program, thanks. Also got the flu, so bear with my fuzzy brain.

We're on two adjacent pages --

At present the rounding operation that occurs in `fpdissect` and `fs.` takes place on the **significant digit** specified by SET-PRECISION. This defaults to 8, which is too high. Set it to 7, see if that helps you.

The display of float values (via `F.`) uses SET-PRECISION as the number of decimal places, not significant digits.

I'll think on this; at this point it seems returning `F.` to its Standard function and renaming the current words for their current use would be wisest.

I'll keep you posted!

Neal

Re: Significant Digits

Posted by [Neal Bridges](#) on March 09, 1999 at 22:01:29:

In Reply to: *Re: Significant Digits* posted by Neal Bridges on March 09, 1999 at 21:48:57:

> I believe you've found a bug -- I suspect it's rounding at the '1', instead of
> at the '7'. The rounding code is definitely there, though; let me check on it.

I beg your pardon -- I was thinking of "FS.". The rounding doesn't occur in REPRESENT -- I'll add it. Thanks, Mike; I knew if anyone was going to give the new float words a workout, it'd be you.

Neal

Re: Significant Digits

Posted by [Steven Donahue](#) on March 09, 1999 at 21:13:12:

In Reply to: *Re: Significant Digits* posted by Neal Bridges on March 09, 1999 at 21:01:13:

> Steve, bear in mind if you always want two decimal places displayed --
> that is, 1.7e0 displayed as 1.70 -- you'll need to use **(f.) type**
> so that trailing zeroes are not removed.

You are correct, sir. That's what I'm doing.

Steve

Small typo in float.txt

Posted by [Neal Bridges](#) on March 09, 1999 at 18:11:54:

In Reply to: *Re: Significant Digits* posted by Neal Bridges on March 09, 1999 at 18:02:54:

> > PS. There's a typo in FLOAT which defines REPRESENT, where one of the
> > comments
> > has (F: ... instead of (F: ... that causes an error on load.

Quite right! It's fixed. Thanks again.

Neal

Ver include file.

Posted by [Andrew Houghton](#) on March 09, 1999 at 13:25:29:

When looking at the Ver include file it does:

```
create ver 0 , 0 , 0 ,
```

then in the OSversion definition it does:

```
ver >abs
```

When I lookup >abs in the manual it says that it converts a 16-bit dataspace address to a 32-bit absolute address. Okay, so does anyone know why there are 3 zeros there instead of 2?

Re: Ver include file.

Posted by [Neal Bridges](#) on March 09, 1999 at 14:23:02:

In Reply to: *Ver include file.* posted by Andrew Houghton on March 09, 1999 at 13:25:29:

> When looking at the Ver include file it does:

```
> create ver 0 , 0 , 0 ,
```

> then in the OSversion definition it does:

```
> ver >abs
```

> When I lookup >abs in the manual it says that it converts a 16-bit dataspace
> address to a 32-bit absolute address. Okay, so does anyone know why there are
> 3 zeros there instead of 2?

The "0 , 0 , 0 ," puts three 16-bit zeroes into memory at the address 'ver'.
The 'ver' word still returns a 16-bit address no matter how much is at that
address.

Neal

Re: Ver include file.

Posted by [Andrew Houghton](#) on March 09, 1999 at 14:31:55:

In Reply to: *Re: Ver include file.* posted by Neal Bridges on March 09, 1999 at 14:23:02:

> > When looking at the Ver include file it does:
> > create ver 0 , 0 , 0 ,
> > then in the OSversion definition it does:
> > ver >abs
> > When I lookup >abs in the manual it says that it converts a 16-bit
dataspace
> > address to a 32-bit absolute address. Okay, so does anyone know why there
are
> > 3 zeros there instead of 2?
> The "0 , 0 , 0 ," puts three 16-bit zeroes into memory at the address 'ver'.
> The 'ver' word still returns a 16-bit address no matter how much is at that
> address.
> Neal

Duh, my brain must have cramped when I wrote that. What's the 48-bits of
information for? I thought that was argument to FtrGet was suppose to be a
NULL.

Re: Ver include file.

Posted by [Neal Bridges](#) on March 09, 1999 at 14:38:55:

In Reply to: *Re: Ver include file.* posted by Andrew Houghton on March 09, 1999
at 14:31:55:

> Duh, my brain must have cramped when I wrote that. What's the 48-bits of
> information for? I thought that was argument to FtrGet was suppose to be a
> NULL.

From the Quartus Forth systrap documentation:

```
FtrGet ( &valueP. featureNum creator. -- err )
```

From **OSVersion** in *ver.txt*:

```
ver >abs 1 psys FtrGet drop
```

passes **psys** (the double-cell system creator ID), 1 (the feature number
of the operating system version), and the absolute (32-bit, double-cell) address

of **ver**. (I discovered when developing *ver.txt* that that particular feature is 6 bytes long, hence the three 16-bit zeroes stored after **ver**.)

FtrGet retrieves the requested information and writes it to the area of memory at **ver**, which is then retrieved and placed on the stack by the rest of the code in the **OSVersion** word.

Neal

MakePRC

Posted by [Mike Will](#) on March 08, 1999 at 22:49:26:

This one falls more into the category of 'unexpected behaviour' than a bug. It appears that an extra space between the MakePRC word and the name of the PRC file that follows gets included instead of stripped.

Mike

Re: MakePRC

Posted by [Neal Bridges](#) on March 08, 1999 at 23:07:39:

In Reply to: *MakePRC* posted by Mike Will on March 08, 1999 at 22:49:26:

> This one falls more into the category of 'unexpected behaviour' than a bug. It
> appears that an extra space between the MakePRC word and the name of the PRC
> file that follows gets included instead of stripped.

It does -- in fact everything up to the end of the line after the space following **MakePRC** is used as the name of the stand-alone executable.

Neal

Re: MakePRC

Posted by [E. Ross Helton](#) on March 09, 1999 at 16:49:42:

In Reply to: *Re: MakePRC* posted by Neal Bridges on March 08, 1999 at 23:07:39:

> > This one falls more into the category of 'unexpected behaviour' than a bug.
It
> > appears that an extra space between the MakePRC word and the name of the PRC
> > file that follows gets included instead of stripped.

> It does -- in fact everything up to the end of the line after the space
> following **MakePRC** is used as the name of the stand-alone executable.

> Neal

Hi;

Not only will you get leading spaces, you will get an underscore for each space that is after the name of the program. For ex: if you programs' name is Trek and you have a space after it the name will then be Trek_ when you see the name in you archive or backup directory on the PC.

Make it a good day!
Ross

Newbie writing to memo

Posted by [gunnar shogren](#) on March 08, 1999 at 15:15:45:

First of all thanks to all who lend a hand here and of course thanks to Neal for providing us with so much fun and fiddling.
I may be missing something real simple here, but how can I send a "CR" to a memo, and why can I send an s" to memo as well as a z" ?
Thanks again and have a nice day further,

gunnar.
sorry about those silly HTML tags on prior post

Re: Newbie writing to memo

Posted by [Neal Bridges](#) on March 08, 1999 at 15:33:17:

In Reply to: *Newbie writing to memo* posted by gunnar shogren on March 08, 1999 at 15:15:45:

> First of all thanks to all who lend a hand here and of course thanks
> to Neal for providing us with so much fun and fiddling.

> I may be missing something real simple here, but how can I send a
> "CR" to a memo, and why can I send an s" to memo as well as a z" ?
> Thanks again and have a nice day further,

Here's a string consisting only of a line-feed (which is what the MemoPad uses to end lines):

```
decimal  
create CRstring 10 c, 0 c,
```

Strings created with S" will sometimes but not always be followed by a zero-byte in memory; use Z" for reliability, as it guarantees the terminating zero-byte.

Neal

Re: Newbie writing to memo

Posted by [gunnar shogren](#) on March 09, 1999 at 20:11:00:

In Reply to: *Re: Newbie writing to memo* posted by Neal Bridges on March 08, 1999 at 15:33:17:

Well yes, that what I thought too,

But when I use either Allen Chen's appendMemo or just imbed decimal 10 in a string (using WriteNewMemo) all I get is a block symbol between text and everything still on the same line.

So what could I be doing wrong?

> Here's a string consisting only of a line-feed (which is what the MemoPad uses to end lines):

> decimal

> create CRstring 10 c, 0 c,

> Strings created with S" will sometimes but not always be followed by a zero-byte

> in memory; use Z" for reliability, as it guarantees the terminating zero-byte.

> Neal

We got heaps of snow here so I'm inside for the time,
gunnar.

Re: Newbie writing to memo

Posted by [Neal Bridges](#) on March 09, 1999 at 20:42:55:

In Reply to: *Re: Newbie writing to memo* posted by gunnar shogren on March 09, 1999 at 20:11:00:

> Well yes, that what I thought too,

> But when I use either Allen Chen's appendMemo or just imbed decimal 10

> in a string (using WriteNewMemo) all I get is a block symbol between

> text and everything still on the same line.
> So what could I be doing wrong?

It's working here. I just tried this:

```
\ mm  
needs memo  
decimal  
create test char a c, 10 c, char b c, char 0 c,  
OpenMemoDB  
test 3 WriteNewMemo  
CloseMemoDB
```

And the result is a new memo:

a
b

Neal

Re: Newbie writing to memo

Posted by gunnar shogren on March 10, 1999 at 16:43:25:

In Reply to: *Re: Newbie writing to memo* posted by Neal Bridges on March 09, 1999 at 20:42:55:

```
>  
> \ mm  
> needs memo  
> decimal  
> create test char a c, 10 c, char b c, char 0 c,  
> OpenMemoDB  
> test 3 WriteNewMemo  
> CloseMemoDB  
>
```

Actually the char 0 c,
should be 0 c, right?

Well I figured out where I went wrong. s" doesn't seem bad until you try to edit the memo, then all haites breaks loose. So now I know and understand, that and my code that set the LF didn't use the c!.

thanks much and have a nice day further,

gunnar

Re: Newbie writing to memo

Posted by [Neal Bridges](#) on March 10, 1999 at 18:05:37:

In Reply to: *Re: Newbie writing to memo* posted by gunnar shogren on March 10, 1999 at 16:43:25:

> Actually the char 0 c,

Yes, thanks -- you know, I carefully test these snippets on my Palm, and then instead of HotSyncing and cut&pasting, I sometimes transcribe them from the Palm screen. That'll teach me.

> should be 0 c, right?

> Well I figured out where I went wrong. s" doesn't seem bad until you try to edit the memo, then all haites breaks loose. So now I know and understand, that

> and my code that set the LF didn't use the c!.

Great! Glad it's working.

Neal

Newbie writing to memo

Posted by [gunnar shogren](#) on March 08, 1999 at 15:14:40:

First of all thanks to all who lend a hand here and of course thanks to Neal for providing us with so much fun and fiddling.

I may be missing something real simple here, but how can I send a to a memo, and why can I send an s" to memo as well as a z" ?

Thanks again and have a nice day further,

gunnar.

Underlining field selections

Posted by [Mike Will](#) on March 07, 1999 at 19:10:08:

The Palm OS behaviour of underlining selected field text is puzzling to me. Sometimes inserted characters get underlined, other times they don't. Other times, I move to a different field by highlighting part of it, and a previously underlined section of a different field is suddenly turned on. Is there a way to turn this behaviour off? Clearing the underline attribute using RsrcEdit doesn't have any effect (actually, neither does turning it on).

Neal and Steve Donahue were talking about something similar, to do with FldSetAttributes back in early February. Did anything more ever come of that?

Thanks

Mike

Re: Underlining field selections

Posted by [Neal Bridges](#) on March 07, 1999 at 19:27:13:

In Reply to: *Underlining field selections* posted by Mike Will on March 07, 1999 at 19:10:08:

> The Palm OS behaviour of underlining selected field text is puzzling to me.
> Sometimes inserted characters get underlined, other times they don't. Other
> times, I move to a different field by highlighting part of it, and a
previously
> underlined section of a different field is suddenly turned on. Is there a way
> to turn this behaviour off? Clearing the underline attribute using RsrcEdit
> doesn't have any effect (actually, neither does turning it on).

> Neal and Steve Donahue were talking about something similar, to do with
> FldSetAttributes back in early February. Did anything more ever come of that?

Are you running my ClearHack, Mike? Sounds like you might be. ClearHack is designed to affect underlining -- it removes underlining wherever it can, but sometimes (while editing multi-line fields) the Palm OS puts the underlining back in under inserted characters.

Neal

Re: Underlining field selections

Posted by [Mike Will](#) on March 07, 1999 at 20:56:03:

In Reply to: *Re: Underlining field selections* posted by Neal Bridges on March 07, 1999 at 19:27:13:

> Are you running my ClearHack, Mike? Sounds like you might be. ClearHack is
> designed to affect underlining -- it removes underlining wherever it can, but
> sometimes (while editing multi-line fields) the Palm OS puts the underlining
> back in under inserted characters.

Nope. I've tried ClearHack, and it's great, but I don't have any hacks installed because the only thing I use my PalmIII for is development and I try to minimize the number of variables.

The strange thing about this behaviour is that it only occurs after highlighting a selection in a field, and while the pen is still down. It's a minor annoyance, but it looks unprofessional because it's so random. What I'll

try next is tweaking some of the field attributes.

Thanks, Neal.

Mike

Re: Underlining field selections

Posted by [Neal Bridges](#) on March 07, 1999 at 20:58:54:

In Reply to: *Re: Underlining field selections* posted by Mike Will on March 07, 1999 at 20:56:03:

> > Are you running my ClearHack, Mike? Sounds like you might be. ClearHack is
> > designed to affect underlining -- it removes underlining wherever it can,
but
> > sometimes (while editing multi-line fields) the Palm OS puts the underlining
> > back in under inserted characters.

> Nope. I've tried ClearHack, and it's great, but I don't have any hacks
> installed because the only thing I use my PalmIII for is development and I try
> to minimize the number of variables.

> The strange thing about this behaviour is that it only occurs after
> highlighting a selection in a field, and while the pen is still down. It's a
> minor annoyance, but it looks unprofessional because it's so random. What I'll
> try next is tweaking some of the field attributes.

It's possible your field isn't tall enough for the font you're using. If you
want to send me your resources, I'll have a look.

Neal

Re: Underlining field selections

Posted by [Mike Will](#) on March 07, 1999 at 22:34:31:

In Reply to: *Re: Underlining field selections* posted by Neal Bridges on March
07, 1999 at 20:58:54:

> I had a look. I think your fields are just a little too close together,
> vertically.

Yup. You nailed it. I added **one pixel** of separation and all is
well now. I'll retire the mousetrap metaphor, but allow me one final ***SNAP***

Merci beaucoup

Mike

Re: Underlining field selections

Posted by [Neal Bridges](#) on March 07, 1999 at 22:38:12:

In Reply to: *Re: Underlining field selections* posted by Mike Will on March 07, 1999 at 22:34:31:

> > I had a look. I think your fields are just a little too close together,
> > vertically.

> Yup. You nailed it. I added **one pixel** of separation and all is
> well now. I'll retire the mousetrap metaphor, but allow me one final
SNAP

Well, in this case it's something you'd run into with any graphical OS -- if
objects overlap they may interact oddly.

Glad I could help!

Neal

Re: Underlining field selections

Posted by [Mike Will](#) on March 07, 1999 at 22:50:43:

In Reply to: *Re: Underlining field selections* posted by Neal Bridges on March
07, 1999 at 22:38:12:

> Well, in this case it's something you'd run into with any graphical OS -- if
> objects overlap they may interact oddly.

True enough.

As a postscript to this story, I've also discovered that if you have a field
highlighted, then you click a button, the ghost underlining returns and sticks
in the highlighted field. This isn't fixed by increasing the field spacing.
However, that one is minor and rare enough for me to ignore.

Mike

Saving application state between incarnations.

Posted by [Steve Gibson](#) on March 07, 1999 at 15:45:24:

What all is involved with saving a standalone app's state between incarnations?
I'm not sure where to start...

Re: Saving application state between incarnations.

Posted by [Neal Bridges](#) on March 07, 1999 at 18:37:24:

In Reply to: *Saving application state between incarnations.* posted by Steve Gibson on March 07, 1999 at 15:45:24:

> What all is involved with saving a standalone app's state between incarnations?
> I'm not sure where to start...

Check out `PrefSetAppPreferencesV10` and `PrefGetAppPreferencesV10` (or the Palm OS 2 and later versions without the V10 suffixes). They're what I use in "Swatch" to store the timezone and DST settings, and should do the trick for storing any data you need to retain between sessions.

If you have an enormous amount of state, it might be wise to create a database and store the data there.

Neal

Launch Code/Flags

Posted by [Andrew Houghton](#) on March 06, 1999 at 23:51:32:

I didn't see anything in the manual on how to get the applications launch code and flags when a Quartus app starts. Normally, when coding in C, these are passed to `PilotMain` on invocation. Can anyone provide some insight on how to access them?

Re: Launch Code/Flags

Posted by [Neal Bridges](#) on March 06, 1999 at 23:56:08:

In Reply to: *Launch Code/Flags* posted by Andrew Houghton on March 06, 1999 at 23:51:32:

> I didn't see anything in the manual on how to get the applications launch code
> and flags when a Quartus app starts. Normally, when coding in C, these are
> passed to PilotMain on invocation. Can anyone provide some insight on how to
> access them?

I haven't provided any words for accessing them -- they're available, but there's been no demand for them yet. I'll add it in in the next update.

Neal

Quartus Forth update: 1.2.1 now available

Posted by [Neal Bridges](#) on March 06, 1999 at 14:31:47:

Version 1.2.1 is now available in the File Area, fixing a bug in **fpdissect**.

Neal

- [File Area](#)

PilotGear Registrations since March 4/99

Posted by [Neal Bridges](#) on March 05, 1999 at 23:52:35:

Hi folks. There's apparently a hitch in the sales-processing system at PilotGear -- I haven't received any registered sales info since March 3rd. I'm trying to be patient about it. As soon as I get the info, I'll send the registrations immediately.

Neal

Re: PilotGear Registrations since March 4/99

Posted by [Neal Bridges](#) on March 06, 1999 at 19:11:39:

In Reply to: *PilotGear Registrations since March 4/99* posted by Neal Bridges on March 05, 1999 at 23:52:35:

> Hi folks. There's apparently a hitch in the sales-processing system at
> PilotGear

They seem to be back on track. I've sent out the registrations; if you've registered and haven't received a message, let me know.

Neal

OPG (Operator Precedence Grammar) now available in the File Area!

Posted by [Neal Bridges](#) on March 05, 1999 at 21:48:54:

Look for *opg.zip* in the Quartus Forth file area. It's Wil Baden's "Operator Precedence Grammar", broken into memos and reformatted for Quartus Forth (it's portable ANSI Forth code, and thus required no code changes!).

OPG is really good stuff. It allows algebraic (infix) syntax for floating-point calculations, for example:

```
fvariable x
let x=355/133:
let x=5.123+x:
let x=x*2.173-5*7.1:
let x: f.
```

let automatically translates the infix notation into postfix notation. It works in interpretation state, and in compiled words.

Enjoy!

Neal

PDB-Files to Link on PalmIII

Posted by [Ekkehard Skirl](#) on March 05, 1999 at 17:23:08:

I did copy PDB-Files into the ADD-ON-Path. One Time i saw it on my PalmII, but i did forget, how i did show this list of Names. And then too i can't read this File on the PalmIII. e.i. DPANS94.PDB. Please help me this step forward. Thanks.

Tschüssikowski - Ekkehard Skirl

Re: PDB-Files to Link on PalmIII

Posted by [Neal Bridges](#) on March 05, 1999 at 20:52:13:

In Reply to: *PDB-Files to Link on PalmIII* posted by Ekkehard Skirl on March 05, 1999 at 17:23:08:

> I did copy PDB-Files into the ADD-ON-Path. One Time i saw it on my PalmII, but
> i did forget, how i did show this list of Names. And then too i can't read
this
> File on the PalmIII. e.i. DPANS94.PDB. Please help me this step forward.
> Thanks.

> Tschüssikowski - Ekkehard Skirl

To read that document, you'll need a 'Doc' reader. There are a number of Doc readers available at www.pilotgear.com.

Neal

FldSetTextHandle

Posted by [Mike Will](#) on March 04, 1999 at 22:52:43:

>Had a look, Mike -- library.zip and libtxt.zip seem in order. Is there a
>chanceyou were looking at the versions from Quartus Forth 1.1.0?
Sorry, Neal, it all looks ok now, don't know what I saw before. I'm wondering if maybe I was looking at cached stuff in IE or something.

I'm really stumped about a PalmOS call. I've checked DejaNews and most of the usual resources to no avail. Below is a simplified chunk of code showing the sequence of OS calls but not the stack traffic (all the Forth is correct and working). This code simply writes a Forth string to a field, and in fact, it works. However, if the string's length is odd (1 or 3), one garbage character

appears at the end of the field. No garbage appears for even length strings.

```
MemHandleNew      ( size. -- VoidHand. )
MemHandleLock     ( h. -- &VoidPtr. )
MemMove          ( numBytes. &sp. &dstP. -- Err )
MemHandleUnlock  drop ( h. -- Err )
FldSetTextHandle ( textHandle. &fld. -- )
FldDrawField    ( &fld. -- )
MemHandleFree    ( h. -- Err )
```

At first I thought that cells were being allocated instead of chars, but no. I've checked the size of the handle being allocated, it's byte aligned. So are the parameters just before the MemMove, eg. (3 0 src2 src1 dst2 dst1) to write a 3-character string. I'm not using Z strings, just raw text. The field is fully enabled and editable.

I'd offer my first born to anyone who can solve this one, but whenever I do that, people always bring him back the next day.

Mike

Re: FldSetTextHandle

Posted by [Neal Bridges](#) on March 04, 1999 at 23:00:48:

In Reply to: *FldSetTextHandle* posted by Mike Will on March 04, 1999 at 22:52:43:

> At first I thought that cells were being allocated instead of chars, but no.
> I've checked the size of the handle being allocated, it's byte aligned. So are
> the parameters just before the MemMove, eg. (3 0 src2 src1 dst2 dst1) to
> write a 3-character string. I'm not using Z strings, just raw text. The field
> is fully enabled and editable.

> I'd offer my first born to anyone who can solve this one, but whenever I do
> that, people always bring him back the next day.

Keep the child. I believe the string you pass must be zero-byte-terminated; you'd think the system would check the length of the memory area you're passing, but it doesn't.

Neal

Re: FldSetTextHandle

Posted by [Mike Will](#) on March 05, 1999 at 09:27:19:

In Reply to: *Re: FldSetTextHandle* posted by Neal Bridges on March 04, 1999 at 23:00:48:

> Keep the child. I believe the string you pass must be zero-byte-terminated;
> you'd think the system would check the length of the memory area you're
> passing, but it doesn't.

I tried passing a source Zstring with correct length, I still get the garbage character on odd length strings. I adjusted the code to move the 0 byte terminator as well, ie length+1, and it works, although I can't tell if the 0 byte is occupying any screen space (it's going to cause trouble for me if it is). I changed the code to use StrCopy instead of MemMove, and it works properly. So, it appears you're right about MemMove needing Zstrings, not as a terminator, but as a coverup for the bug it has moving odd-length strings. **[**SNAP** ..ouch, another mousetrap]** This makes MemMove awkward and useless for copying strings, we should use StrCopy instead and not have to worry about the string length. The bad news is that we have to massage Forth strings into Zstrings (involving a temp buffer - yeaachhhh) before copying them to a field. Ugly. I would complain to 3Com about it, but if you follow their support groups, you'll notice that complainers are cut off at the knees in a storm of derision and arrogance (unlike the warm and fuzzy support we enjoy at Quartus). Hopefully the recent plunge in 3Com stock will shake a few things up over there. Do you have any thought on how the Royal DaVinci OS compares?

Thanks again for your help, Neal.

Mike

Re: FldSetTextHandle

Posted by [Neal Bridges](#) on March 05, 1999 at 10:35:35:

In Reply to: *Re: FldSetTextHandle* posted by Mike Will on March 05, 1999 at 09:27:19:

> > Keep the child. I believe the string you pass must be zero-byte-terminated;
> > you'd think the system would check the length of the memory area you're
> > passing, but it doesn't.

>
> I tried passing a source Zstring with correct length, I still get the garbage
> character on odd length strings. I adjusted the code to move the 0 byte
> terminator as well, ie length+1, and it works, although I can't tell if the 0
> byte is occupying any screen space (it's going to cause trouble for me if it

> is). I changed the code to use StrCopy instead of MemMove, and it works
> properly. So, it appears you're right about MemMove needing Zstrings, not as a
> terminator, but as a coverup for the bug it has moving odd-length strings.

I don't think MemMove has such a bug. When I suggested you pass
zero-byte-terminated strings, I meant for you to also copy the zero-byte
(length+1). It sounds like it's working -- and the zero byte won't display in
the field, not to worry (you'd notice it if it did -- a hollow rectangle).

> Ugly. I would complain to 3Com about it, but if you follow their support
> groups, you'll notice that complainers are cut off at the knees in a storm of
> derision and arrogance (unlike the warm and fuzzy support we enjoy at
Quartus).

> Hopefully the recent plunge in 3Com stock will shake a few things up over
> there. Do you have any thought on how the Royal DaVinci OS compares?

The daVinci OS is appreciably more primitive than the Palm OS.

> Thanks again for your help, Neal.

Not a problem!

Neal

Re: FldSetTextHandle

Posted by [Mike Will](#) on March 05, 1999 at 14:24:05:

In Reply to: *Re: FldSetTextHandle* posted by Neal Bridges on March 05, 1999 at
10:35:35:

> I don't think MemMove has such a bug. When I suggested you pass
> zero-byte-terminated strings, I meant for you to also copy the zero-byte
> (length+1). It sounds like it's working -- and the zero byte won't display
in
> the field, not to worry (you'd notice it if it did -- a hollow rectangle).

Ok, it's a question of semantics, I guess. But if I sold you a belt then told
you that you'll need a pair of suspenders to make it work...

What I'm worried about isn't the display so much, but the field storage. I've
noticed that if I store one more byte in a field than its width is set to, it
will display exactly nothing -- an entirely blank field. *SNAP*

Anyway, I'm just spoiled with Quartus, I'll leave the PalmOS alone for now.

> The daVinci OS is appreciably more primitive than the Palm OS.

Oh, too bad. I remember you saying before that it has a stripped down ROM.

Digital and Analog Control

Posted by [Carl Baxter](#) on March 04, 1999 at 22:46:45:

I just happened upon the Quartus Forth/Palm combination. Do any of the Palm units have ports for digital and/or analog input-output? The package with battery power and built in display seems attractive for a portable control system for prototypes.

Re: Digital and Analog Control

Posted by [Neal Bridges](#) on March 04, 1999 at 22:57:49:

In Reply to: *Digital and Analog Control* posted by Carl Baxter on March 04, 1999 at 22:46:45:

> I just happened upon the Quartus Forth/Palm combination. Do any of the Palm
> units have ports for digital and/or analog input-output? The package with
> battery power and built in display seems attractive for a portable control
> system for prototypes.

Aside from the new Palm V (which has an additional new interface port), the Palm series has only an RS-232 port, and, in the Palm III series and beyond, an IRDA-compliant IR transceiver. It's possible to do a certain amount of digital I/O via the RS-232 pins.

Neal

Re: Digital and Analog Control

Posted by [Erwin Schomburg](#) on March 05, 1999 at 08:05:10:

In Reply to: *Re: Digital and Analog Control* posted by Neal Bridges on March 04, 1999 at 22:57:49:

> > I just happened upon the Quartus Forth/Palm combination. Do any of the Palm
> > units have ports for digital and/or analog input-output? The package with
> > battery power and built in display seems attractive for a portable control
> > system for prototypes.

> Aside from the new Palm V (which has an additional new interface port), the
> Palm
> series has only an RS-232 port, and, in the Palm III series and beyond, an
> IRDA-compliant IR transceiver. It's possible to do a certain amount of
> digital I/O via the RS-232 pins.

> Neal

....e.g. attach an A/D converter to them...

See www.techcenterlabs.com and various other sites for some projects to control peripherals (robots and the like).

/Erwin

Re: Digital and Analog Control

Posted by [jay](#) on March 09, 1999 at 11:31:56:

In Reply to: *Re: Digital and Analog Control* posted by Erwin Schomburg on March 05, 1999 at 08:05:10:

> > > I just happened upon the Quartus Forth/Palm combination. Do any of the Palm

> > > units have ports for digital and/or analog input-output? The package with
> > > battery power and built in display seems attractive for a portable control
> > > system for prototypes.

> > Aside from the new Palm V (which has an additional new interface port), the
> > Palm

> > series has only an RS-232 port, and, in the Palm III series and beyond, an
> > IRDA-compliant IR transceiver. It's possible to do a certain amount of
> > digital I/O via the RS-232 pins.

> > Neal

>e.g. attach an A/D converter to them...

> See www.techcenterlabs.com and various other sites for some projects to control
> peripherals (robots and the like).

> /Erwin

Check out <http://www.datastick.com/specs.html> (it uses the serial port).

-jay

- [Data Stick](#)

Corrected simple-handler

Posted by [Neal Bridges](#) on March 04, 1999 at 19:58:07:

There's an updated version of *simple-handler* in the File Area.

Subsequent to the changes made to **callback/end-callback** in versino 1.2.0, *simple-handler* needed adjusting, as will any callback code that accesses stack arguments -- there are now two additional cells on 'top' of the callback stack (they should have been there all along, hence the

correction in 1.2.0).

If you're having any trouble with callback code under version 1.2.0, send it along and I'll be happy to help.

Neal

- [File Area](#)

Library.MPA and the Emulator

Posted by [Michael Kizer](#) on March 04, 1999 at 18:51:40:

I have been unsuccessful in getting the Network Hotsync to sync with my Palm Desktop software. So I was wondering if there is another way to get the library.mpa info into the emulator? I'd like to experiment with Quartus there before moving everything over to my already crowded Pilot...

Thanks,
~Mike

Re: Library.MPA and the Emulator

Posted by [Neal Bridges](#) on March 04, 1999 at 19:03:44:

In Reply to: *Library.MPA and the Emulator* posted by Michael Kizer on March 04, 1999 at 18:51:40:

> I have been unsuccessful in getting the Network Hotsync to sync with my Palm
> Desktop software. So I was wondering if there is another way to get the
> library.mpa info into the emulator? I'd like to experiment with Quartus there
> before moving everything over to my already crowded Pilot...

You're just slightly ahead of me, Mike. I'm presently making a MemoPad.PDB that can be installed in the emulator, providing all the library code. I'll post an announcement when it's in the file area.

Neal

Re: Library.MPA and the Emulator

Posted by [Michael Kizer](#) on March 05, 1999 at 12:01:26:

In Reply to: *Re: Library.MPA and the Emulator* posted by Neal Bridges on March 04, 1999 at 19:03:44:

>I'm presently making a MemoPad.PDB that
> can be installed in the emulator, providing all the library code.
Cool, thanks Neal! I'm looking forward to checking this out very soon.

~Mike

MemoDB.PDB now available in the File Area.

Posted by [Neal Bridges](#) on March 04, 1999 at 21:24:29:

In Reply to: *Re: Library.MPA and the Emulator* posted by Neal Bridges on March 04, 1999 at 19:03:44:

I've put MemoDB.PDB in the Quartus Forth File Area -- it has all the Quartus Forth library files, as well as the sample sources, and can be directly installed in the Palm OS Emulator. Bear in mind that installing this will overwrite all memos in the current emulator session.

DO NOT use this file to install memos on an actual device; instead, use *library.mpa*, installed via the Palm Desktop software.

Neal

DUMP revisited

Posted by [Mike Will](#) on March 04, 1999 at 14:17:02:

Here's an extended version of DUMP following in the steps of Ed Beroset on Jan 9th and adding some old Forth-79 code. This one prints a hex dump adjacent to a text dump like in most debuggers. Two weak spots: I haven't done those nice pixel-aligned columns like in RSRCEDIT, and speed, which is crippled turtle class. Words like these that involve lots of nibble & byte operations in tight loops cry out for re-writing in CODE. Unfortunately, I don't know 68K assembly language, and don't have time to learn it (although I wish I did). Of course, the whole point of a tool like Quartus is that it allows you to develop on the Pilot, so I don't mind giving up some speed and comfort to achieve portability. (I'm trying hard to like the Emulator and all its associated tools, but it seems a lot like CodeView, Turbo Debugger or Visual C++ to me. One might as well become a MicroSerf :)

\ DUMP and DU 02.27.99 MRW

needs core-ext
needs toolkit

```
: d.2 ( addr len -- ) bounds ?do i c@
  s>d <# # # #> type space loop ;
: emit. ( char -- ) dup bl 127 within
  0= if drop [char] . then emit ;
: dln ( addr --- ) cr dup
  4 u.r [char] : emit 2 spaces
  dup 8 d.2 space
  8 bounds ?do i c@ emit. loop ;

: DUMP ( addr len -- ) hex
  bounds ?do i dln ekey if leave then
  8 +loop decimal cr ;
: DU ( addr -- addr+64 )
  dup 64 dump 64 + ;
```

DUMP takes a start address and block length then prints a scrolling memory dump, which you can stop anytime with a double tap. DU takes only a starting address, then prints memory in sequential 64 byte blocks every time a new DU is entered. I think they're both Forth-79 standard words, but beyond that I'm not sure (show's how long it's been since I've been into Forth).

Mike

Re: DUMP revisited -- speeded up an amazing amount!

Posted by [Neal Bridges](#) on March 04, 1999 at 14:27:31:

In Reply to: *DUMP revisited* posted by Mike Will on March 04, 1999 at 14:17:02:

```
> text dump like in most debuggers. Two weak spots: I haven't done those nice
> pixel-aligned columns like in RSRCEDIT, and speed, which is crippled turtle
> class.
```

It's not your loops slowing things down, Mike -- it's the timeout on EKEY. This modified version runs very fast indeed:

\ DUMP and DU 02.27.99 MRW

needs core-ext
needs toolkit

```
: d.2 ( addr len -- ) bounds ?do i c@
  s>d <# # # #> type space loop ;
: emit. ( char -- ) dup bl 127 within
  0= if drop [char] . then emit ;
: dln ( addr --- ) cr dup
  4 u.r [char] : emit 2 spaces
  dup 8 d.2 space
  8 bounds ?do i c@ emit. loop ;

: DUMP ( addr len -- ) hex
  bounds ?do i dln ekey? if ekey drop leave then
  8 +loop decimal cr ;
: DU ( addr -- addr+64 )
  dup 64 dump 64 + ;
```

Neal

Re: DUMP revisited -- speeded up an amazing amount!

Posted by [Mike Will](#) on March 04, 1999 at 19:11:06:

In Reply to: *Re: DUMP revisited -- speeded up an amazing amount!* posted by Neal Bridges on March 04, 1999 at 14:27:31:

> It's not your loops slowing things down, Mike -- it's the timeout on EKEY.
This
> modified version runs very fast indeed:

Ahhh, wonderful, thanks Neal. I thought it seemed suspiciously slow. It's helped me a lot while developing database stuff.
Mike

Bug in fpdissect

Posted by [Neal Bridges](#) on March 04, 1999 at 00:58:23:

Steven Donahue found a bug in the new **fpdissect** word. I just found and killed it; the new version is in testing and I'll make it available tomorrow.

The problem: if the precision-rounding of a floating-point value causes an adjustment of the exponent value, the original exponent is returned rather than the adjusted exponent. This can cause **f.** to sometimes display numbers smaller than one with an order-of-magnitude error.

Neal

formulas

Posted by [E. Ross Helton](#) on March 03, 1999 at 19:56:04:

I am still having trouble converting formulas from other programming activities to Forth.

For example I use this formula for another program I created and it works fine.

```
X = .303439 * SQR(W)-.0202886 *w
Ch = INT(91.9- (91.4 -T) * (X + .474266))
```

I know that I need to convert the decimals to whole number and take the main input number times 1000 and divide by the whole number. My problem with this formula is the SQR which I haven't found an answer for and I am not getting all of my times signs and minus signs in the correct place or correct order.

Can someone be some kind as to point me in the correct direction?

Thanks and

Make it a good day!

Ross

Re: formulas

Posted by [Neal Bridges](#) on March 03, 1999 at 23:59:54:

In Reply to: *formulas* posted by E. Ross Helton on March 03, 1999 at 19:56:04:

> I am still having trouble converting formulas from other programming activities
> to Forth.

> For example I use this formula for another program I created and it works fine.

```
> X = .303439 * SQR(W)-.0202886 *w
> Ch = INT(91.9- (91.4 -T) * (X + .474266))
```

For these I'd use floating-point. Here's the "X=" line in floating-point:

```
: formulal ( r1 -- r2 ) fdup fsqrt .303439e f* fswap .0202886e f* f- ;
```

Wil Baden has written a module called "OPG" (Operator Precedence Grammar) that lets you do this:

```
fvariable W
fvariable X
let W=5:
```

```
let X=.303439*sqrt(W)-.0202886*W:
```

and so on -- if you'd like OPG I can write Wil and see if he'll let me make it available for Quartus Forth.

Neal

Re: formulas

Posted by [E. Ross Helton](#) on March 04, 1999 at 09:09:17:

In Reply to: *Re: formulas* posted by Neal Bridges on March 03, 1999 at 23:59:54:

Hi Neal;

I must say I have to scratch my head everytime I read the answers here. I feel like such a newbie newbie. Seems I'm not even at the minimal limit of some of the newbies here.

Thanks for your help. I would appreciate it if you could contact Will and ask him about letting me see that

Make it a good day!

Ross

```
> For these I'd use floating-point. Here's the "X=" line in floating-point:
> : formulal ( r1 -- r2 ) fdup fsqrt .303439e f* fswap .0202886e f* f- ;
> Wil Baden has written a module called "OPG" (Operator Precedence Grammar) that
> lets you do this:
> fvariable W
> fvariable X
> let W=5:
> let X=.303439*sqrt(W)-.0202886*W:
> and so on -- if you'd like OPG I can write Wil and see if he'll let me make it
> available for Quartus Forth.
> Neal
```

Feedback on 1.2.0

Posted by [Mike Will](#) on March 03, 1999 at 11:52:30:

Well, there's a lot to check out and explore, but here's my first pass.

1) The decompiler is tremendous. It's a real help for large apps where you're not exactly sure which source file contained a given word. You can just stay in Quartus and look at any source you like. Is there any way to turn off the generation of verbose JSR calls ? I find it's distracting to see a line such as:

```
jsr -23946(a2) = F+
```

(It also reminds me that I don't know 68k assembler).

Anyway, it works great and is FAST. Nice job.

2) Float enhancements are all I hoped for and more. I'm about to modify my GasCalc app to use the REPRESENT word, so I'll let you know how that goes. I have successfully tested FROUND, FDISSECT (I wish I'd had *that* six weeks ago when I was writing float libraries. F~ is a nice addition as well.

3) Library.zip. I notice there are two copies of the same file at the end of the list (tools-ext or something -- I deleted the extra copy). Also, the new version of Fields that does queue flushing seems to have disappeared (the old version is still posted separately. Also, the new float stuff isn't included in the zip file.

4) Miscellaneous. RECURSE works, but I used it before to implement factorial and probability functions so I didn't even know about a bug. The fldEnterEvent is being stacked properly now - great, that simplifies fields processing considerably. I'm using the EZROM version of the emulator, and it seems to run well on that (although I still can't get cable-less hotsync working).

Thanks again.

I'll go back to work now.

Mike

Re: Feedback on 1.2.0

Posted by [Neal Bridges](#) on March 03, 1999 at 12:02:37:

In Reply to: *Feedback on 1.2.0* posted by Mike Will on March 03, 1999 at 11:52:30:

> Well, there's a lot to check out and explore, but here's my first pass.

> 1) The decompiler is tremendous. It's a real help for large apps where you're not exactly sure which source file contained a given word. You can just stay in

> Quartus and look at any source you like. Is there any way to turn off the generation of verbose JSR calls ? I find it's distracting to see a line such

> as:
> jsr -23946(a2) = F+
> (It also reminds me that I don't know 68k assembler).
> Anyway, it works great and is FAST. Nice job.

I'll be enhancing the disassembler over time; you've hit on one of items on my list.

> 2) Float enhancements are all I hoped for and more. I'm about to modify my
> GasCalc app to use the REPRESENT word, so I'll let you know how that goes. I
> have successfully tested FROUND, FDISSECT (I wish I'd had *that* six
weeks
> ago when I was writing float libraries. F~ is a nice addition as well.

(**f.**) might be more appropriate for your app.

> 3) Library.zip. I notice there are two copies of the same file at the end of
> the list (tools-ext or something -- I deleted the extra copy). Also, the new
> version of Fields that does queue flushing seems to have disappeared (the old
> version is still posted separately. Also, the new float stuff isn't included
in
> the zip file.

Thanks, I'll clean that up today.

> 4) Miscellaneous. RECURSE works, but I used it before to implement factorial
> and probability functions so I didn't even know about a bug. The fldEnterEvent
> is being stacked properly now - great, that simplifies fields processing
> considerably. I'm using the EZROM version of the emulator, and it seems to run
> well on that (although I still can't get cable-less hotsync working).

BTW, there are new IIIx and V ROM images available now at 3Com's site.

Thanks for the feedback!

Neal

Re: Feedback on 1.2.0

Posted by [Neal Bridges](#) on March 04, 1999 at 22:24:29:

In Reply to: *Re: Feedback on 1.2.0* posted by Neal Bridges on March 03, 1999 at 12:02:37:

> > 3) Library.zip. I notice there are two copies of the same file at the end of
> > the list (tools-ext or something -- I deleted the extra copy). Also, the new
> > version of Fields that does queue flushing seems to have disappeared (the
old
> > version is still posted separately. Also, the new float stuff isn't included
> in
> > the zip file.

> Thanks, I'll clean that up today.

Had a look, Mike -- library.zip and libtxt.zip seem in order. Is there a chance you were looking at the versions from Quartus Forth 1.1.0?

Neal

Re: Feedback on 1.2.0

Posted by [Erwin Schomburg](#) on March 03, 1999 at 13:07:33:

In Reply to: *Re: Feedback on 1.2.0* posted by Neal Bridges on March 03, 1999 at 12:02:37:

> BTW, there are new IIIx and V ROM images available now at 3Com's site.

> Thanks for the feedback!

> Neal

Off-topic, but does anyone know or has experienced where the difference between the two new files and further, between those and old EZROM image lies?

Ah, not to forget to blame Neal for another fine tuning of our favorite toy/tool 8-)

/Erwin

Changes in new IIIx and V ROM images

Posted by [Neal Bridges](#) on March 03, 1999 at 13:46:56:

In Reply to: *Re: Feedback on 1.2.0* posted by Erwin Schomburg on March 03, 1999 at 13:07:33:

> Off-topic, but does anyone know or has experienced where the difference between

> the two new files and further, between those and old EZROM image lies?

They're pretty much the same ROM; the newer ROMs identify themselves as the IIIx and V, and the V has code to handle the rechargeable battery.

> Ah, not to forget to blame Neal for another fine tuning of our favorite toy/tool

> 8-)

Blame I'm glad to take. Let me know how it goes!

Neal

Re:Bitmap in Ink Manager to Palm OS format.

Posted by [Jim](#) on March 22, 1999 at 22:46:17:

In Reply to: *Changes in new IIIx and V ROM images* posted by Neal Bridges on March 03, 1999 at 13:46:56:

> > Off-topic, but does anyone know or has experienced where the difference
> between
> > the two new files and further, between those and old EZROM image lies?
> They're pretty much the same ROM; the newer ROMs identify themselves as the IIIx
> and V, and the V has code to handle the rechargeable battery.
> > Ah, not to forget to blame Neal for another fine tuning of our favorite
> toy/tool
> > 8-)
> Blame I'm glad to take. Let me know how it goes!
> Neal

I have a CrossPad with IBM Ink Manager and would like to download data to my Palm IIIx--have been told there is a program that can provide a bitmap to Palm Program would conver Ink Manager to bitmap, then convert the bitmap to Palm OS format. Know where I can download such a program. thanks.

Re:Bitmap in Ink Manager to Palm OS format.

Posted by [Neal Bridges](#) on March 22, 1999 at 22:56:56:

In Reply to: *Re:Bitmap in Ink Manager to Palm OS format.* posted by Jim on March 22, 1999 at 22:46:17:

> I have a CrossPad with IBM Ink Manager and would like to download data to my
> Palm IIIx--have been told there is a program that can provide a bitmap to
> Palm Program would conver Ink Manager to bitmap, then convert the bitmap
> to
> Palm OS format. Know where I can download such a program. thanks.

I'm not sure that you've come to the right forum for that question -- but I had a look at www.PilotGear.com and found that both TealPaint and ImageViewer offer Win95 bitmap import/export utilities. I don't know what formats IBM Ink Manager can save in, but as a worst-case you could capture the Ink Manager screen and paste it into PaintBrush, save it as a .BMP, and convert it from there.

Neal

Code efficiency question

Posted by [Steve Gibson](#) on March 03, 1999 at 05:11:23:

I have a question about code efficiency and optimization. If I have a repetitive set of code where the only difference between the different occurrences of it are the parameters that are passed to it, is it more efficient to define a word that incorporates that bit of code? For example if I have:

```
strbuff myField1 field>string dup >r  
strbuff myField2 field>string dup >r  
strbuff myField3 field>string dup >r
```

and instead, do this:

```
: >buffer ( fieldID -- len R:len )  
strbuff swap field>string dup >r ;
```

```
myField1 >buffer  
myField2 >buffer  
myField3 >buffer
```

Is the second more efficient than the first? Obviously it is easier as far as input goes once you have the >buffer word defined, but I'm curious if it makes a difference in the size of code generated at compile time.

-Steve

Re: Code efficiency question

Posted by [Neal Bridges](#) on March 03, 1999 at 10:33:38:

In Reply to: *Code efficiency question* posted by Steve Gibson on March 03, 1999 at 05:11:23:

> I have a question about code efficiency and optimization. If I have a
> repetitive set of code where the only difference between the different
> occurrences of it are the parameters that are passed to it, is it more
efficient
> to define a word that incorporates that bit of code? For example if I have:

```
> strbuff myField1 field>string dup >r  
> strbuff myField2 field>string dup >r  
> strbuff myField3 field>string dup >r
```

> and instead, do this:

```
> : >buffer ( fieldID -- len R:len )
```

```
> strbuff swap field>string dup >r ;  
  
> myField1 >buffer  
> myField2 >buffer  
> myField3 >buffer  
  
> Is the second more efficient than the first? Obviously it is easier as far as  
> input goes once you have the >buffer word defined, but I'm curious if it makes  
> a  
> difference in the size of code generated at compile time.
```

It makes the generated code appreciably smaller, as well as making your source much more legible. The process of moving short repeated code-sequences into well-named words is called 'factoring', and it's a key skill for writing good code.

Neal

Re: Code efficiency question

Posted by [Erwin Schomburg](#) on March 03, 1999 at 13:15:56:

In Reply to: *Re: Code efficiency question* posted by Neal Bridges on March 03, 1999 at 10:33:38:

```
> > I have a question about code efficiency and optimization. If I have a  
> > repetitive set of code where the only difference between the different  
> > occurrences of it are the parameters that are passed to it, is it more  
> > efficient  
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> > strbuff myField1 field>string dup >r  
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> > strbuff myField3 field>string dup >r  
  
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> > : >buffer ( fieldID -- len R:len )  
> > strbuff swap field>string dup >r ;  
  
> > myField1 >buffer  
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> > Is the second more efficient than the first? Obviously it is easier as far as  
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> > a  
> > difference in the size of code generated at compile time.  
  
> > It makes the generated code appreciably smaller, as well as making your source  
> > much more legible. The process of moving short repeated code-sequences into
```

> well-named words is called 'factoring', and it's a key skill for writing good
> code.

> Neal

Good answer and good advise, but define efficiency, is it smallest code footprint, fastest execution or best code readability? With the generally small code footprint in Quartus I would always opt for optimum factoring and code readability, but when apps tend to expand to real big beasts the optimum may be found weighting in the other aspects.

Just my .02€

/Erwin

Re: Code efficiency question

Posted by [William Tanksley](#) on March 03, 1999 at 15:01:53:

In Reply to: *Re: Code efficiency question* posted by Erwin Schomburg on March 03, 1999 at 13:15:56:

> Good answer and good advise, but define efficiency, is it smallest code
> footprint, fastest execution or best code readability? With the
> generally small
> code footprint in Quartus I would always opt for optimum factoring and code
> readability, but when apps tend to expand to real big beasts the optimum
> may be found weighting in the other aspects.

Because Forth uses two stacks and implicit parameter passing, function calls have relatively small overhead. So you'll lose a TINY bit of speed, but that's not significant except in an inner loop, and there you won't notice an improvement until you need to shift to assembler anyhow.

As always, do what makes you comfortable. Programming's too complex to allow you the luxury of deliberately twisting your brain around new concepts.

> /Erwin

-Billy

Re: Code efficiency question

Posted by [Neal Bridges](#) on March 03, 1999 at 15:10:48:

In Reply to: *Re: Code efficiency question* posted by William Tanksley on March 03, 1999 at 15:01:53:

> As always, do what makes you comfortable. Programming's too complex to
> allow you the luxury of deliberately twisting your brain around new concepts.

Forth does demand a bit of mental retooling for best results. Good factoring (writing short, well-named words) is one valuable skill; another is minimizing the amount of stack traffic (this happens naturally as a byproduct of good factoring).

As a consequence of good factoring, you also get a high degree of code re-use, and lucid, self-documenting source.

Trying to write Forth in the style common to most C source -- large functions with many parameters -- will lead to a fair amount of frustration.

I agree that it's important to develop a style you're comfortable with, but at the same time it's a good idea to strive toward recommended ideals, especially when those recommendations are intended to allow you to derive maximum benefit from the programming environment.

Neal

Re: Code efficiency question

Posted by [Neal Bridges](#) on March 03, 1999 at 13:40:17:

In Reply to: *Re: Code efficiency question* posted by Erwin Schomburg on March 03, 1999 at 13:15:56:

> Good answer and good advise, but define efficiency, is it smallest code
> footprint, fastest execution or best code readability? With the generally
small
> code footprint in Quartus I would always opt for optimum factoring and code
> readability, but when apps tend to expand to real big beasts the optimum may
be
> found weighting in the other aspects.

> Just my .02€

Good factoring leads to the smallest code footprint, and best code readability. There's a (very small) overhead for calling a word rather than repeating code inline, but there are very few circumstances under which that matters at all, and even those can be handled in most cases by making the factored words `INLINE` words.

Neal

Quartus Forth version 1.2.0 now available!

Posted by [Neal Bridges](#) on March 02, 1999 at 20:59:16:

The latest update to Quartus Forth is now available for download!

Among the new features:

- Added to kernel: **fpdissect** (F: r --) (-- sign exponent umantissa.)
- Added special handling for OE0 in **FROUND**
- Adjusted precision rounding in **FS**.
- Modified event handler to pass FldEnterEvents and tblSelectEvents
- Modified callback/end-callback to allow correct parameter access
- Fixed bug in **RECURSE**
- Added to library: *float.txt* (**REPRESENT**)
- Added to library: *float-ext.txt* (**F~ (f.) F.**)
- Added to library: *disasm 1.0* (**SEE**)

The new disassembler, along with **SEE** represents a fair amount of effort; as always, I look forward to your feedback.

Neal

Re: Quartus Forth version 1.2.0 now available!

Posted by [Carl Jacobsen](#) on March 03, 1999 at 13:46:11:

In Reply to: *Quartus Forth version 1.2.0 now available!* posted by Neal Bridges on March 02, 1999 at 20:59:16:

Great work, Neal! The disassembler is really nice! Took a bit to realize that I could do "true more" before doing something like "see see", so that I don't have to read the scrolling text as fast as Mr. Data (by the by, is there a keystroke that "more" interprets as "display the next page"? -- tapping the "more..." prompt gets one line, and most anything scrawled on the Grafitti pad scrolls all the remaining text past).

I've one suggestion, and it's entirely housekeeping oriented:

On the "Quartus Forth Files" page on the website, along with the new evaluation version of Quartus, and library.zip and libtxt.zip, we've also got new copies of every individual library file; makes it a little difficult to be sure what to download (especially when looking for new versions of things that aren't officially in the library, like newmemo.txt). What do you think of moving the

individual library files into separate "Quartus Forth Library Files" area (or even "Individual Quartus Forth Library Files"), with suitable blurbs and pointers between each, e.g. at the top of the existing "Quartus Forth Files" page, have something like:

All the files in the standard Quartus library can be found in `_libtxt.zip_` (as individual `.txt` files), and `_library.zip_` (as a Win9X/NT Palm Desktop "MemoPad archive"), or as individual files on the `_Individual_Quartus_Forth_Library_Files_` page.

(the words surrounded with `"_"`'s could be links.) This way, the implication of something showing up on the main Quartus Forth Files page would be closer to "this is something you likely don't already have" (or at least a newer version of something you do have).

Anyways, congratulations on the new release, Neal, looks great so far :-)

-- Carl

Re: Quartus Forth version 1.2.0 now available!

Posted by [Neal Bridges](#) on March 03, 1999 at 13:50:19:

In Reply to: *Re: Quartus Forth version 1.2.0 now available!* posted by Carl Jacobsen on March 03, 1999 at 13:46:11:

> Great work, Neal! The disassembler is really nice! Took a bit
> to realize that I could do "true more" before doing something like
> "see see", so that I don't have to read the scrolling text as fast
> as Mr. Data (by the by, is there a keystroke that "more" interprets
> as "display the next page"? -- tapping the "more..." prompt gets one
> line, and most anything scrawled on the Grafitti pad scrolls all
> the remaining text past).

"more" works like this: tapping the screen scrolls one line; any Graffiti symbol or PgUp/PgDn button scrolls one page; Graffiti Enter turns 'more' off.

> I've one suggestion, and it's entirely housekeeping oriented:

> On the "Quartus Forth Files" page on the website, along with the
> new evaluation version of Quartus, and library.zip and libtxt.zip,
> we've also got new copies of every individual library file; makes
> it a little difficult to be sure what to download (especially when
> looking for new versions of things that aren't officially in the
> library, like newmemo.txt). What do you think of moving the
> individual library files into separate "Quartus Forth Library Files"
> area (or even "Individual Quartus Forth Library Files"), with
> suitable blurbs and pointers between each, e.g. at the top of the
> existing "Quartus Forth Files" page, have something like:

I updated all the txt files at once in order to ensure they were all up to date.

I'll be moving them to their own section soon.

> Anyways, congratulations on the new release, Neal, looks great so far :-)

Thanks! Let me know how it goes.

Neal

Re: Quartus Forth version 1.2.0 now available!

Posted by [Mike Will](#) on March 02, 1999 at 21:52:43:

In Reply to: *Quartus Forth version 1.2.0 now available!* posted by Neal Bridges on March 02, 1999 at 20:59:16:

> The latest update to Quartus Forth is now available for download!

> Among the new features:

Holy Mackerel. It's candy store time !

Thanks a million Neal.

Mike

Newbies' question: Simple calculator

Posted by [Philippe de Rochembeau](#) on March 02, 1999 at 11:36:12:

I have just designed a simple calculator with RsrcEdit for learning purposes and am trying to write the corresponding application code in QForth. Although I have had no problems trapping key-press events, I am at a loss writing the computation code.

How would you translate key presses into computations, in such an application? For instance, how would you translate the following key-presses: '2', '+', '4', and '=', into '2 4 + .' ? I imagine that you would first push 2 on the stack, store '+' somehow (?) in a memory cell, push 4 on the stack, and, when the users presses '=', pop '+' and push it on the stack. Finally, you would display the result in the calculator's display window.

I have tried looking at the Roman Calculator's code, but it is too advanced for me.

Any help on this matter would be much appreciated.

Philippe de Rochembeau

Re: Newbies' question: Simple calculator

Posted by [Neal Bridges](#) on March 02, 1999 at 12:17:07:

In Reply to: *Newbies' question: Simple calculator* posted by Philippe de Rochambeau on March 02, 1999 at 11:36:12:

> I have just designed a simple calculator with RsrcEdit for learning purposes
>and am trying to write the corresponding application code in QForth. Although I
> have had no problems trapping key-press events, I am at a loss writing the
> computation code.

> How would you translate key presses into computations, in such an application?
[method snipped]

You have the logic more or less correct the way you describe it. You store numbers in a tiny two-position 'stack' (two variables) and keep track of the operation (+, -, /, or *) until the equals key is hit; then you do the computation and display the result.

To display numbers on-screen, in Duco I simply form the output string (Roman numerals in that case) and position it on screen using **at** and **emit**.

> I have tried looking at the Roman Calculator's code, but it is too advanced
>for me.

The calculator logic of Duco is contained in the **equals** and **operator** words. As written it is a very simple implementation of the logic of a four-function calculator; I doubt you'll come up with anything much simpler. Have a look at it, I'll be happy to explain anything that's confusing from a beginner's perspective.

Neal

Help with resources needed

Posted by [Branko Znuderl](#) on March 02, 1999 at 03:25:52:

Hi, my dear gurus,

I'm 'puting together' resources for my app with Rsrcedit and help of Steven Donahue totutorial.

For begining everything looks fine, constructing forms, menubar, menuitem, helpstring, alerts etc. is no problem.

But I have a small problem with how menus

are responding when I do preview in Rsrcedit or when I show form with menubar in Quartus.

I have open some other resources and in preview in Rsrcedit menubar and menu items are opened as I tap on it.

When I try this in my case, only first menu drops down and only items from the first menu can be selected - I can't select second or thirrh menu.

Some additional info:

tFRM 2000 is usable, modal, save behind, has title, Help ID 2010 (working ok), and Mbar ID 3000 which is not completely functional.

MBAR 3000 is menu bar which contain three menus with several menuitems, 0 at selected Menu and -1 at selected Item (I have manage to change this in Hex edit).

If I change -1 fith some other number at Selected Item and 0 with other number at Selected Menu, appropriate menu with defined menu item is opened.

Menus are not opened in Quartus eider when I showform 2000 (only first menu can be open).

Any help apprichiated.

Branko

Re: Help with resources needed

Posted by [Steven Donahue](#) on March 02, 1999 at 10:14:43:

In Reply to: *Help with resources needed* posted by Branko Znuderl on March 02, 1999 at 03:25:52:

I just added a second menu with a single menu item to my HelloWorld (exercise B) example. It works fine. Here is what I did...

Step 1 - Open the resource database in question with RsrcEdit. In this case, I opened HWRsrcB.

Step 2 - From the Resource List, select MBAR 2000 and tap open.

Step 3 - Tap the Menu silk key, and select "New". Change the name to "Test", the left field to 50, the height field to 12, and then tap the "Calc. Width"

button. This step has created a new entry on the menu bar. Now you have to add some items to this menu bar entry.

Step 4 - Select the "Test" menu entry and tap open. Now tap the Menu silk key, and select "New". Change the Title field to "Test Item" and the ID field to 9999 (arbitrary). I left the Key field blank. Now tap the "Apply" button.

Step 5 - Change the location fields at the top of the screen. Change the top field to 14 and the left field to 52. Now tap the "Calc. Size" button. Tap the "OK" button to return to the MBar 2000 resource screen. Tap the "OK" button again to return Resource List screen.

Step 6 - Test the new menu bar entry. From the Resource List screen, select the main form (tFRM 1001), and tap the "Open" button. Now tap the "Preview" button. You should see the main Hello World screen. If you now tap the Menu silk button, you should see the menu bar with the "Options" menu selected, and a new menu bar entry called "Test". If you tap the "Test" menu bar entry, it should now display the new menu item "Test Item" that was created above.

I hope this helps clear up your problem. Good luck...

Steve

> Hi, my dear gurus,

> I'm 'puting together' resources for my app with
> Rsrcedit and help of Steven Donahue totutorial.

> For begining everything looks fine, constructing
> forms, menubar, menuitem, helpstring, alerts etc.
> is no problem.

> But I have a small problem with how menus
> are responding when I do preview in Rsrcedit or
> when I show form with menubar in Quartus.

> I have open some other resources and in
> preview in Rsrcedit menubar and menu items
> are opened as I tap on it.
> When I try this in my case, only first menu drops
> down and only items from the first menu can be
> selected - I can't select second or thirth menu.

> Some additional info:
> tFRM 2000 is usable, modal, save behind,
> has title, Help ID 2010 (working ok),
> and Mbar ID 3000 which is not completely
> functional.

> MBar 3000 is menu bar which contain
> three menus with several menuitems,
> 0 at selected Menu and
> -1 at selected Item (I have manage to change
> this in Hex edit).
> If I change -1 fith some other number

> at Selected Item and
> 0 with other number at Selected Menu,
> appropriate menu with defined menu item
> is opened.

> Menus are not opened in Quartus eider
> when I showform 2000 (only first menu can
> be open).

> Any help apprichiated.

> Branko

Re: Help with resources needed

Posted by [Branko Znuderl](#) on March 02, 1999 at 12:59:24:

In Reply to: *Re: Help with resources needed* posted by Steven Donahue on March 02, 1999 at 10:14:43:

> I just added a second menu with a single menu item to my HelloWorld (exercise B)
> example. It works fine. Here is what I did...
>sniped guide how to add second menu<

It seems I have used same steps to form menu toolbar items and menu items...
so I don't see any difference betwene your and my steps.

> main form (tFRM 1001), and tap the "Open" button. Now tap the "Preview"
button.
> You should see the main Hello World screen. If you now tap the Menu silk
> button, you should see the menu bar with the "Options" menu selected, and a
new
> menu bar entry called "Test". If you tap the "Test" menu bar entry, it should
> now display the new menu item "Test Item" that was created above.

I can also open my main form and when I tap on menu silk buttun I get
menu toolbar, but only first menu is opened and I can chose only menu
items from the first menu...

...but I can not open second and thirth menu.

> I hope this helps clear up your problem. Good luck...

So far smoke of my problems did not clear up ;-)
I will start to pray to my 'fortunate' :-)))

Yea, one more thing, I'm using RsrcEdit v 0.998 02/06/99
(not registrated) ... that is OK, I hope?

Any way, thanks for your feedback.

Branko

Re: Help with resources needed

Posted by [Mike Dunker](#) on March 02, 1999 at 21:56:57:

In Reply to: *Re: Help with resources needed* posted by Branko Znuderl on March 02, 1999 at 12:59:24:

> It seems I have used same steps to form menu toolbar items and menu items...
> so I don't see any difference between your and my steps.

Make sure that all your menus have a height of 12. By default, I think the menu height is 0, which will not allow you to tap on the menu bar to open the menus. I was bitten by this same problem earlier.

> Yea, one more thing, I'm using RsrcEdit v 0.998 02/06/99
> (not registered) ... that is OK, I hope?

That's also what I use, which has worked fine for me.

Mike

Re: Help with resources needed

Posted by [Branko Znuderl](#) on March 03, 1999 at 09:16:54:

In Reply to: *Re: Help with resources needed* posted by Mike Dunker on March 02, 1999 at 21:56:57:

Dear Mike,

> > It seems I have used same steps to form menu toolbar items and menu items...
> > so I don't see any difference between your and my steps.

> Make sure that all your menus have a height of 12. By default, I think the
> menu height is 0, which will not allow you to tap on the menu bar to open the
> menus. I was bitten by this same problem earlier.

Thanks, thanks - you have been so very very much right!

That should be written in tutorial - definitely.

And maybe autor of RsrcEdit should change this (Calc of menu dimensions should do this better).

Thanks again - if you will be in Slovenia (by any chance)
you have at least one bear on my expenses ;-)))

Regards, Branko

case sensitivity

Posted by [Jim Deakin](#) on March 01, 1999 at 05:17:58:

Hi,
Is there any way to make Quartus word definitions case sensitive? I'm looking at the ABC music notation language, where a note's octave can be given by its case (ie G g g' are ascending by octaves), and first thoughts are that separate words for each note would be worth a try. If it's not possible, I suppose a mechanism of loading a line into a buffer then parsing it programmatically (is that a word?) would be the way to go.
Thanks,
Jim

Re: case sensitivity

Posted by [Neal Bridges](#) on March 01, 1999 at 09:36:29:

In Reply to: *case sensitivity* posted by Jim Deakin on March 01, 1999 at 05:17:58:

> Hi,
> Is there any way to make Quartus word definitions case sensitive? I'm looking
> at the ABC music notation language, where a note's octave can be given by its
> case (ie G g g' are ascending by octaves), and first thoughts are that
> separate
> words for each note would be worth a try. If it's not possible, I suppose a
> mechanism of loading a line into a buffer then parsing it programmatically (is
> that a word?) would be the way to go.

Quartus Forth's dictionary matching is case- and accent-insensitive. This was a design decision: requiring case-sensitivity where Graffiti is the primary mode of input seemed unusually cruel.

I recommend either parsing as you suggest, or alternatively using a slightly modified notation, for instance rather than G g g' use g^ g g' (or similar).

Neal

Re: case sensitivity

Posted by [Lou Solomon](#) on March 01, 1999 at 10:36:24:

In Reply to: *Re: case sensitivity* posted by Neal Bridges on March 01, 1999 at 09:36:29:

Regarding:

> Quartus Forth's dictionary matching is case- and accent-insensitive.
> This was a design decision: requiring case-sensitivity where Graffiti is the
> primary mode of input seemed unusually cruel.

IMHO, requiring case-sensitivity in ANY SITUATION (computer language, passwords, etc..) is cruel. I truly can't think of one situation where requiring case-sensitivity performs a valuable service which can't be simulated in other, easier ways.

Lou

PS: I would love to hear from anyone out there with a reasonable argument for case sensitivity.

Small forms?

Posted by [Michael Collas](#) on February 28, 1999 at 23:21:47:

How should I display a small pop-up form over the top of another form? When I use showform to display a small form over the top of another (full screen) form, the full screen form is erased. Is there a way to make this work using showform, or should I go direct to the form systraps and setup my own event handler?

Is the event handler that the showform word installs available for use by other forms that are not displayed with showform (so events are fed to ekey)? I tried some brief experiments using 'eventhander @ >abs' to get an event handler for a form, but I didn't persist when it failed because I'm not even sure it's the right approach.

Thanks,

Michael Collas

Re: Small forms?

Posted by [Neal Bridges](#) on February 28, 1999 at 23:36:16:

In Reply to: *Small forms?* posted by Michael Collas on February 28, 1999 at 23:21:47:

> How should I display a small pop-up form over the top of another form? When I
> use showform to display a small form over the top of another (full screen)
form,
> the full screen form is erased. Is there a way to make this work using
> showform, or should I go direct to the form systraps and setup my own event
> handler?

Have a look at *input.txt* in the File Area. It does exactly what you're
after. It also requires the resources in *qrsrc.zip*.

Neal

Re: Small forms?

Posted by [Michael Collas](#) on March 01, 1999 at 22:32:20:

In Reply to: *Re: Small forms?* posted by Neal Bridges on February 28, 1999 at 23:36:16:

> Have a look at *input.txt* in the File Area. It does exactly what
you're
> after. It also requires the resources in *qrsrc.zip*.

> Neal

Thanks - it was easy to adapt the source from *input.txt* into a
more generic word for showing popup dialogs. I'm still not clear on how the
events are making their way through to *ekey* though, because I'm not
explicitly installing an event handler for my popup form. Is an event handler
for the active form being installed by the first call to *ekey*, or is
something else going on?

Michael Collas

Re: Small forms?

Posted by [Neal Bridges](#) on March 02, 1999 at 02:04:22:

In Reply to: *Re: Small forms?* posted by Michael Collas on March 01, 1999 at 22:32:20:

>
> > Have a look at *input.txt* in the File Area. It does exactly what
> you're
> > after. It also requires the resources in *qrsrc.zip*.
> > Neal

> Thanks - it was easy to adapt the source from *input.txt* into a
> more generic word for showing popup dialogs. I'm still not clear on how the
> events are making their way through to *ekey* though, because I'm not
> explicitly installing an event handler for my popup form. Is an event handler
> for the active form being installed by the first call to *ekey*, or is
> something else going on?

Default handlers for all forms are assigned by Quartus Forth when the form is opened. One more detail you don't have to worry about.

Events all come from a single queue, and only one form can have focus at a time, so any events received by **ekey** always originate in the current form.

Neal

Variable initialization

Posted by [Steven Donahue](#) on February 28, 1999 at 15:03:37:

I have a quick question about Forth programming style with respect to variable initialization. I have notice in most of the examples I have seen that variables are declared and then followed immediatly by an in-line initialization. Example:

```
variable x;  
3 x !
```

Before I picked up on this, I was defining all of my variables at the top of the file, and I was using a word (*InitVariables*) to initialize all of the variables in my program. This *InitVariables* word is the first word issued from my main program. To me, this approach seems a little cleaner than some of the examples I have seen. All variables can be found in one place, and variable initialization happens in one place in the code instead of all over the place.

Again, being relatively new to Forth, I don't know the coding conventions. Given that my code will be used in my tutorial for others to learn from, I don't want to commit any Forth faux pas.

Thanks .

Steve

Re: Variable initialization

Posted by [Neal Bridges](#) on February 28, 1999 at 18:18:14:

In Reply to: *Variable initialization* posted by Steven Donahue on February 28, 1999 at 15:03:37:

> I have a quick question about Forth programming style with respect to variable
> initialization. I have notice in most of the examples I have seen that
> variables are declared and then followed immediatly by an in-line
> initialization. Example:

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> variable x;  
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> the
> file, and I was using a word (InitVariables) to initialize all of the
> variables
> in my program. This InitVariables word is the first word issued from my main
> program. To me, this approach seems a little cleaner than some of the
> examples
> I have seen. All variables can be found in one place, and variable
> initialization happens in one place in the code instead of all over the place.

I prefer to keep the default initialization near the variable, but all
initializations could just as easily be grouped together.

> Again, being relatively new to Forth, I don't know the coding conventions.
> Given that my code will be used in my tutorial for others to learn from, I
> don't
> want to commit any Forth faux pas.

It's customary, especially in memory-restricted environments like the Palm, to
initialize as much data as possible at compile-time, rather than at run-time, as
it makes the resulting stand-alone program smaller and faster.

One of Forth's strengths is the ability to have the compiler compute static data
(for instance, to calculate a table of values) at compile-time. One of my
upcoming programs initializes a table like this:

```
morse A .- B -... C -.-.
```

where **morse** is a word that creates table entries based on what follows on
the line.

However, if you have variable data that you need to reset during the course of a
program's run, it'd make more sense to have an init-variables word to handle

that for you.

I combine both strategies; each fits a specific purpose.

Neal

Re: Variable initialization

Posted by [Steven Donahue](#) on February 28, 1999 at 20:03:09:

In Reply to: *Re: Variable initialization* posted by Neal Bridges on February 28, 1999 at 18:18:14:

> It's customary, especially in memory-restricted environments like the Palm, to
> initialize as much data as possible at compile-time, rather than at run-time,
as
> it makes the resulting stand-alone program smaller and faster.

I hadn't really thought about it from that standpoint, but it makes perfect sense. The initialization word that I am using is only invoked once during program startup, so it would be more ideal to do this at compile time.

Thanks again for the feedback. I will pass this along in the tutorial...

Steve

New version status

Posted by [Neal Bridges](#) on February 27, 1999 at 20:57:17:

The next update is just about ready; testers are testing and it looks like I'll be rolling it out early tomorrow. There are a few new words, and a couple of bugfixes.

The update will go out automatically to registered users, while the new evaluation version will, as always, be available for download from the main Quartus Forth page.

Neal

Re: New version status

Posted by [Neal Bridges](#) on February 28, 1999 at 23:05:47:

In Reply to: *New version status* posted by Neal Bridges on February 27, 1999 at 20:57:17:

> The next update is just about ready; testers are testing and it looks like I'll
> be rolling it out early tomorrow. There are a few new words, and a couple of
> bugfixes.

> The update will go out automatically to registered users, while the new
> evaluation version will, as always, be available for download from the
> main Quartus Forth page.

Slight delay; tomorrow should see the new update. Thanks for your patience.

Neal

Re: New version status

Posted by [Neal Bridges](#) on March 02, 1999 at 02:07:08:

In Reply to: *Re: New version status* posted by Neal Bridges on February 28, 1999 at 23:05:47:

> > The next update is just about ready; testers are testing and it looks like
> I'll
> > be rolling it out early tomorrow. There are a few new words, and a couple of
> > bugfixes.

> > The update will go out automatically to registered users, while the new
> > evaluation version will, as always, be available for download from the
> > main Quartus Forth page.

> Slight delay; tomorrow should see the new update. Thanks for your patience.

The sharper among you will notice that I am sending this out slightly after the
aforementioned 'tomorrow'; however it won't be long now.

Something to look forward to: the disassembler is ready and will be
simultaneously with the new update.

Neal

Re: New version status

Posted by [Derek Bell](#) on March 01, 1999 at 18:26:46:

In Reply to: *Re: New version status* posted by Neal Bridges on February 28, 1999 at 23:05:47:

> Slight delay; tomorrow should see the new update. Thanks for your patience.

I'm seriously thinking of registering, but the machine I have email on is a UNIX box; could the registered version be uuencoded before email or do I have to use base64 or some other Windows-based encoding?

Unix vs. MIME (was Re: New version status)

Posted by [Carl Jacobsen](#) on March 02, 1999 at 02:34:50:

In Reply to: *Re: New version status* posted by Derek Bell on March 01, 1999 at 18:26:46:

> I'm seriously thinking of registering, but the machine I have email on is
> a UNIX box; could the registered version be uuencoded before email or do
> I have to use base64 or some other Windows-based encoding?

I'm a happily registered Quartus user, and I get all my email on a Unix box. There are a number of freely available email programs for Unix that deal with MIME attachments quite handily. I prefer one called [Pine](#). Some Unix system vendors and most Linux distributions ship with Pine already installed, so if you take a look around, you may find it's already on your box.

Between Pine, [Info-ZIP's zip and unzip programs](ftp://ftp.cdrom.com/pub/infozip/Info-ZIP.html), and the [pilot-unix](ftp://ryeham.ee.ryerson.ca/pub/PalmOS/pilot-link.0.9.0.tar.gz) kit, you can receive, unpack, and hotsync anything that Neal might send your way, all without ever leaving your Unix box (I do it all the time at the office).

The link below has lots of tip, if this interests you...

-- Carl

- [Using your Pilot with Unix](#)

Re: Unix vs. MIME (second try)

Posted by [Carl Jacobsen](#) on March 02, 1999 at 02:46:26:

In Reply to: *Unix vs. MIME (was Re: New version status)* posted by Carl Jacobsen on March 02, 1999 at 02:34:50:

(GACK! Aliens ate my URL's -- I moved them to the end.)

> I'm seriously thinking of registering, but the machine I have email on is
> a UNIX box; could the registered version be uuencoded before email or do
> I have to use base64 or some other Windows-based encoding?

I'm a happily registered Quartus user, and I get all my email on a Unix box. There are a number of freely available email programs for Unix that deal with MIME attachments quite handily. I prefer one called Pine. Some Unix system vendors and most Linux distributions ship with Pine already installed, so if you take a look around, you may find it's already on your box.

Between Pine, Info-ZIP's zip and unzip programs, and the pilot-unix kit, you can receive, unpack, and hotsync anything that Neal might send your way, all without ever leaving your Unix box (I do it all the time at the office).

Links:

[Pine](#),
[Info-ZIP](#),
[pilot-unix](#),

The link below has lots of tips, if this interests you...

-- Carl

- [Using your Pilot with Unix](#)

Re: Unix vs. MIME (second try)

Posted by [Derek Bell](#) on March 03, 1999 at 17:18:07:

In Reply to: *Re: Unix vs. MIME (second try)* posted by Carl Jacobsen on March 02, 1999 at 02:46:26:

> I'm a happily registered Quartus user, and I get all my email on a
> Unix box. There are a number of freely available email programs for
> Unix that deal with MIME attachments quite handily.

Thanks for the help! Maybe I'll have to change from using MH after all...

Re: New version status

Posted by [Neal Bridges](#) on March 01, 1999 at 20:16:40:

In Reply to: *Re: New version status* posted by Derek Bell on March 01, 1999 at 18:26:46:

> > Slight delay; tomorrow should see the new update. Thanks for your patience.
> I'm seriously thinking of registering, but the machine I have email on is a
> UNIX box; could the registered version be uuencoded before email or do I have
to
> use base64 or some other Windows-based encoding?

That's good to hear. I can encode attachments in various ways; if the first fails, I'll find a way that works. Delivering you the files won't be a problem.

Neal

Stack notation...

Posted by [Steve Gibson](#) on February 26, 1999 at 18:19:13:

Neal,

I've looked at your translation of the systrops and can't determine what some of the parameters are. I've read the SDK as well and it seems vague (to me) in some cases. I've also gone over the ANS Forth Standard, specifically the part about stack notation, and it doesn't seem to account for (define) stuff I'm seeing in stack diagrams.

Take CategoryCreateList for example (in my app I'm trying to display the list of memo categories in a list on a popup form):

```
Here's the Quartus translation of the SDK function -  
CategoryCreateList (resizeList? editingStrID. numUneditableCategories[>byte]  
showUneditables? showAll? currentCategory &listP. db. -- )
```

The parameters I'm confused about are as follows:

editingStrID. -- first, what does the "." mean? The SDK says it is a "resource type to string to edit categories". Confusing...

numUneditableCategories[>byte] -- I'm thinking I should put "1 >byte" for the "Unfiled" category...but not sure.

db. -- Again, the "." is throwing me.

Here's what what I've got so far (giving me a hard error with MemoryMgr.c):

needs memo-new, Fields, Forms, ids, etc...etc...

: show-popup

MemoCtgrYListForm PopupForm
OpenMemoDB

false DATA 1 true false 1 >byte listMemoCategory
FrmGetActiveForm FrmGetObjectIndex
FrmGetActiveForm FrmGetObjectPtr
MemoDBR CategoryCreateList

DATA true listMemoCategory
FrmGetActiveForm FrmGetObjectIndex
FrmGetActiveForm FrmGetObjectPtr
MemoDBR CategoryFreeList
CloseMemoDB

Yet again in need of your expertise...

-Steve

Re: Stack notation...

Posted by [Neal Bridges](#) on February 26, 1999 at 20:46:57:

In Reply to: *Stack notation...* posted by Steve Gibson on February 26, 1999 at 18:19:13:

> I've looked at your translation of the systraps and can't determine what some of
> the parameters are. I've read the SDK as well and it seems vague (to me) in
> some cases. I've also gone over the ANS Forth Standard, specifically the part
> about stack notation, and it doesn't seem to account for (define) stuff I'm
> seeing in stack diagrams.

> Take CategoryCreateList for example (in my app I'm trying to display the list of
> memo categories in a list on a popup form):

I wish I could take CategoryCreateList and fling it from the nearest bridge -- the Palm OS has a number of ugly calls, and this is certainly one. It takes no less than eight parameters, three of which are flags that control its behaviour (which means it has at least eight different possible behaviours).

> Here's the Quartus translation of the SDK function -
> CategoryCreateList (resizeList? editingStrID. numUneditableCategories[>byte]
> showUneditables? showAll? currentCategory &listP. db. --)

> The parameters I'm confused about are as follows:

> editingStrID. -- first, what does the "." mean? The SDK says it is a
> "resource
> type to string to edit categories". Confusing...

There's a legend in the manual detailing the notation. '.' indicates a double-cell (32-bit) value. I also have no idea what 'resource type to string

to edit categories' means -- I have to assume it's a typo nobody has caught. A working example (perhaps the 3Com Memo application source) would be of value here.

> numUneditableCategories[>byte] -- I'm thinking I should put "1 >byte" for the
> "Unfiled" category...but not sure.

> db. -- Again, the "." is throwing me.

See above. 'db.' is a 32-bit (double cell) DmOpenRef, the handle returned by opening a database.

> Here's what what I've got so far (giving me a hard error with MemoryMgr.c):
[code snipped] -- I'll have a look at this.

> Yet again in need of your expertise...

My expertise will be of limited value here. This is a problem caused by the intersection of poor SDK documentation and a ridiculously complex ROM function. I'll see if I can find sample code that uses this call successfully; I think that's the only answer.

Neal

Re: Stack notation...

Posted by [Steve Gibson](#) on February 27, 1999 at 04:51:19:

In Reply to: *Re: Stack notation...* posted by Neal Bridges on February 26, 1999 at 20:46:57:

> I wish I could take CategoryCreateList and fling it from the nearest bridge --
I'm glad it's not just me..."misery loves company"

> There's a legend in the manual detailing the notation. '.' indicates a
> double-cell (32-bit) value. I also have no idea what 'resource type to string
> to edit categories' means -- I have to assume it's a typo nobody has caught.

Ah, double-cell value. Thanks!

> A working example (perhaps the 3Com Memo application source) would be of value
> here.

Good idea...I'll see if that helps.

> > Here's what what I've got so far (giving me a hard error with MemoryMgr.c):
> [code snipped] -- I'll have a look at this.

> > Yet again in need of your expertise...

> My expertise will be of limited value here. This is a problem caused by the

> intersection of poor SDK documentation and a ridiculously complex ROM function.
> I'll see if I can find sample code that uses this call successfully; I think
> that's the only answer.

Don't knock yourself out. My main question was about the type of parameters being passed, which you answered. I'll dig into the Memo source and see if that clarifies anything.

Thanks again for the guidance!

-Steve

Re: Stack notation...

Posted by [Neal Bridges](#) on February 26, 1999 at 20:53:19:

In Reply to: *Re: Stack notation...* posted by Neal Bridges on February 26, 1999 at 20:46:57:

> numUneditableCategories[>byte] -- I'm thinking I should put "1 >byte" for the
> "Unfiled" category...but not sure.

Missed this one before. Yes, >BYTE is required to massage the value before it's passed to the OS.

Neal

Golf-App

Posted by [Zdenek Svaton](#) on February 26, 1999 at 04:58:57:

Hallo Neal

Can you tell me please, waht about your Golf-HCP App?

Thank's - Zdenek

Re: Golf-App

Posted by [Neal Bridges](#) on February 26, 1999 at 12:52:59:

In Reply to: *Golf-App* posted by Zdenek Svaton on February 26, 1999 at 04:58:57:

> Hallo Neal
> Can you tell me please, waht about your Golf-HCP App?
> Thank's - Zdenek

I believe you're thinking of Daryl's Golf Handicap program; in fact I see he's followed up already.

Neal

Re: Golf-App

Posted by [Daryl Lee](#) on February 26, 1999 at 10:12:42:

In Reply to: *Golf-App* posted by Zdenek Svaton on February 26, 1999 at 04:58:57:

> Hallo Neal
> Can you tell me please, waht about your Golf-HCP App?
> Thank's - Zdenek

Zdenek, I hope this interruption isn't too rude, but I have developed a very simple golf handicap application. I have decided not to pursue it as a supported application, because I am satisfied with the way it works for me, and I don't have time to invest in making it "bullet-proof" enough for supportability. I'd be glad to send all the source to anyone who wants to pursue it. The Creator ID is properly registered with 3COM.

It calculates a golf handicap according to the USGA formula, with a few exceptions: nine-hole rounds are not supported and tournament score adjustments are not supported. The system supports only one player, so it's not useful for, say, an office league.

I hope this helps. Let me know if you want the source.

Daryl

Delphi & Forth ?

Posted by [Carlo](#) on February 25, 1999 at 19:11:41:

I'm searching a solution for use Forth Language from delphi application

Re: Delphi & Forth ?

Posted by [Neal Bridges](#) on February 25, 1999 at 20:09:19:

In Reply to: *Delphi & Forth ?* posted by Carlo on February 25, 1999 at 19:11:41:

> I'm searching a solution for use Forth Language from delphi application

Carlo, I'm not sure what you're asking. Can you provide further details?

Neal

Trig functions, mathlib/FLOAT-EXT

Posted by [A. Pena](#) on February 25, 1999 at 08:43:35:

Where may I find some info about de use the mathlib from quartus?

I need some trig. functions and I tried to use some code posted here, but after many "resets" I fell unable to find the answer myself.

Another option is to try to build a FLOAT-EXT in forth.I'm a 'newbie' in forth, and I don't fell able to complete the task alone, but I volunteer for any joint effort.

Re: Trig functions, mathlib/FLOAT-EXT

Posted by [Neal Bridges](#) on February 25, 1999 at 10:24:37:

In Reply to: *Trig functions, mathlib/FLOAT-EXT* posted by A. Pena on February 25, 1999 at 08:43:35:

> Where may I find some info about de use the mathlib from quartus?

> I need some trig. functions and I tried to use some code posted here, but after

> many "resets" I fell unable to find the answer myself.

> Another option is to try to build a FLOAT-EXT in forth.I'm a 'newbie' in

forth,
> and I don't feel able to complete the task alone, but I volunteer for any
joint
> effort.

If it's floating-point trig you're after, I'm writing the appropriate words into
the kernel. They'll be in the next update (after the one that's about to come
out).

In the meantime, have a look at *trig.txt* -- it provides integer trig to
four decimal places.

Neal

Re: Trig functions, mathlib/FLOAT-EXT

Posted by [Mike Will](#) on February 25, 1999 at 12:22:32:

In Reply to: *Re: Trig functions, mathlib/FLOAT-EXT* posted by Neal Bridges on
February 25, 1999 at 10:24:37:

> If it's floating-point trig you're after, I'm writing the appropriate words
into
> the kernel. They'll be in the next update (after the one that's about to
come
> out).

> In the meantime, have a look at *trig.txt* -- it provides integer trig
to
> four decimal places.

> Neal

I didn't post these words before because I knew Neal was building float math
into the kernel. But, if you need something now, you're welcome to them.

\ FTRIG 01.07.99 MRW

needs core-ext

\ there's a bit of overlap here with
\ FEL library
\ I halted work before FTAN and ARC
\ were included

```
180E0 FCONSTANT F180
3.1415927E0 FCONSTANT PI
1.5707963E0 FCONSTANT PI/2
0.3183099E0 FCONSTANT 1/PI
```

```
: FSIGN ( F: r -- F: |r| -- flag [0,1] )
  FDUP f0< ABS FABS ;
VARIABLE SGN
```

```
: F1/X ( F: r -- F: 1/r ) 1E0 FSWAP F/ ;
: DEG>RAD ( F: r -- F: r ) F180 F/ PI F* ;
: RAD>DEG ( F: r -- F: r ) F180 F* PI F/ ;

: (SIN) FDUP FDUP F* FDUP \ primitive
  0.23900002E-07 F*
  0.27526002E-05 F+ FOVER F*
-0.19840901E-03 F+ FOVER F*
  0.83333319E-02 F+ FOVER F*
-0.16666667E0 F+ F* 1E0 F+ F* ;
: SINFN ( F: r -- F: sinr ) \ in radians
  2.05883863E5 FOVER F<
  ABORT" trigonometric overflow"
  FDUP 1/PI F*
  FLOOR FDUP F>D D>S >R
  PI F* F- PI/2 FOVER F<
  IF PI F- R> 1+ >R THEN
  (SIN) SGN @ R> 1 AND IF NEGATE
  THEN 0< IF FNEGATE THEN ;
: FSIN ( F: r -- F: sinr ) DEG>RAD FSIGN
  IF -1 ELSE 1 THEN SGN ! SINFN ;
: FCOS ( F: r -- F: cosr ) DEG>RAD PI/2
  F+ FSIGN IF -1 ELSE 1 THEN SGN !
  SINFN ;
```

```
\ tests
cr
90e0 deg>rad fs. cr
3e0 rad>deg fs. cr
45e0 fsin fs. cr
270e0 fsin fs. cr
45e0 fcos fs. cr
90e0 fcos fs. cr
```

Mike

Re: Trig functions, mathlib/FLOAT-EXT

Posted by [Neal Bridges](#) on February 25, 1999 at 23:06:14:

In Reply to: *Re: Trig functions, mathlib/FLOAT-EXT* posted by Mike Will on February 25, 1999 at 12:22:32:

> I didn't post these words before because I knew Neal was building float math
> into the kernel. But, if you need something now, you're welcome to them.

[floating-point trig code snipped]

Thanks, Mike! Here's something less ambitious that might be of use at some point:

```
\ ftrig 99.2.25 4:35 pm NAB  
\ Provides floating-point sin & cos,  
\ to 4 decimal places, accurate to the  
\ nearest degree.
```

needs trig

```
: sinf  
  fdup fround  
  f>d drop sin s>d d>f 1e4 f/ ;
```

```
: cosf  
  fdup fround  
  f>d drop cos s>d d>f 1e4 f/ ;
```

Neal

Palm IIIx and V compatibility

Posted by [Neal Bridges](#) on February 24, 1999 at 19:36:54:

Hi folks. As regards the new models of the Palm now available, thought I'd let you know I've been successfully testing Quartus Forth under PalmOS 3.1 (the version in the new models) for a couple of months now via the Palm OS Emulator.

I don't have an actual Palm IIIx or V device in the test lab yet. I don't anticipate any compatibility issues, but experience speaks loudest -- let me know how it goes!

Neal

Re: Palm IIIx and V compatibility

Posted by [Steven Donahue](#) on February 24, 1999 at 22:24:19:

In Reply to: *Palm IIIx and V compatibility* posted by Neal Bridges on February 24, 1999 at 19:36:54:

Well, I may be your first test. I drove off from the gas pumps today with my Pilot on the roof of my Jeep. Doh!

Oh, well. Nothing like an excuse to get a newer, sexier, gadget! Needless to say, my wife is not pleased :-)

So, any opinions as to which one I should get? The Palm IIIx has lots of memory, but the Palm V looks soooo cool. Decisions, decisions...

Steve

Results and other amusing things

Posted by [Kip DeGraaf](#) on February 24, 1999 at 22:53:03:

In Reply to: *Re: Palm IIIx and V compatibility* posted by Steven Donahue on February 24, 1999 at 22:24:19:

I bought both the IIIx and the V, Quartus runs fine on both.

I have not run extensive tests, but I have compiled a few programs on each and everything works like it did on my Palm III.

> So, any opinions as to which one I should get? The Palm IIIx has lots of
> memory, but the Palm V looks soooo cool. Decisions, decisions...

If I had to buy only one, I suppose it would be the Palm V. The IIIx has 2 megs of extra memory, which would only be filled up with extra AvantGo downloaded web pages and more Quartus related files for me. It also has the same upgraded screen that the Palm V has.

I would go with just the Palm V if I had to because of the size factor and the Lithium Ion battery. It took only 3 hours to do the initial charge and even after using it with the backlight on for several hours over the last 3 days, the battery level has barely dropped. If you were to leave it in the charger/cradle at least once a week for overnight, you should never run out of juice.

PS, why did I buy both? Because I did want one unit with 4 megs of memory and I knew someone who would buy my Palm III for \$250, which made the Palm IIIx an easier to swallow purchase.

Re: Results and other amusing things

Posted by [Allen Chen](#) on February 25, 1999 at 14:56:19:

In Reply to: *Results and other amusing things* posted by Kip DeGraaf on February 24, 1999 at 22:53:03:

Palm V is very cool, but its non-expandability is a big issue. I suppose it's aimed for the average "consumers" who don't want to worry about batteries and who really don't care about the memory. I would probably go for IIIx myself. It is virtually identical *functionally* to Palm V (except for the on-screen contrast adjustment), but it is expandable (TRG already has a 8meg board out for

IIIx) for ~\$150 US.

I don't really care about the size factor, I mean, c'mon, how small do you want the thing to be? Yes it looks better than Palm IIIx, but nothing looks cool compare to finger-operated-kiloquad-processing-subspace-connected-indestructable PADD's, IMHO. ;-)

A word of caution, however. I've asked people from TRG, and they told me that the FlashbuilderIII will not work for Palm IIIx and V, nor will registered FlashbuilderIII users get a free upgrade to FlashPro (because it's a "completely different program"). FlashPro is not due out until late March, so if you are a heavy Flash memory user, you probably want to wait a bit if you have your eyes set on the 2-meg-only-non-expandable Palm V.

-Allen "eagerly awaiting Palm IIIx to appear in Toronto" Chen

Palm IIIx in Toronto

Posted by [Neal Bridges](#) on February 25, 1999 at 16:03:00:

In Reply to: *Re: Results and other amusing things* posted by Allen Chen on February 25, 1999 at 14:56:19:

> -Allen "eagerly awaiting Palm IIIx to appear in Toronto" Chen

It's available; saw one in Commerce Court yesterday. \$550 CDN, as I recall. The screen is very nice indeed.

Neal

Re: Palm IIIx in Toronto

Posted by [Mike Will](#) on February 25, 1999 at 16:30:57:

In Reply to: *Palm IIIx in Toronto* posted by Neal Bridges on February 25, 1999 at 16:03:00:

> > -Allen "eagerly awaiting Palm IIIx to appear in Toronto" Chen

> It's available; saw one in Commerce Court yesterday. \$550 CDN, as I recall.

> The screen is very nice indeed.

Yep, that's the best price I've seen too. Handheld Interfaces on King Street is selling the Palm IIIx for \$550 and the Palm V for \$680 and will ship for free. (I've never dealt with them, myself).

Mike

Re: Palm IIIx in Toronto

Posted by [Allen Chen](#) on February 25, 1999 at 17:03:37:

In Reply to: *Re: Palm IIIx in Toronto* posted by Mike Will on February 25, 1999 at 16:30:57:

> > > -Allen "eagerly awaiting Palm IIIx to appear in Toronto" Chen
> > It's available; saw one in Commerce Court yesterday. \$550 CDN, as I recall.
> > The screen is very nice indeed.
> Yep, that's the best price I've seen too. Handheld Interfaces on King Street is
> selling the Palm IIIx for \$550 and the Palm V for \$680 and will ship for free.
> (I've never dealt with them, myself).
> Mike

Cool. I checked several places but couldn't find any. Where is Commerce Court and Handheld Interfaces?

Allen

Re: Palm IIIx in Toronto

Posted by [Neal Bridges](#) on February 25, 1999 at 17:08:54:

In Reply to: *Re: Palm IIIx in Toronto* posted by Allen Chen on February 25, 1999 at 17:03:37:

> Cool. I checked several places but couldn't find any. Where is Commerce Court
> and Handheld Interfaces?

Commerce Court is King & Bay, underground.

Neal

Re: Palm IIIx in Toronto

Posted by [Mike Will](#) on February 25, 1999 at 19:05:09:

In Reply to: *Re: Palm IIIx in Toronto* posted by Neal Bridges on February 25, 1999 at 17:08:54:

> > Cool. I checked several places but couldn't find any. Where is Commerce
> Court
> > and Handheld Interfaces?

> Commerce Court is King & Bay, underground.

> Neal

Handheld Interfaces is King & Bay, above ground.
look at: <http://www.handheldinterfaces.com>

Mike

Re: Palm IIIx in Toronto

Posted by [Neal Bridges](#) on February 25, 1999 at 21:42:08:

In Reply to: *Re: Palm IIIx in Toronto* posted by Mike Will on February 25, 1999 at 19:05:09:

> Handheld Interfaces is King & Bay, above ground.
> look at: <http://www.handheldinterfaces.com>

The address listed on their web page is 781 King West, which is a fair ways west of Bay St.

Neal

Workspace?

Posted by [Tim Russell](#) on February 24, 1999 at 17:35:02:

Neil,

I just got a Palm IIIx (awesome screen and LOUD sounds, love it!) and was reinstalling stuff from the old Pro/III. Once I got done, I ran Ram Hog and noticed a "Workspace" resource taking up 50k. I looked at it with RsrcEdit, and it looks, from the creator and the content, to be Quartus' workspace.

Firstly, am I wrong here, and secondly, is there a reason that this stays

around when Quartus isn't running? I didn't think that the words that I create interactively get saved when Quartus exits, do they?

Guess I'm mostly curious - with 4M of ram it's not as big a deal!

Re: Workspace?

Posted by [Neal Bridges](#) on February 24, 1999 at 19:20:26:

In Reply to: *Workspace?* posted by Tim Russell on February 24, 1999 at 17:35:02:

> I just got a Palm IIIx (awesome screen and LOUD sounds, love it!) and was
> reinstalling stuff from the old Pro/III. Once I got done, I ran Ram Hog and
> noticed a "Workspace" resource taking up 50k. I looked at it with RsrcEdit,
> and it looks, from the creator and the content, to be Quartus' workspace.

> Firstly, am I wrong here, and secondly, is there a reason that this stays
> around when Quartus isn't running? I didn't think that the words that I
create

> interactively get saved when Quartus exits, do they?

> Guess I'm mostly curious - with 4M of ram it's not as big a deal!

It hangs around as a placeholder. If it were deleted each time Quartus Forth exited, you'd think you had more storage available than you really do, and the next time you ran Quartus Forth you might well not have sufficient storage space to create the workspace.

Neal

Re: Workspace?

Posted by [Tim Russell](#) on February 26, 1999 at 12:03:16:

In Reply to: *Re: Workspace?* posted by Neal Bridges on February 24, 1999 at 19:20:26:

> It hangs around as a placeholder. If it were deleted each time Quartus Forth
> exited, you'd think you had more storage available than you really do, and
the

> next time you ran Quartus Forth you might well not have sufficient storage
space

> to create the workspace.

Hmm - well, personally, I'd rather just get told that Quartus can't start because there isn't room for the workspace than have 50K taken up all the time for basically nothing... There may be times when I need the space for something else temporary and am not worried about whether or not Quartus will

run. Although I have been having fun with it!

Is it at least a movable block, I hope? At the very least I'd hate to think that it sits out there getting in the way of memory management...

Re: Workspace?

Posted by [Neal Bridges](#) on February 26, 1999 at 12:50:24:

In Reply to: *Re: Workspace?* posted by Tim Russell on February 26, 1999 at 12:03:16:

> Hmm - well, personally, I'd rather just get told that Quartus can't start
> because there isn't room for the workspace than have 50K taken up all the time
> for basically nothing... There may be times when I need the space for
> something else temporary and am not worried about whether or not Quartus will
> run. Although I have been having fun with it!

> Is it at least a movable block, I hope? At the very least I'd hate to
> think that it sits out there getting in the way of memory management...

It's in storage space; fully moveable. Keeping it in memory also speeds the re-starting of Quartus Forth, as it doesn't have to shuffle storage space around to get the space it needs. I have a small app that does nothing but delete the workspace; I'll scare it up and make it available in the File Area by and by.

Neal

Searching archived messages

Posted by [Neal Bridges](#) on February 24, 1999 at 17:08:18:

I recently moved the archive message files to another server; my search engine now doesn't pick them up. There's no super-quick solution -- I'll probably index them and put the index on the search engine, by and by. In the meantime, you might want to download copies of the archives locally for easy searching and browsing.

Neal

Re: Searching archived messages - Update

Posted by [Neal Bridges](#) on February 25, 1999 at 00:08:45:

In Reply to: *Searching archived messages* posted by Neal Bridges on February 24, 1999 at 17:08:18:

> I recently moved the archive message files to another server; my search engine
> now doesn't pick them up. There's no super-quick solution -- I'll probably
> index them and put the index on the search engine, by and by. In the
meantime,
> you might want to download copies of the archives locally for easy searching
and
> browsing.

Update -- the Search engine has been updated with a link to allow searching of
the Forum message archives. Thanks to Kip DeGraaf for his assistance!

Neal

field>string on an empty field...

Posted by [Steve Gibson](#) on February 24, 1999 at 12:00:53:

Neal,

When passing an empty field via field>string to my fvariable, I would get a
fatal. I thought maybe it doesn't like trying to convert "nothing" into a
float.

So now I'm trying to handle this passing of an empty field to the field>string
word in a sane manner. It seems that the field>string word should put nothing
into the string buffer and then return a "0" (length) to the stack. However,
when I try to catch this with a "0 = if" and pass a "0e" to my fvariable instead
of the empty string buffer, I get a very bad crash (screen goes crazy and
requires hard reset). Am I approaching this from the right direction, or is
there a better way to test for an empty field before trying to feed it to
field>string?

Here's a code snippet:

```
strbuff LFskidField field>string dup >r  
0 = if  
0e lfskid f! >r drop  
then  
strbuff r> >float lfskid f!
```

Also, I know you are working on REPRESENT and F. for the next release. Is there
a workaround method of getting a value from a fvariable and writing it to a
field on my form?

Thanks ,

-Steve

Re: field>string on an empty field...

Posted by [Allen Chen](#) on February 24, 1999 at 13:09:12:

In Reply to: *field>string on an empty field...* posted by Steve Gibson on February 24, 1999 at 12:00:53:

```
> strbuff LFskidField field>string dup >r
> 0 = if
> 0e lfskid f! >r drop
^^^^^^
```

Excuse me for butting in, but something looks fishy here. If you intend to push the length **again** into the return stack, there should be nothing left on the data stack for you to drop.

```
> then
> strbuff r> >float lfskid f!
```

And here too. There should be another piece of data on the return stack (you've pushed it in twice), if you don't take care of that, it may cause some nasty crash.

-Allen

Re: field>string on an empty field...

Posted by [Steve Gibson](#) on February 24, 1999 at 13:21:02:

In Reply to: *Re: field>string on an empty field...* posted by Allen Chen on February 24, 1999 at 13:09:12:

```
> > strbuff LFskidField field>string dup >r
> > 0 = if
> > 0e lfskid f! >r drop
> ^^^^^^^
```

> Excuse me for butting in, but something looks fishy here. If you intend to push the length **again** into the return stack, there should be nothing left on the data stack for you to drop.

Ugh!!! That was supposed to be "r> drop"...thanks Allen!

Even catching that error, I'm still getting a (less severe) "fatal" with the code:

```
strbuff LFskidField field>string dup >r \ save len to r-stack if needed
0 = if \ test if len is equal to 0
0e lfskid f! r> drop \ I'm just cleaning up the r-stack with the r> drop
then
strbuff r> >float lfskid f!

-Steve
```

Re: field>string on an empty field...

Posted by [Steve Gibson](#) on February 24, 1999 at 13:26:40:

In Reply to: *Re: field>string on an empty field...* posted by Steve Gibson on February 24, 1999 at 13:21:02:

```
> > > strbuff LFskidField field>string dup >r
> > > 0 = if
> > > 0e lfskid f! >r drop
> > ^^^^^^^
> > Excuse me for butting in, but something looks fishy here. If you intend to
> > push
> > the length *again* into the return stack, there should be nothing left on
the
> > data stack for you to drop.

> Ugh!!! That was supposed to be "r> drop"...thanks Allen!

> Even catching that error, I'm still getting a (less severe) "fatal" with the
> code:

> strbuff LFskidField field>string dup >r \ save len to r-stack if needed
> 0 = if \ test if len is equal to 0
> 0e lfskid f! r> drop \ I'm just cleaning up the r-stack with the r> drop
> then
> strbuff r> >float lfskid f!

> -Steve
```

Hmmmm...I think I see the problem. That last line is executing regardless of whether the length is 0 or not. Guess I should have looked at it longer before bothering you guys! Sorry...

I guess the question still stands about any possible workaround for getting a fvariable into a field on my form.

-Steve

Re: field>string on an empty field...

Posted by [Neal Bridges](#) on February 24, 1999 at 15:12:19:

In Reply to: *Re: field>string on an empty field...* posted by Steve Gibson on February 24, 1999 at 13:26:40:

> I guess the question still stands about any possible workaround for getting a
> fvariable into a field on my form.

If you can wait another day or so, you'll have REPRESENT, (F.) and F.

Neal

Re: field>string on an empty field...

Posted by [Steve Gibson](#) on February 24, 1999 at 15:39:24:

In Reply to: *Re: field>string on an empty field...* posted by Neal Bridges on February 24, 1999 at 15:12:19:

> > I guess the question still stands about any possible workaround for getting a
> > fvariable into a field on my form.

> If you can wait another day or so, you'll have REPRESENT, (F.) and F.

Ah! Yes, I most certainly can wait! Thanks!

-Steve

Division by Zero

Posted by [Ivan Strougatski](#) on February 24, 1999 at 10:02:08:

I am new to Forth, but is it normal that division by zero would lead to Pilot reset, or is it problem of my Pilot/OS? (I am using Pilot 5000)

Re: Division by Zero

Posted by [Neal Bridges](#) on February 24, 1999 at 10:21:44:

In Reply to: *Division by Zero* posted by Ivan Strougatski on February 24, 1999 at 10:02:08:

> I am new to Forth, but is it normal that division by zero would lead to
> Pilot reset, or is it problem of my Pilot/OS? (I am using Pilot 5000)

The PalmOS itself traps divisions-by-zero and causes a "Fatal Exception" dialog, leading to a soft reset (no data loss). If you wish to trap division-by-zero, one option is to use *safe.txt*.

Neal

Struct revisited

Posted by [Mike Will](#) on February 23, 1999 at 17:10:53:

I'd like to implement character pointers within a Struct to allow variable-length strings. I have a rough idea how to do this. Any caveats before I start that might save me from taking a really wrong turn?

Thanks.

Mike

PS, I tried a network with a DNS today, and I still couldn't get the Emulator to NetSync (or an actual PalmIII either). Just endless PPP timeouts.

Re: Struct revisited

Posted by [Neal Bridges](#) on February 23, 1999 at 19:05:57:

In Reply to: *Struct revisited* posted by Mike Will on February 23, 1999 at 17:10:53:

> I'd like to implement character pointers within a Struct to allow variable-
> length strings. I have a rough idea how to do this. Any caveats before I start
> that might save me from taking a really wrong turn?

> Thanks.

> Mike

Should be simple enough; one cell will hold a pointer. If you also want to track the length within the struct, another cell will be required.

> PS, I tried a network with a DNS today, and I still couldn't get the Emulator
> to NetSync (or an actual PalmIII either). Just endless PPP timeouts.

Haven't had the time to try this yet myself. I'll let you know how it goes.

Neal

Re: Struct revisited

Posted by [Daryl Lee](#) on February 24, 1999 at 11:23:15:

In Reply to: *Re: Struct revisited* posted by Neal Bridges on February 23, 1999 at 19:05:57:

> > I'd like to implement character pointers within a Struct to allow variable-
> > length strings. I have a rough idea how to do this. Any caveats before I
start
> > that might save me from taking a really wrong turn?
> > Thanks.
> > Mike

> Should be simple enough; one cell will hold a pointer. If you also want to
> track the length within the struct, another cell will be required.

Have a little foresight, though, because if you intend to use any PalmOS string
functions on that string, the pointer will need to be double. (Sound like
another lesson learned the hard way?)

Daryl

Re: Struct revisited

Posted by [Neal Bridges](#) on February 24, 1999 at 11:29:06:

In Reply to: *Re: Struct revisited* posted by Daryl Lee on February 24, 1999 at 11:23:15:

> > > I'd like to implement character pointers within a Struct to allow
variable-
> > > length strings. I have a rough idea how to do this. Any caveats before I
> start
> > > that might save me from taking a really wrong turn?
> > > Thanks.
> > > Mike

> > Should be simple enough; one cell will hold a pointer. If you also want to
> > track the length within the struct, another cell will be required.

> Have a little foresight, though, because if you intend to use any PalmOS
string
> functions on that string, the pointer will need to be double. (Sound like

> another lesson learned the hard way?)

Actually I recommend storing the string address as a single cell, promoting it to 32-bits when passing the address to a ROM function. It'll be easier to manage all around.

Neal

Re: Struct revisited

Posted by [Mike Will](#) on February 25, 1999 at 16:14:08:

In Reply to: *Re: Struct revisited* posted by Neal Bridges on February 24, 1999 at 11:29:06:

> Actually I recommend storing the string address as a single cell, promoting it
> to 32-bits when passing the address to a ROM function. It'll be easier to
> manage all around.

> Neal

This is excellent advice, and has lead to a clean design that works well. One of my hard-earned rules-of-thumb for development is to isolate the interaction between Quartus and the OS into as few words as possible. It's always the middle ground between the two that causes trouble. The Palm OS is a universe unto itself, and not a very friendly one at that. You're much better off living in the Quartus universe, as long as you know where the few key wormholes are.

Thanks Neal.

Re: Struct revisited

Posted by [Mike Will](#) on February 24, 1999 at 12:49:59:

In Reply to: *Re: Struct revisited* posted by Neal Bridges on February 24, 1999 at 11:29:06:

Thanks Daryl and Neal.

I've got a rough version hacked together. I'm using the Pack and Unpack methodology in Neil Rhodes' Developer's Guide and it seems to be working. I'm pleasantly surprised how smoothly the C code in this book translates into Quartus. I'm just struggling a bit right now with sizeof.

Mike

Re: Struct revisited

Posted by [Neal Bridges](#) on February 24, 1999 at 20:22:25:

In Reply to: *Re: Struct revisited* posted by Mike Will on February 24, 1999 at 12:49:59:

> Thanks Daryl and Neal.
> I've got a rough version hacked together. I'm using the Pack and Unpack
> methodology in Neil Rhodes' Developer's Guide and it seems to be working. I'm
> pleasantly surprised how smoothly the C code in this book translates into
> Quartus. I'm just struggling a bit right now with sizeof.

Anything I can help with?

Neal

Re: Struct revisited

Posted by [Mike Will](#) on February 24, 1999 at 21:23:43:

In Reply to: *Re: Struct revisited* posted by Neal Bridges on February 24, 1999 at 20:22:25:

> Anything I can help with?

> Neal

Well, since you're generous enough to offer, maybe you could take a quick peek at a modified version of Struct:

```
\ modified struct
needs toolkit
0 constant struct
: field ( n "fieldname" -- )
  over create , ( store offset)
  dup , ( store size)
  + ( adjust offset)
  does> ( o -- o+n) @ + ;
: end-struct ( s "structname" --)
  create , ( store size)
  does> ( "name" --) @ create 0allot ;
: sizeof ( "structname" -- s)
  ' >body @ ;
: fieldsize ( "field" -- s )
```

```
' >body 1 cells + @ ;
```

```
eg.  struct
      1 cells one
      2 cells two
      3 cells three
      end-struct simple:

fieldsize three . ---> 6
```

There are times when you need the length of a field in addition to its offset within a struct (see p 159 of the Developer's Guide for some sample code). So, I've included this information in STRUCT. Note that this extra info is only stored in the struct template, not in actual structured storage instantiated later. Just to save me the time of digging through my old code to remember, how can I make SIZEOF and FIELDSIZE work inside colon definitions too? (I think it's ['] or something)

Also, I notice that in the Developer's Guide, structs are declared and used without ever being instantiated. They server only to dice up in-place records. That's a neat trick. Could I do that in Quartus?

Thanks a pile
Mike

Re: Struct revisited

Posted by [Neal Bridges](#) on February 24, 1999 at 21:56:09:

In Reply to: *Re: Struct revisited* posted by Mike Will on February 24, 1999 at 21:23:43:

> Well, since you're generous enough to offer, maybe you could take a quick peek
> at a modified version of Struct:

[code snipped]

> There are times when you need the length of a field in addition to its offset
> within a struct (see p 159 of the Developer's Guide for some sample code). So,
> I've included this information in STRUCT. Note that this extra info is only
> stored in the struct template, not in actual structured storage instantiated

Looks useful!

> later. Just to save me the time of digging through my old code to remember,
> how
> can I make SIZEOF and FIELDSIZE work inside colon definitions too? (I think

> it's ['] or something)

You do this:

```
: myword [ sizeof mystruct ] literal ;
```

The other way would be to make SIZEOF and FIELD SIZE "state-smart"; that would be overkill. The syntax I just gave works perfectly without any changes to your code.

> Also, I notice that in the Developer's Guide, structs are declared and used
> without ever being instantiated. They server only to dice up in-place records.
> That's a neat trick. Could I do that in Quartus?

Sure, in just the same way you would do it in C. The FIELD values are simply offsets from a starting address.

Neal

helpful debugging tip

Posted by [E. Ross Helton](#) on February 21, 1999 at 22:32:54:

Hi Neal;

Just thought I would leave a hint for help in programming and debugging which I use.

To check out a program I use the program 'Safe'. You put it in the beginning program using 'needs safe'.

Of course, you would need to eliminate that line when you get ready to finish your program. Also there are other files which I also use to aid in detecting things. Each time I finish I have to eliminate all of these. What I have discovered is that I can put all of these in a start file and which isn't really a part of my actual program. Since this is a short file I usually just have to change a couple of things to use it with another program. Below is an example of what I do.

```
=====
```

```
\ testrchill
```

```
needs safe
```

```
needs rchill
```

```
=====
```

It is a very simple file but it works very powerfully. If need I can add other lines. The name of the file indicates that I am testing a program called 'rchill' The 'needs safe' gets the 'safe' program involved and the 'needs rchill' starts the actual program.

Make it good day!

Ross

Re: helpful debugging tip

Posted by [Neal Bridges](#) on February 21, 1999 at 23:39:13:

In Reply to: *helpful debugging tip* posted by E. Ross Helton on February 21, 1999 at 22:32:54:

> Hi Neal;

> Just thought I would leave a hint for help in programming and debugging which
> I use.

[good tip snipped]

I use the same technique; it never occurred to me to mention it. I also have a separate 'make' file for stand-alone generation of each program.

Thanks for posting the tip!

Neal

Re: helpful debugging tip

Posted by [E. Ross Helton](#) on February 22, 1999 at 01:12:22:

In Reply to: *Re: helpful debugging tip* posted by Neal Bridges on February 21, 1999 at 23:39:13:

> > Hi Neal;

> > Just thought I would leave a hint for help in programming and debugging which
> > I use.

> > I use.

> [good tip snipped]

> I use the same technique; it never occurred to me to mention it. I also
> have a separate 'make' file for stand-alone generation of each program.

> Thanks for posting the tip!

> Neal

Hi Neal;

I know that it is a small thing but it really did help me. Sometimes we all forget that all the time it takes a bunch of the small things to make the big ones happen!

Make it a good day!

Ross

calculating fractions

Posted by [E. Ross Helton](#) on February 20, 1999 at 14:58:35:

Hi

I have looked several places and I haven't found the answer to my problem. I am writing a program to convert some numbers. As long as I use whole numbers there isn't a problem, but if I go need to use a fraction everything gets goofy.

the calculation I would like to make is $1.609344 /$ or $1.609344 *$

for example: $30 \ 1.609344 /$ the problem is that I get -1210 not 18.641

How do I address this operation?

Make it a good day!

Ross

Re: calculating fractions

Posted by [Neal Bridges](#) on February 20, 1999 at 15:04:26:

In Reply to: *calculating fractions* posted by E. Ross Helton on February 20, 1999 at 14:58:35:

> Hi

> I have looked several places and I haven't found the answer to my problem. I am

> writing a program to convert some numbers. As long as I use whole numbers there

> isn't a problem, but if I go need to use a fraction everything gets goofy.

> the calculation I would like to make is $1.609344 /$ or $1.609344 *$

> for example: $30 \ 1.609344 /$ the problem is that I get -1210 not 18.641

> How do I address this operation?

Quartus Forth works in integers by default. For what you're trying to do, the `*/` operator is ideal:

```
30 1000 1609 */
```

Returns 18.

Floating point is also available:

30e0 1.609344e0 f/ fs.

Neal

Re: calculating fractions

Posted by [E. Ross Helton](#) on February 20, 1999 at 15:56:06:

In Reply to: *Re: calculating fractions* posted by Neal Bridges on February 20, 1999 at 15:04:26:

> > Hi

> > I have looked several places and I haven't found the answer to my problem. I am writing a program to convert some numbers. As long as I use whole numbers there isn't a problem, but if I go need to use a fraction everything gets goofy. the calculation I would like to make is 1.609344 / or 1.609344 * for example: 30 1.609344 / the problem is that I get -1210 not 18.641 How do I address this operation?

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> 30 1000 1609 */

> Returns 18.

> Floating point is also available:

> 30e0 1.609344e0 f/ fs.

> Neal

Hi Neal;

after seeing the formula you gave it makes sense to me and it does work I just tried it. However, the question is where in all of the Forth material and Quartus material would I have found this answer if I hadn't had this forum to ask it in? Also I would like to have access to resources when I can't or don't have time to get online to ask questions. I looked through your manual and I didn't see such a situation addressed, and of the several manuals and documents which I have downloaded and or printed on on Forth, I couldn't get anywhere close to the answer.

Most of the answers I have sought have been answered by your manual and 'Inch-4th' and 'Beginning Forth'

Make it a good day!

Ross

Re: calculating fractions

Posted by [William Tanksley](#) on February 22, 1999 at 21:26:14:

In Reply to: *Re: calculating fractions* posted by E. Ross Helton on February 20, 1999 at 15:56:06:

> > > Hi

> > > writing a program to convert some numbers. As long as I use whole numbers
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> > > isn't a problem, but if I go need to use a fraction everything gets goofy.
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> > > for example: 30 1.609344 /

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> > the */ operator is ideal:
> > 30 1000 1609 */
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> tried it. However, the question is where in all of the Forth material and
> Quartus material would I have found this answer if I hadn't had this forum to
> ask it in? Also I would like to have access to resources when I can't or

This is classic Forth technique; the oldest source I know of, though, is "Starting Forth", which discusses it extensively.

It's commonly called scaling.

For example, to scale a number by pi (3.1415...), approximate with 113 and 355:

```
: pi* 355 113 */ ;
```

The reason */ is a special word rather than having Forth just use * and / seperately is that */ uses a double-length intermediate result, so that overflow is impossible -- you can scale any number by any other, and so long as your denominator is big enough you'll get the correct answer.

Oh, I got 355/113 ~= pi from Starting Forth.

> Make it a good day!

> Ross

-Billy

Re: calculating fractions

Posted by [Neal Bridges](#) on February 20, 1999 at 16:06:38:

In Reply to: *Re: calculating fractions* posted by E. Ross Helton on February 20, 1999 at 15:56:06:

> after seeing the formula you gave it makes sense to me and it does work I just
> tried it. However, the question is where in all of the Forth material and
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don't
> have time to get online to ask questions. I looked through your manual and I
> didn't see such a situation addressed, and of the several manuals and
documents
> which I have downloaded and or printed on on Forth, I couldn't get anywhere
> close to the answer.

Certainly, if you don't have a copy of the ISO/ANSI Forth Standard, you should download it. `*/` is in the CORE wordset.

Also, if you download the free 30-day evaluation of "SwiftForth" from www.forth.com, it comes with a PDF version of "The Forth Programmer's Handbook"; this may well be a useful reference for offline use. They also sell this book in dead-tree form.

There are also a number of links from the "Online Resources" manual page to various tutorials; most of them cover `*/`, as it's a handy Forth operator.

> Most of the answers I have sought have been answered by your manual and
> 'Inch-4th' and 'Beginning Forth'

One of the reasons I established this forum was to help fill in the gaps.

I believe your difficulty in finding an answer was due to not realizing that Quartus Forth works in integers by default -- 1.234 is a double-cell (32-bit) integer, not a floating-point value. Armed with that fact, the answer would come very easily even without knowing `*/` --

```
30 1000 * 1609 /
```

would produce the same answer.

Neal

Re: calculating fractions

Posted by [E. Ross Helton](#) on February 20, 1999 at 19:42:49:

In Reply to: *Re: calculating fractions* posted by Neal Bridges on February 20, 1999 at 16:06:38:

> > after seeing the formula you gave it makes sense to me and it does work I just
> > tried it. However, the question is where in all of the Forth material and
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> www.forth.com, it comes with a PDF version of "The Forth Programmer's Handbook";
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> integer, not a floating-point value. Armed with that fact, the answer would
> come very easily even without knowing `*/` --

> 30 1000 * 1609 /

> would produce the same answer.

> Neal

> I believe your difficulty in finding an answer was due to not realizing that
> Quartus Forth works in integers by default -- 1.234 is a double-cell (32-bit)
> integer, not a floating-point value.

It is true that I didn't realize the above. Also it is true that this Forth

thing is really new to me. Even though I have written in Basic of four different kinds, C++ and two different Visual Basics, and they get at the whole subject much differently. When I first started this journey about a month ago I was brought in by the desire to get some programs for the Pilot. I am a Dos user and Win3.1 and the programs which I had which did programming for the Pilot were for Win95 and Win98. I wasn't ready to totally junk every good thing I had to program in Win95 for the Pilot. So when I saw your program It really took hold of me. If it hadn't been for that I wouldn't have even started this process. The reason is that it has been pretty tough for me in places. I have had to unlearn some old things and to learn many new ones. I must say that I like the new ones and plan to eventually to convert some programs to Forth for the PC.

All of this is to say thanks! I have also enjoyed myself in the whole of it. My wife has threatened to toss my Pilot into the garage though. It is so easy to program in all kinds of places that a normal computer wouldn't allow.

Make it a good day!

Ross

Re: calculating fractions

Posted by [Neal Bridges](#) on February 20, 1999 at 19:58:39:

In Reply to: *Re: calculating fractions* posted by E. Ross Helton on February 20, 1999 at 19:42:49:

> All of this is to say thanks! I have also enjoyed myself in the whole of it.

I'm glad about that.

> My wife has threatened to toss my Pilot into the garage though. It is so easy
> to program in all kinds of places that a normal computer wouldn't allow.

Hee hee!

Neal

DB Words: Accessing DB Data

Posted by [Mike Davis](#) on February 20, 1999 at 02:05:50:

Suppose I have a DB, created with RsrcEdit. It's just a DB and not a resource DB. There are 4 fields per record. Integer, String, Integer, String.

I assume I would use:

: OpenDB (mode zaddr len -- dbr.) ; to open the DB. But I'm a little

confused. What is 'len'? Is zaddr the name of the DB?

After opening the DB, what function would I use to get a particular record? Would it be DmGetRecord(index dbP. -- VoidHand.)? If so, is dbP. the value left on the stack by OpenDb (that is: dbr.)?

How do I get that specific record to a buffer area? And finally, what words would I use to parse the buffered data into the specific fields.

I have used forth before but am not familiar with these specific words or DB access using forth.

Thanks

Re: DB Words: Accessing DB Data

Posted by [Neal Bridges](#) on February 20, 1999 at 09:37:30:

In Reply to: *DB Words: Accessing DB Data* posted by Mike Davis on February 20, 1999 at 02:05:50:

> Suppose I have a DB, created with RsrcEdit. It's just a DB and not a resource
> DB. There are 4 fields per record. Integer, String, Integer, String.

Are you strings fixed-length, or variable? Are your integers 2-byte, or 4-byte?

> I assume I would use:

> : OpenDB (mode zaddr len -- dbr.) ; to open the DB. But I'm a little
> confused. What is 'len'? Is zaddr the name of the DB?

There are examples of the use of OpenDB in various places -- *doc.txt* is one, *tealbitmap.txt* is another. Allen Chen's *newmemo.txt* is another good place to look.

"zaddr len" is a zero-byte delimited string address, with its length. Use **Z** from the *zstrings.txt* module to create such a string.

> After opening the DB, what function would I use to get a particular record?
> Would it be DmGetRecord(index dbP. -- VoidHand.)? If so, is dbP. the value
left
> on the stack by OpenDb (that is: dbr.)?

DmGetRecord or DmQueryRecord will access a particular record. "dbP." is the two-cell value (a "DmOpenRef") returned by OpenDB. I can see the confusion (dbP. vs. dbr.) -- I'll clean that up, thanks.

The reference you want is the book in the 3Com SDK: "Developing Palm OS 3.0 Applications: Part III: Memory and Communications Management", freely available from 3Com.

> How do I get that specific record to a buffer area? And finally, what words
> would I use to parse the buffered data into the specific fields.

Once you've got the handle to the record, you lock it with MemHandleLock; this

returns a 32-bit pointer. You can copy your record to a buffer using the OS call MemMove, or select specific parts with the 32-bit memory words **2@a**, **@a** and **c@a**. Once you've finished with the record, MemHandleUnlock releases the handle, and DmReleaseRecord releases the record.

The Palm OS protects storage RAM from accidental overwriting, so writing to database records must be done via the system call DmWrite. Again, see the 3Com SDK docs (and perhaps *newmemo.txt* in the Quartus Forth File Area) for more details.

Neal

New Game: Tablut

Posted by [Neal Bridges](#) on February 19, 1999 at 22:19:03:

Juergen Bermann (author of the Ishido game) has written a new game using Quartus Forth -- it's called Tablut. It's an old Viking board game, a favourite of mine from quite a way back.

Look for it at PilotGear!

Neal

New Emulator

Posted by [Mike Will](#) on February 19, 1999 at 21:37:23:

Has anyone seen the new 2.1d25 emulator?
What a beautiful display. Seems a bit quicker too.

Re: New Emulator

Posted by [Neal Bridges](#) on February 19, 1999 at 22:15:39:

In Reply to: *New Emulator* posted by Mike Will on February 19, 1999 at 21:37:23:

> Has anyone seen the new 2.1d25 emulator?
> What a beautiful display. Seems a bit quicker too.

They made that display change in 2.1d24; it's very nice. And it's much faster than 2.1d23 ever was. Quite usable.

Neal

Re: New Emulator

Posted by [Dan Vincent](#) on February 20, 1999 at 08:45:11:

In Reply to: *Re: New Emulator* posted by Neal Bridges on February 19, 1999 at 22:15:39:

> > Has anyone seen the new 2.1d25 emulator?

> > What a beautiful display. Seems a bit quicker too.

> They made that display change in 2.1d24; it's very nice. And it's much faster
> than 2.1d23 ever was. Quite usable.

> Neal

Pardon a newbie's question, but where do you find this emulator? Who makes it?

Thanks,

Dan

Where to get the Emulator (was Re: New Emulator)

Posted by [Neal Bridges](#) on February 20, 1999 at 09:20:10:

In Reply to: *Re: New Emulator* posted by Dan Vincent on February 20, 1999 at 08:45:11:

> Pardon a newbie's question, but where do you find this emulator? Who makes
> it?

From the Online Resources page of the Quartus Forth manual. There's a release
version, and a 'seed' version; we're discussing 2.1d25, the latest seed.

Neal

Re: Is this version syncing (Was: Where to get and New Emulator)

Posted by [Branko Znuderl](#) on February 22, 1999 at 02:54:47:

In Reply to: *Where to get the Emulator (was Re: New Emulator)* posted by Neal Bridges on February 20, 1999 at 09:20:10:

Frieds,

just a short question, does this version make possible to sync with desk top app?

Branko

> > Pardon a newbie's question, but where do you find this emulator? Who makes
> it?

> From the Online Resources page of the Quartus Forth manual. There's a release
> version, and a 'seed' version; we're discussing 2.1d25, the latest seed.

> Neal

Re: Is this version syncing (Was: Where to get and New Emulator)

Posted by [Mike Will](#) on February 22, 1999 at 10:12:55:

In Reply to: *Re: Is this version syncing (Was: Where to get and New Emulator)*
posted by Branko Znuderl on February 22, 1999 at 02:54:47:

Sorry, forgot about the HTML tag problem.

You can get the driver from:

<http://www.palm.com/custsupp/downloads/netsync.html>

Re: Is this version syncing (Was: Where to get and New Emulator)

Posted by [Mike Will](#) on February 22, 1999 at 10:09:38:

In Reply to: *Re: Is this version syncing (Was: Where to get and New Emulator)* posted by Branko Znuderl on February 22, 1999 at 02:54:47:

> just a short question, does this version make possible to sync with
> desk top app?

A short question, but a long, winding answer. The new version does, in fact, have cable-less hotsyncing as a feature (they call it NetSync). You can get the driver from:

It seems to install and set up properly, giving you the theoretical ability not only to hotsync on a single PC, but also across a network (or Internetwork). Now we can all connect to Neal's machine and have him debug our code directly (I'm kidding).

I haven't been able to get it working yet for several reasons. First, my Win98 machine seems to have set up a phantom PPP device with no IP address. BTW if you're thinking about installing Win98 Service Pack 1, think again. It will crash your PC so badly that it will take a week to get it running again. Second, I don't have a DNS machine. I find a common problem with software these days is that it's all developed on a large, powerful network with no regard for those of us less fortunate (or more fortunate if you're a true Forther). Was anyone else frustrated with the two weeks the emulator development team wasted bantering about its name? Pose, Poser, Zim, Zot, who cares?

So, if anyone gets this puppy working, please share the knowledge.
Mike

Re: Is this version syncing (Was: Where to get and New Emulator)

Posted by [Branko Znuderl](#) on February 22, 1999 at 15:11:25:

In Reply to: *Re: Is this version syncing (Was: Where to get and New Emulator)* posted by Mike Will on February 22, 1999 at 10:09:38:

>
> > just a short question, does this version make possible to sync with
> > desk top app?

>snip<

> So, if anyone gets this puppy working, please share the knowledge.
> Mike

Yes, same for me!

It should work on plan stand alone W95 machine (ok I have
modem and Internet access ;-) if that help?!

Branko

Re: Is this version syncing (Was: Where to get and New Emulator)

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> > Mike

> Yes, same for me!

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> modem and Internet access ;-) if that help?!

> Branko

Well, one way of perhaps making this work is to use the DNS of your Internet provider. Unfortunately this isn't possible with mine (there's a proxy in the middle), but if you can connect to a service with direct DNS (Domain Name Server) access, you might be able to make NetSync work. Alternatively, I've seen a few shareware utilities around that implement a DNS right on your own Win95/98 machine. I don't have time this week to play with that, but maybe someone else does.

Mike

Floating point range checking

Posted by [Steven Donahue](#) on February 19, 1999 at 10:20:49:

I have a question about range checking of floating point numbers. What I want to do is verify that a stored floating point number is within a specific range (0.0e0 to 1.0e0) before updating the stored value. However, this is proving to be more difficult than expected.

In my tests, I start with a value of $6e-2$ (0.06), and use a delta value of $-25e-4$ (0.0025). With the range checking show below, I cannot get to 0.0e0. I can get to $0.25000000e-2$, but not 0.0e0. If I output the floating point value instead of dropping it in the else clause, it shows 0.00000000e0, but fails the f0= test.

Now for my two questions.

- 1) I suspect this is failing the f0= test due to a floating point error, but how do I correct for it?
- 2) Is there a better way to check the range than the way I am doing it? It seems a bit inefficient.

```
: UpdateTaxPct ( F: delta -- )
TaxPct f@ f+
\ check range
fdup f0= fdup 0e0 fswap f< or
fdup 1e0 f- f0= fdup 1e0 f< or
and if
TaxPct f!
else
fdrop
then ;
```

Re: Floating point range checking

Posted by [Neal Bridges](#) on February 19, 1999 at 11:02:07:

In Reply to: *Floating point range checking* posted by Steven Donahue on February 19, 1999 at 10:20:49:

> 2) Is there a better way to check the range than the way I am doing it? It
> seems a bit inefficient.

To test $0E0 \leq r \leq 1E0$:

```
: in-range? ( F: r -- ) ( -- flag )
1e0 fover f<
f0< or invert ;
```

I'll take a closer look at your other code to see what's happening there; it wasn't obvious at first glance.

Neal

Re: Floating point range checking

Posted by [Steven Donahue](#) on February 19, 1999 at 11:23:45:

In Reply to: *Re: Floating point range checking* posted by Neal Bridges on February 19, 1999 at 11:02:07:

```
> To test 0E0 <= r <= 1E0:  
> : in-range? ( F: r -- ) ( -- flag )  
> 1e0 fover f<  
> f0< or invert ;
```

Much better! The test results are the same as my example, but this is much less cumbersome. I knew there would be a better way.

```
> I'll take a closer look at your other code to see what's happening there; it  
> wasn't obvious at first glance.
```

The floating point error is still a problem. Like I said. I used a starting value of 0.06e0 and did subsequent additions of -0.0025e0. I should be able to get to 0.0e0 with the above test, but I can't. I can get to 0.25e-2. Again, the value output by fs. is 0.00000000e0, but it fails the f0= test. Hmmmm...

Thanks, Neal.

Steve

Re: Floating point range checking

Posted by [Neal Bridges](#) on February 21, 1999 at 22:48:36:

In Reply to: *Re: Floating point range checking* posted by Steven Donahue on February 19, 1999 at 11:23:45:

```
> The floating point error is still a problem. Like I said. I used a starting  
> value of 0.06e0 and did subsequent additions of -0.0025e0. I should be able  
> to  
> get to 0.0e0 with the above test, but I can't. I can get to 0.25e-2. Again,  
> the value output by fs. is 0.00000000e0, but it fails the f0= test. Hmmmm...
```

The value output by FS. is rounded to the number of displayed digits, hence the output of 0.00000000E0. While successively subtracting 0.0025E0, along the way one of the interim values has a very small loss of precision -- the result of the subtraction results in a number that cannot be exactly represented by the binary mantissa of a floating-point value. The error is so small (beyond the

8th decimal place) that it doesn't show in the output, but nevertheless is propagated through further subtractions, hence the lack of exact equality to 0E0 after 24 steps.

If you need to iterate from 0.06E0 downwards to 0E0 in increments of 0.0025E0, you have a number of choices.

- a) Iterate (using a DO LOOP) 24 times, each time subtracting 0.0025E0, or
- b) Iterate and calculate the required value using F*, or
- c) Check for your lower boundary point with F~ instead of F0=.

Neal

Re: Floating point range checking

Posted by [Neal Bridges](#) on February 19, 1999 at 11:38:16:

In Reply to: *Re: Floating point range checking* posted by Steven Donahue on February 19, 1999 at 11:23:45:

> The floating point error is still a problem. Like I said. I used a starting
> value of 0.06e0 and did subsequent additions of -0.0025e0. I should be able
to
> get to 0.0e0 with the above test, but I can't. I can get to 0.25e-2. Again,
> the value output by fs. is 0.00000000e0, but it fails the f0= test. Hmmm...
F0= only matches 0e0 exactly. What you need is the Standard word **F~** --
try this:

```
: F~ ( -- flag ) ( F: R1 R2 R3 -- )
  fdup f0= if fdrop f- f0= exit then
  0e0 fover f< if
    frot frot f- fabs fswap
  else
    fnegate frot frot fover
    fabs fover fabs f+ frot frot
    f- fabs frot frot f*
  then f< ;
```

Neal

Re: Floating point range checking

Posted by [Steven Donahue](#) on February 21, 1999 at 11:14:29:

In Reply to: *Re: Floating point range checking* posted by Neal Bridges on February 19, 1999 at 11:38:16:

This fixes the floating point error problem, but now I think I'm back to the old problem of a long, messy looking test.

```
: tax-range? ( F: R -- ) ( -- flag )
\ greater or equal to zero
fdup 0e0 49e-6 F~ fdup 0e0 fswap f< or
fdup 1e0 49e-6 F~ 1e0 f< or
and ;
```

Again, I think there has to be a more efficient way to check this range, but it is not obvious to me. I guess I'm just too used to being able to test like:
if ((x >= 0.0) and (x <= 1.0)) then ...

Thanks for the help. This is all starting to come together for me, but I'm requiring a bit of spoon feeding :-)

Steve

Re: Floating point range checking

Posted by [Neal Bridges](#) on February 21, 1999 at 12:03:56:

In Reply to: *Re: Floating point range checking* posted by Steven Donahue on February 21, 1999 at 11:14:29:

> This fixes the floating point error problem, but now I think I'm back to the
> old problem of a long, messy looking test.

```
> : tax-range? ( F: R -- ) ( -- flag )
> \ greater or equal to zero
> fdup 0e0 49e-6 F~ fdup 0e0 fswap f< or
> fdup 1e0 49e-6 F~ 1e0 f< or
> and ;
```

> Again, I think there has to be a more efficient way to check this range, but
> it
> is not obvious to me. I guess I'm just too used to being able to test like:
> if ((x >= 0.0) and (x <= 1.0)) then ...

This code is exactly equivalent to the "if ((x>=..." line above.

```
: f0>= ( F: r -- ) ( -- flag )
  f0< 0= ;
```

```
: in-range? ( F: r -- ) ( -- flag )
  fdup f0>=
  1e0 fswap f< 0=
  and
;
```

Neal

Re: Floating point range checking

Posted by [Steven Donahue](#) on February 21, 1999 at 21:14:58:

In Reply to: *Re: Floating point range checking* posted by Neal Bridges on February 21, 1999 at 12:03:56:

> > This fixes the floating point error problem, but now I think I'm back to the
> > old problem of a long, messy looking test.

```
> > : tax-range? ( F: R -- ) ( -- flag )
> > \ greater or equal to zero
> > fdup 0e0 49e-6 F~ fdup 0e0 fswap f< or
> > fdup 1e0 49e-6 F~ 1e0 f< or
> > and ;
```

> > Again, I think there has to be a more efficient way to check this range, but
> > it

> > is not obvious to me. I guess I'm just too used to being able to test like:
> > if ((x >= 0.0) and (x <= 1.0)) then ...

> This code is exactly equivalent to the "if ((x>=..." line above.

```
>
: f0>= ( F: r -- ) ( -- flag )
>   f0< 0= ;
>
```

```
>
: in-range? ( F: r -- ) ( -- flag )
>   fdup f0>=
>   1e0 fswap f< 0=
>   and
> ;
>
```

> Neal

Yes, but once you introduce "F~" ("f-proximate") like we discussed in this thread, aren't "f0<" and "0=" replaced by a more complicated test? I intended the main point of my follow-up question to be the efficient use of f-proximate in equality tests. Please see the example code I provided above for my less-than-efficient use of f-proximate, and let me know if you have any

suggestions for improvement :-)

Thanks.

Steve

Re: Floating point range checking

Posted by [Neal Bridges](#) on February 21, 1999 at 21:34:20:

In Reply to: *Re: Floating point range checking* posted by Steven Donahue on February 21, 1999 at 21:14:58:

> Yes, but once you introduce "F~" ("f-proximate") like we discussed in this
> thread, aren't "f0<" and "0=" replaced by a more complicated test? I intended
> the main point of my follow-up question to be the efficient use of f-proximate
> in equality tests. Please see the example code I provided above for my
> less-than-efficient use of f-proximate, and let me know if you have any
> suggestions for improvement :-)

From your "I'm used to doing if((x..." line, I had a different impression of what you were asking.

Equality has a different meaning with floating-point data than it does for integers. Two calculations resulting in a floating-point value of '0' may in fact differ by a very small amount; thus a bit-for-bit comparison for equality will fail.

I've included a link to an interesting page on the subject.

F~ is a tool for testing near-equality of floating-point numbers, not a replacement for f0<. F0< is itself a range-check; any float less than 0 will return TRUE. The 0= in my code works on the data stack, not the floating-point stack; it inverts the value of the flag on the stack.

If it's critical that you compare two floating-point values for equality, F~ is the only way to go; F= does an exact comparison, so numbers that differ by any amount, no matter how small, would not compare equal. With F~, you can set the threshold yourself.

Having said that, there may well be a better way to handle F~. I'll look at your posted code and let you know.

Neal

- [BEWARE OF EQUALITY TESTS BETWEEN FLOATING-POINT DATA](#)

Re: Floating point range checking

Posted by [Allen Chen](#) on February 19, 1999 at 16:33:19:

In Reply to: *Re: Floating point range checking* posted by Neal Bridges on February 19, 1999 at 11:38:16:

> F0= only matches 0e0 exactly. What you need is the Standard word **F~** --
> try this:

>

```
> : F~ ( -- flag ) ( F: R1 R2 R3 -- )
>   fdup f0= if fdrop f- f0= exit then
>   0e0 fover f< if
>     frot frot f- fabs fswap
>   else
>     fnegate frot frot fover
>     fabs fover fabs f+ frot frot
>     f- fabs frot frot f*
>   then f< ;
```

I always like to rework a floating point controlled loop into an integer controlled loop. If F1=start, F2=end, F3=inc, just do (F2-F1)/F3, convert the result to an integer (it's always a positive integer: if F1>F2, then you are decrementing and F3<0, otherwise you are incrementing and F3>0), and decrement this integer for loop control. This is probably faster as you only have to do one FP division before the loop starts, instead of using F~ (which at least contains a FP multiplication) every iteration. Of course, you still have to update F1 by F3 every iteration if you want to access the current state, but the loop will not be controlled or affected by the floating point error, and still faster than doing a multiplication every iteration.

-Allen

Re: Floating point range checking

Posted by [Neal Bridges](#) on February 19, 1999 at 16:39:27:

In Reply to: *Re: Floating point range checking* posted by Allen Chen on February 19, 1999 at 16:33:19:

> I always like to rework a floating point controlled loop into an integer
> controlled loop.

That's a good practice. Floating-point calculations are always approximate, as not all values can be represented by a unique bit pattern. Using them for counting is a common error.

Neal

Callbacks

Posted by [Michael Collas](#) on February 18, 1999 at 21:11:43:

I'm starting to experiment with callbacks (I want to use a custom drawing routine for a table), but I'm not sure that I'm doing the right thing.

I get the address of the callback to pass as a parameter by using `xt>abs`. Is this the right way to do it? This simple callback code works fine:

```
: callback-test callback 0 drop end-callback ;
```

This simple code (and many other tests) causes a reset, however, which is what makes me wonder if I've got the right idea:

```
: drop-it drop ;  
: callback-test callback 0 drop-it end-callback ;
```

I also need to know how to access the parameters for the callback routine. Should I expect them to be available on the stack, or do I need to do something special to get at them? I read the documentation on the callback word, which mentions that it temporarily makes the return stack the data stack. I feel fairly in the dark here, and almost all my experiments result in a reset.

Thanks,

Michael Collas

Re: Callbacks

Posted by [Neal Bridges](#) on February 18, 1999 at 21:21:38:

In Reply to: *Callbacks* posted by Michael Collas on February 18, 1999 at 21:11:43:

> I'm starting to experiment with callbacks (I want to use a custom drawing
> routine for a table), but I'm not sure that I'm doing the right thing.

Your example code appears correct. I believe I need to enhance the callback/end-callback functions to allow them to work properly in table callbacks. I'll look into it.

Neal

Re: Callbacks

Posted by [Neal Bridges](#) on February 18, 1999 at 22:16:15:

In Reply to: *Re: Callbacks* posted by Neal Bridges on February 18, 1999 at 21:21:38:

> > I'm starting to experiment with callbacks (I want to use a custom drawing
> > routine for a table), but I'm not sure that I'm doing the right thing.

> Your example code appears correct. I believe I need to enhance the
> callback/end-callback functions to allow them to work properly in table
> callbacks. I'll look into it.

Michael, I've just emailed you an interim version; it incorporates the above enhancements. Let me know how it works!

Neal

Re: Callbacks

Posted by Michael Collas on February 18, 1999 at 23:46:54:

In Reply to: *Re: Callbacks* posted by Neal Bridges on February 18, 1999 at 22:16:15:

> Michael, I've just emailed you an interim version; it incorporates the above
> enhancements. Let me know how it works!

Thanks Neal, the interim version behaves much better. I'm still not clear on how to find the parameters that are passed to the callback, though. Removing anything from the stack causes a reset, which is understandable if it's the return stack I'm dealing with and what I'm removing from the top of stack is a return address rather than a parameter to the callback. What am I missing here?

Michael Collas

Re: Callbacks

Posted by [Neal Bridges](#) on February 18, 1999 at 23:56:38:

In Reply to: *Re: Callbacks* posted by Michael Collas on February 18, 1999 at 23:46:54:

>
> > Michael, I've just emailed you an interim version; it incorporates the above
> > enhancements. Let me know how it works!

> Thanks Neal, the interim version behaves much better. I'm still not clear on
> how to find the parameters that are passed to the callback, though. Removing
> anything from the stack causes a reset, which is understandable if it's the
> return stack I'm dealing with and what I'm removing from the top of stack is a
> return address rather than a parameter to the callback. What am I missing
here?

callback removes the return-address for you; **end-callback** puts it
back. During a callback, the return stack behaves just as the normal stack
does in non-callback words.

The stack holds the callback parameters. You can access the callback parameters
via DUP, OVER, 2OVER, or PICK. The net effect of the callback must be to
neither remove nor add items to the stack.

Neal

Re: Callbacks

Posted by [Michael Collas](#) on March 08, 1999 at 14:17:27:

In Reply to: *Re: Callbacks* posted by Neal Bridges on February 18, 1999 at 23:56:38:

...
> **callback** removes the return-address for you; **end-callback** puts
it
> back. During a callback, the return stack behaves just as the normal stack
> does in non-callback words.

> The stack holds the callback parameters. You can access the callback
parameters
> via DUP, OVER, 2OVER, or PICK. The net effect of the callback must be to
> neither remove nor add items to the stack.

> Neal

Thanks, this works fine. How do I handle callbacks that need to return a value
- eg. the callback for DmQuickSort?

Thanks,

Michael Collas

Making menu choices

Posted by [E. Ross Helton](#) on February 18, 1999 at 19:17:27:

Hi;

I've several programs in Quartus which work and which require the user make a choice from a menu and then carry out the action chosen. However, now I am expanding a program called Rchill and it isn't working. My problem is that I have now more than two choices for the user to make. The following lines are lifted from the section where the choice is being made. The problem is in the line 'else u-choose @ 2 = if in-cent'. If this line is active then when I tried to run it the Pilot crashes. If I make it inactive then I can get the first choice and the third comes as a default. What am I doing wrong?

```
." Choose Number then
return" cr cr
10 xpos ." 1 For Fahrenheit" cr
10 xpos ." 2 For Centigrade" cr
10 xpos ." 3 For MPH" cr
20 xpos ." Input Number" font drop 92
xpos p-in u-choose ! cr
u-choose @ 1 = 1 if in-fahr
else u-choose @ 2 = if in-cent
else in-mpH
then ;
```

Make it a good day!

Ross

Re: Making menu choices

Posted by [Neal Bridges](#) on February 18, 1999 at 19:28:07:

In Reply to: *Making menu choices* posted by E. Ross Helton on February 18, 1999 at 19:17:27:

> I've several programs in Quartus which work and which require the user make a
> choice from a menu and then carry out the action chosen. However, now I am
> expanding a program called Rchill and it isn't working. My problem is that I
> have now more than two choices for the user to make. The following lines are
> lifted from the section where the choice is being made. The problem is in the

```
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> to run it the Pilot crashes. If if make it inactive then I can get the first
> choice and the third comes as a default. What am I doing wrong?
>
> ." Choose Number then
> return" cr cr
> 10 xpos ." 1 For Fahrenheit" cr
> 10 xpos ." 2 For Centigrade" cr
> 10 xpos ." 3 For MPH" cr
> 20 xpos ." Input Number" font drop 92
> xpos p-in u-choose ! cr
> u-choose @ 1 = 1 if in-fahr
> else u-choose @ 2 = if in-cent
> else in-mpH
> then ;
```

Every IF needs a THEN. I see only one THEN for your two IFs.

Also, the first line

```
u-choose @ 1 = 1 if in-fahr
```

should probably read

```
u-choose @ 1 = if in-fahr
```

Give those ideas a try; let me know what happens.

Neal

Re: Making menu choices

Posted by [E. Ross Helton](#) on February 19, 1999 at 00:35:13:

In Reply to: *Re: Making menu choices* posted by Neal Bridges on February 18, 1999 at 19:28:07:

```
> > I've several programs in Quartus which work and which require the user make
> > a
> > choice from a menu and then carry out the action chosen. However, now I am
> > expanding a program called Rchill and it isn't working. My problem is that
> > I
> > have now more than two choices for the user to make. The following lines are
> > lifted from the section where the choice is being made. The problem is in
> > the
> > line 'else u-choose @ 2 = if in-cent'. If this line is active then when I
> > tried
> > to run it the Pilot crashes. If if make it inactive then I can get the
> > first
> > choice and the third comes as a default. What am I doing wrong?
```

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> >
> > ." Choose Number then
> > return" cr cr
> > 10 xpos ." 1 For Fahrenheit" cr
> > 10 xpos ." 2 For Centigrade" cr
> > 10 xpos ." 3 For MPH" cr
> > 20 xpos ." Input Number" font drop 92
> > xpos p-in u-choose ! cr
> > u-choose @ 1 = 1 if in-fahr
> > else u-choose @ 2 = if in-cent
> > else in-mpH
> > then ;

> Every IF needs a THEN. I see only one THEN for your two IFs.

> Also, the first line

> u-choose @ 1 = 1 if in-fahr

> should probably read

> u-choose @ 1 = if in-fahr

> Give those ideas a try; let me know what happens.

> Neal
```

Thanks Neal;

You caught the 'then' which I needed the extra '1' above is just a typo in this and was not in the actual program. I should have seen the 'then'; guess that comes from being too close to the things you're working on. I should really be upset with you. Since I have found Quartus I have started all over to learn a new programming language and it is taking a lot of time. Thanks!!

Make it a good day!
Ross

Re: Making menu choices

Posted by [Neal Bridges](#) on February 19, 1999 at 13:45:27:

In Reply to: *Re: Making menu choices* posted by E. Ross Helton on February 19, 1999 at 00:35:13:

```
> I should have seen the 'then'; guess that
> comes from being too close to the things you're working on.
```

safe.txt will catch such things for you during development.

```
> I should really be
> upset with you. Since I have found Quartus I have started all over to learn a
> new programming language and it is taking a lot of time. Thanks!!
```

Just don't stick any pins in your Neal doll. :)

Neal

Re: Making menu choices

Posted by [E. Ross Helton](#) on February 19, 1999 at 17:06:43:

In Reply to: *Re: Making menu choices* posted by Neal Bridges on February 19, 1999 at 13:45:27:

> > I should have seen the 'then'; guess that
> > comes from being too close to the things you're working on.
> *safe.txt* will catch such things for you during development.

I'm not usre what you mean by the above. How do you activate it?

> > I should really be
> > upset with you. Since I have found Quartus I have started all over to learn
> > a
> > new programming language and it is taking a lot of time. Thanks!!
> Just don't stick any pins in your Neal doll. :)

Hey, I hadn't thought about that! I need to visit my Bayou friend and see what we can do about that :)

> Neal

Re: Making menu choices

Posted by [Neal Bridges](#) on February 19, 1999 at 17:12:36:

In Reply to: *Re: Making menu choices* posted by E. Ross Helton on February 19, 1999 at 17:06:43:

> > > I should have seen the 'then'; guess that
> > > comes from being too close to the things you're working on.
> > *safe.txt* will catch such things for you during development.
> I'm not usre what you mean by the above. How do you activate it?

safe.txt is in the Quartus Forth library. To use it:

needs safe

It slows compilation a bit, and adds some overhead to certain operations at run-time, but it catches a large number of errors (missing **then**, division-by-zero, etc.). It's for use during development; for final release, you'd remove it.

Neal

Re: Making menu choices

Posted by [E. Ross Helton](#) on February 19, 1999 at 17:17:05:

In Reply to: *Re: Making menu choices* posted by Neal Bridges on February 19, 1999 at 17:12:36:

> > > > I should have seen the 'then'; guess that
> > > > comes from being too close to the things you're working on.
> > > *safe.txt* will catch such things for you during development.
> > I'm not usre what you mean by the above. How do you activate it?
> *safe.txt* is in the Quartus Forth library. To use it:
> needs safe
> It slows compilation a bit, and adds some overhead to certain operations at
> run-time, but it catches a large number of errors (missing **then**,
> division-by-zero, etc.). It's for use during development; for final release,
> you'd remove it.
> Neal

Great thanks for the info. Didn't have time to get my Neal doll made anyway!

Make it a great day!

Ross

ekey problems

Posted by [Steve Gibson](#) on February 18, 1999 at 17:56:37:

I'm building and application, working off Steven Donahue's tutorial "hello world" app, and set up an event loop that I had thought would be fairly straight forward, but apparently it is not.

I'm trying to trap not only menu selections, but also button pushes (I also want to trap popup triggers, but haven't messed with that yet). When I only trap for menu events, everything works fine. But if I then try to add code that will

also check for a button activation, I get a fatal:

```
:do-event ( ekey -- )
menuEvent = if
event >abs itemid
menuAbout = if
AboutBox FrmAlert drop
then
event >abs itemid
menuQuit = if
QuitBox FrmAlert drop
then
event >abs itemid
menuSave = if
WriteFields
then
then
\ When I add the following...fatal error
ctlSelectEvent = if
event >abs itemid
buttonSave = if
WriteFields
then
then
;

: go show-panel
begin ekey do-event again ;
```

I thought that the event type returned by ekey would stay on the stack and only get processed if it matched one of the events I'm trying to trap for...do I need to put a 'dup' in there somewhere? I'm having a hard time visualizing what is on the stack at any given time since I'm staring at a form...

On an unrelated note: I received my registered version of Quartus (Thanks, Neal!) and built my first stand-alone app this morning! Very cool. One problem I ran into: when I deleted the app, it also deleted my resource DB. Fortunately I had the foresight to hotsync right before, so I didn't lose anything. Is there any way to prevent this from happening?

-Steve



Re: ekey problems

Posted by [Neal Bridges](#) on February 18, 1999 at 19:33:04:

In Reply to: *ekey problems* posted by Steve Gibson on February 18, 1999 at 17:56:37:

```
> I'm trying to trap not only menu selections, but also button pushes (I also
> want
> to trap popup triggers, but haven't messed with that yet). When I only trap
> for
> menu events, everything works fine. But if I then try to add code that will
> also check for a button activation, I get a fatal:
```

```
> :do-event ( ekey -- )
> menuEvent = if
> event >abs itemid
> menuAbout = if
> AboutBox FrmAlert drop
> then
> event >abs itemid
> menuQuit = if
> QuitBox FrmAlert drop
> then
> event >abs itemid
> menuSave = if
> WriteFields
> then
> then
> \ When I add the following...fatal error
> ctlSelectEvent = if
> event >abs itemid
> buttonSave = if
> WriteFields
> then
> then
> ;

> : go show-panel
> begin ekey do-event again ;
```

Simple solution. The first test, "menuEvent =" turns the item on the top of the stack into a flag, which is then consumed by IF. By the time you get to your second test (ctlSelectEvent), there's nothing on the stack.

Make them "dup MenuEvent =" and "dup ctlSelectEvent =" respectively, and add a "drop" after the final THEN. Your repeated "event >abs itemid" lines can also be eliminated via a similar technique.

Have a look at how 'Duco' handles buttons to see how to set up a multi-branch conditional.

```
> On an unrelated note: I received my registered version of Quartus (Thanks,
```

> Neal!) and built my first stand-alone app this morning! Very cool. One problem
> I ran into: when I deleted the app, it also deleted my resource DB. Fortunately
> I had the foresight to hotsync right before, so I didn't lose anything. Is
> there any way to prevent this from happening?

Use RsrcEdit to delete your apps instead of the Memory panel. RsrcEdit only deletes the app you select; Memory removes all items with the same creator ID.

Neal

Re: ekey problems

Posted by [Steve Gibson](#) on February 19, 1999 at 04:43:35:

In Reply to: *Re: ekey problems* posted by Neal Bridges on February 18, 1999 at 19:33:04:

> Simple solution. The first test, "menuEvent =" turns the item on the top of
> the stack into a flag, which is then consumed by IF. By the time you get to
> your second test (ctlSelectEvent), there's nothing on the stack.

> Make them "dup MenuEvent =" and "dup ctlSelectEvent =" respectively, and add a
> "drop" after the final THEN. Your repeated "event >abs itemid" lines can also
> be eliminated via a similar technique.

> Have a look at how 'Duco' handles buttons to see how to set up a multi-branch
> conditional.

Great! I had a feeling it was something simple that I wasn't catching on to. I've turned to using condthens, as illustrated in Duco, and all is well. Thanks!

> > On an unrelated note: I received my registered version of Quartus (Thanks,
> > Neal!) and built my first stand-alone app this morning! Very cool. One
> problem

> > I ran into: when I deleted the app, it also deleted my resource DB. Fortunately

> > I had the foresight to hotsync right before, so I didn't lose anything. Is
> > there any way to prevent this from happening?

> Use RsrcEdit to delete your apps instead of the Memory panel. RsrcEdit only
> deletes the app you select; Memory removes all items with the same creator ID.

Ah, of course. Thanks again!

-Steve

Re: ekey problems

Posted by [Allen Chen](#) on February 18, 1999 at 19:29:33:

In Reply to: *ekey problems* posted by Steve Gibson on February 18, 1999 at 17:56:37:

```
> I thought that the event type returned by ekey would stay on the stack and
only
> get processed if it matched one of the events I'm trying to trap for...do I
need
> to put a 'dup' in there somewhere? I'm having a hard time visualizing what is
> on the stack at any given time since I'm staring at a form...
```

Yup. The input parameter *ekey* will be consumed by

```
menuEvent = if
```

```
so you need to keep a copy of it on the stack if you want to use it again for
ctlSelectEvent = if
```

A simple way to visualize: if your code between the outer-most **if-then** block is well behaved, it should not produce any change on the stack (unless you want it to). So you can effectively ignore everything in there. So just concentrate on the "big picture", if you will. Assuming *ekey* value is already on the stack

```
ekey menuEvent = if then
ctlSelectEvent = if then
```

Note that **=** consumes two cells and generate a result to be consumed by **if**. Clearly, the second condition test will give you problem because there would be nothing on the stack!

If you don't like this, you can also use **case**, (assuming *ekey* value is on the stack again):

```
case
  menuEvent of  endof
  ctlSelectEvent of  endof
endcase
```

You can probably guess it by now: factoring out the stuff in **if-then** and **of-endof** and into their own words is probably a good idea.

Hope this helps,
-Allen

Display Problems

Posted by [Lou Solomon](#) on February 19, 1999 at 14:40:19:

In Reply to: *Re: ekey problems* posted by Allen Chen on February 18, 1999 at 19:29:33:

Allen:

I'm not sure what's going on, but in your code fragment you gave on the case statement, on my browser (ie 4.0 under NT), the fragment looked like this:

```
case
menuEvent of endof
ctlSelectEvent of endof
end case
```

But when looking in the source, (and in this reply), it looks like the following:

```
>
> case
>   menuEvent of   endof
>   ctlSelectEvent of   endof
> endcase
>
```

It seems like the is not showing up on my browser. I see that you are embedding HTML or the like in your replies/messages, but I thought you should know that it seems to give some wierd results when I read your messages.

Lou Solomon

```
> You can probably guess it by now: factoring out the stuff in
> if-then and of-endof and into their own words is
> probably a good idea.
```

```
> Hope this helps,
> -Allen
```

Browser oddities

Posted by [Neal Bridges](#) on February 19, 1999 at 15:11:39:

In Reply to: *Display Problems* posted by Lou Solomon on February 19, 1999 at 14:40:19:

> It seems like the {do your menu stuff} is not showing up on my browser. I see
> that you are embedding HTML or the like in your replies/messages, but I
thought
> you should know that it seems to give some wierd results when I read your
> messages.

Enclose anything in less-than and greater-than signs, and your browser will think it's an HTML tag; if it's not a valid tag, it's ignored and not displayed. Take care when using less-than and greather-than signs in online text.

The other option is for me to disallow HTML tags in forum messages; I'd rather leave them in.

Neal

Re: Browser oddities

Posted by [Allen Chen](#) on February 19, 1999 at 15:58:59:

In Reply to: *Browser oddities* posted by Neal Bridges on February 19, 1999 at 15:11:39:

> > It seems like the {do your menu stuff} is not showing up on my browser. I
see
> > that you are embedding HTML or the like in your replies/messages, but I
> thought
> > you should know that it seems to give some wierd results when I read your
> > messages.

> Enclose anything in less-than and greater-than signs, and your browser will
> think it's an HTML tag; if it's not a valid tag, it's ignored and not
displayed.
> Take care when using less-than and greather-than signs in online text.

> The other option is for me to disallow HTML tags in forum messages; I'd rather
> leave them in.

Yeah. Sorry about that. I thought the greater-than and less-than signs are ignored within the {pre}{/pre} block (shouldn't they be?). I guess not.

Is there an escape sequence start character (like a backslash or something) available that allows you to output the greater-than and less-than signs as-is? I'm a little rusty on my html code.

- Allen

Re: Browser oddities

Posted by Jonathan Lerwill on February 25, 1999 at 09:54:53:

In Reply to: *Re: Browser oddities* posted by Allen Chen on February 19, 1999 at 15:58:59:

Allen Chen wrote:

> Is there an escape sequence start character (like a backslash or
> something) available that allows you to output the greater-than and less-than
> signs as-is? I'm a little rusty on my html code.

> - Allen

In HTML > can be written as **>**
and <
as **<**;

/Jonathan

Using MakePRC question

Posted by [Mike Davis](#) on February 18, 1999 at 12:11:15:

Sorry, about all the questions I'll probably be asking. I know forth but am confused about using Quartus.

The syntax for MakePRC is shown below (3 items pushed onto stack then MakePRC):

```
MakePRC ( xt creatorID. -- )
```

Here is what the example shows (3 different items and MakePRC):

```
' go 12345. MakePRC Hello
```

But the example does not seem to match that syntax. I cannot try it out because I have not registered my copy yet.

What am I missing? Also, what is xt (it's not defined anywhere?)

Re: Using MakePRC question

Posted by [Allen Chen](#) on February 18, 1999 at 12:44:02:

In Reply to: *Using MakePRC question* posted by Mike Davis on February 18, 1999 at 12:11:15:

```
> The syntax for MakePRC is shown below (3 items pushed onto stack then
MakePRC):
> MakePRC ( xt creatorID. -- )
> Here is what the example shows (3 different items and MakePRC):
> ' go 12345. MakePRC Hello
> But the example does not seem to match that syntax. I cannot try it out
because
> I have not registered my copy yet.
> What am I missing? Also, what is xt (it's not defined anywhere?)
```

xt is the **execution token** of a word. Think of it as "pointer to a function" in C lingo. In native-compiled Forth systems, it's just the (relative) address of the start of the code field of a word, the address where you would *jsr* to in assembly. The ' word will parse the next word on the input buffer (i.e. **go**) and return the execution token of that word on the stack. Then **12345.** will put the number "12345" in 32-bit (i.e. two cells) on the stack. MakePRC needs to know where your program is and what 4-byte ID you want to designate it. It also needs the name of the program, which it parses from the next word on the input buffer.

You can play around with *xt* of a word:

```
\ This is the same as 555 dup
555      \ puts 555 on the stack
' dup    \ this puts the address (xt) of dup on the stack
execute  \ this executes the xt, which dups 555
```

Do a **.s**, you should get <2> 555 555 on your stack. You can make a sort of a jump table by storing a bunch of *xt*'s and **execute** them one by one.

Have fun,
-Allen

Re: Using MakePRC question

Posted by [Neal Bridges](#) on February 18, 1999 at 12:20:08:

In Reply to: *Using MakePRC question* posted by Mike Davis on February 18, 1999 at 12:11:15:

> Sorry, about all the questions I'll probably be asking. I know forth but am
> confused about using Quartus.

Hi, Mike. No problem; ask away.

> The syntax for MakePRC is shown below (3 items pushed onto stack then
MakePRC):

> MakePRC (xt creatorID. {name} --)

The notation {name} (I converted the less-than and greater-than signs to {} here, as the message board software thought they were an HTML tag) indicates that the name follows the command.

> Here is what the example shows (3 different items and MakePRC):

> ' go 12345. MakePRC Hello

> But the example does not seem to match that syntax. I cannot try it out because

> I have not registered my copy yet.

> What am I missing? Also, what is xt (it's not defined anywhere?)

xt is defined in the ISO/ANSI Forth Standard; grab a copy of it from the Online Resources page of the manual. It's free and very handy.

An xt is an 'execution token'; it's a value for a defined word returned by ' or ['. If you pass an xt to **EXECUTE**, the associated word is executed.

Neal

How do you get library into the Palm?

Posted by [Mike Davis](#) on February 18, 1999 at 12:06:05:

I am having problems understanding how to get library.mpa into the palm. I transferred it to the memopad area and hotsynced but library does not show up on the palm.

I tried opening the archive but then it would not sync.

What am I missing?

Re: How do you get library into the Palm?

Posted by [Neal Bridges](#) on February 18, 1999 at 12:22:19:

In Reply to: *How do you get library into the Palm?* posted by Mike Davis on February 18, 1999 at 12:06:05:

> I am having problems understanding how to get library.mpa into the palm. I
> transferred it to the memopad area and hotsynced but library does not show up
on
> the palm.

> I tried opening the archive but then it would not sync.

> What am I missing?

library.mpa cannot be directly HotSync'd. It's "MemoPad Archive" file that the Palm Desktop software can read.

Using the Windows Palm Desktop Software, you open the archive directly, and then mark and copy all the memos into a category in your own MemoPad. After a HotSync, all the library memos will appear on your Palm.

Neal

Variables & Number Types

Posted by [Barry Ekstrand](#) on February 17, 1999 at 12:40:03:

I have received my copy of Starting Forth and feel like I'm making significant headway in understanding the logic of Forth (to all who recommended this book - thanks - it is a great resource). I am having some trouble when dealing with numbers of different types. To be specific, I am wanting to take input from the user for several variables, then do some calculations, which require floating point accuracy. I thought that declaring the variable using FVARIABLE would ensure this for me regardless of how the value is input, but I've learned this isn't the case by checking the stacks - in other words, if the user enters 100, it ends up on the normal (semantics?) stack rather than the floating point stack.

I assume I need to take input and then do a conversion to floating point, but so far haven't succeeded in this (although I've reset my machine a few times trying!). Can you give me some insight on the right approach to this? What I'd like to end up with is the user being able to input his value as a fixed point value (single or double length) or floating point value but have the program do any necessary conversions to floating point.

Any help is appreciated!

Re: Variables & Number Types

Posted by [Neal Bridges](#) on February 17, 1999 at 14:14:25:

In Reply to: *Variables & Number Types* posted by Barry Ekstrand on February 17, 1999 at 12:40:03:

> I have received my copy of Starting Forth and feel like I'm making significant
> headway in understanding the logic of Forth (to all who recommended this book
-
> thanks - it is a great resource). I am having some trouble when dealing with
> numbers of different types. To be specific, I am wanting to take input from
> the user for several variables, then do some calculations, which require
> floating point accuracy. I thought that declaring the variable using
FVARIABLE
> would ensure this for me regardless of how the value is input, but I've
learned
> this isn't the case by checking the stacks - in other words, if the user
enters
> 100, it ends up on the normal (semantics?) stack rather than the floating
point
> stack.

> I assume I need to take input and then do a conversion to floating point, but
> so far haven't succeeded in this (although I've reset my machine a few times
> trying!). Can you give me some insight on the right approach to this? What
> I'd like to end up with is the user being able to input his value as a fixed
> point value (single or double length) or floating point value but have the
> program do any necessary conversions to floating point.

D>F converts a double-cell number on the data stack to a floating-point
number on the floating-point stack;
F>D does the opposite.

If you have a string that contains a number, **>FLOAT** will convert it to a
floating-point number on the floating-point stack.

Neal

Re: Variables & Number Types

Posted by [Barry Ekstrand](#) on February 18, 1999 at 12:37:24:

In Reply to: *Re: Variables & Number Types* posted by Neal Bridges on February 17, 1999 at 14:14:25:

Okay, I understand how to convert a double length value to floating point, and
I discovered the **S>D** word so I can even get a single length value to double to
floating point. I also understand the use of **>FLOAT** to take a string and

value.

It seems like a good approach would be to make all values ACCEPTed pure strings, which I would think could then be converted to floating point values convert to floating point. My dilemma, though, is that I cannot anticipate which type of value will be input by the user of the app. For example, I need to let the user input the amount of money tied up in a project. The value might be \$31,254.15 in real life, but he might elect to round it off to \$31,000. This means when he actually inputs the value, he might choose 31,000 (double length value), 31000. (double length value), or 31000 (single length value). I need to figure out how to evaluate which type the value is after it is entered by the user before I can properly convert it to a floating point with >FLOAT. However, when I've tried this it hasn't worked. I can put a string directly in the program and convert it without problems, i.e s" 31000" >FLOAT, but as far as taking a string from the user goes, all I can manage to do is TYPE it to the display.

With all this said, any and all help is appreciated!

Barry

> **D>F** converts a double-cell number on the data stack to a floating-point

> number on the floating-point stack;

> **F>D** does the opposite.

> If you have a string that contains a number, **>FLOAT** will convert it to a

> floating-point number on the floating-point stack.

> Neal

Re: Variables & Number Types

Posted by [Neal Bridges](#) on February 18, 1999 at 13:40:18:

In Reply to: *Re: Variables & Number Types* posted by Barry Ekstrand on February 18, 1999 at 12:37:24:

> It seems like a good approach would be to make all values ACCEPTed pure
> strings, which I would think could then be converted to floating point values
> convert to floating point. My dilemma, though, is that I cannot anticipate
> which type of value will be input by the user of the app. For example, I need
> to let the user input the amount of money tied up in a project. The value
> might be \$31,254.15 in real life, but he might elect to round it off to
> \$31,000. This means when he actually inputs the value, he might choose 31,000
> (double length value), 31000. (double length value), or 31000 (single length
> value). I need to figure out how to evaluate which type the value is after it
> is entered by the user before I can properly convert it to a floating point

> with >FLOAT. However, when I've tried this it hasn't worked. I can put a
> string directly in the program and convert it without problems, i.e s" 31000"
> >FLOAT, but as far as taking a string from the user goes, all I can manage to
> do is TYPE it to the display.

I'm confused by your question.

Let your users input a value into a string. Translate the input string to a
floating-point value using >FLOAT. If you need it as a double-cell
integer, convert accordingly with F>D.

Perhaps if you post the code that's giving you trouble, I can help you further.

Neal

Re: Variables & Number Types

Posted by [Barry Ekstrand](#) on February 18, 1999 at 16:59:35:

In Reply to: *Re: Variables & Number Types* posted by Neal Bridges on February 18,
1999 at 13:40:18:

Sorry for the confusion, I guess I was trying to give too much background on
what I've been trying. I think I've been hung up on old paradigms on how to
handle numbers - I had been trying to figure out how to handle conversions of
number types when you don't know what to expect from the user. Your comment
about >FLOAT got me looking at that word again, and I realized why I haven't
succeeded in using it. The ANS doc shows the stack diagram as (c-addr u -- r
true | false); I finally realized u is the length of the string at c-addr.
Once I got that I find the following works great:

```
decimal create input 20 chars allot  
: input# (--n) input 20 accept  
input swap >float ;
```

Success! Now, on to my next question: I want to take the value and raise it to
a power. I see the F** word in the ANS docs, but Quartus isn't recognizing
F**. I thought I could do a work-around using natural logs and exponentials,
but Quartus isn't recognizing FLN either. Am I missing a library file, or is
there something else I'm doing wrong?

Thanks again for the help.

Barry

> I'm confused by your question.

> Let your users input a value into a string. Translate the input string to a
> floating-point value using >FLOAT. If you need it as a double-cell
> integer, convert accordingly with F>D.

> Perhaps if you post the code that's giving you trouble, I can help you

further.

> Neal

Re: Variables & Number Types

Posted by [Neal Bridges](#) on February 18, 1999 at 17:09:38:

In Reply to: *Re: Variables & Number Types* posted by Barry Ekstrand on February 18, 1999 at 16:59:35:

> Success! Now, on to my next question: I want to take the value and raise it to
> a power. I see the F** word in the ANS docs, but Quartus isn't recognizing
> F**. I thought I could do a work-around using natural logs and exponentials,
> but Quartus isn't recognizing FLN either. Am I missing a library file, or is
> there something else I'm doing wrong?

Have a look at *FEL.txt* in the Quartus Forth File Area. **FX^Y**
should do the trick.

Neal

- [File Area](#)

Re: Variables & Number Types

Posted by [Mike Will](#) on February 17, 1999 at 13:38:05:

In Reply to: *Variables & Number Types* posted by Barry Ekstrand on February 17, 1999 at 12:40:03:

> I am having some trouble when dealing with
> numbers of different types. To be specific, I am wanting to take input from
> the user for several variables, then do some calculations, which require
> floating point accuracy. I thought that declaring the variable using
FVARIABLE
> would ensure this for me regardless of how the value is input, but I've
learned
> this isn't the case by checking the stacks - in other words, if the user
enters
> 100, it ends up on the normal (semantics?) stack rather than the floating
point
> stack.

> Any help is appreciated!

Barry,

The words d>f and f>d convert between doubles and floats.
eg.

```
123. d>f    puts 0.12300000E3 on the float stack
and
123e0 f>d    puts 123 0 on the normal stack
```

Cheers,
Mike

How to get library into emulator w/o Hotsync?

Posted by [Tim Russell](#) on February 16, 1999 at 23:24:26:

For some reason, even using a serial cable with a null modem looping between my two serial ports, I can't get POSE to Hotsync.

Thus, even though I've got Quartus and RsrcEdit loaded, it doesn't do a lot of good for development without the library. I tried running RsrcEdit on my real Pilot, copying the MemoDB to a new DB, changing the creator and setting the backup bit - this gave me a PDB file on the PC. I loaded that up in the emulator, ran RsrcEdit there, deleted the MemoDB, renamed the new one to MemoDB and changed the creator back.

No joy though - Memo shows them, but bombs trying to access them. I suspect it's because the categories aren't coming over somewhere.

Any ideas? I suppose the best thing would be to get Hotsync to work, but I'm stumped there.

Re: How to get library into emulator w/o Hotsync?

Posted by [Neal Bridges](#) on February 16, 1999 at 23:30:30:

In Reply to: *How to get library into emulator w/o Hotsync?* posted by Tim Russell on February 16, 1999 at 23:24:26:

> For some reason, even using a serial cable with a null modem looping between my two serial ports, I can't get POSE to Hotsync.

> Thus, even though I've got Quartus and RsrcEdit loaded, it doesn't do a lot of

> good for development without the library. I tried running RsrcEdit on my real
> Pilot, copying the MemoDB to a new DB, changing the creator and setting the
> backup bit - this gave me a PDB file on the PC. I loaded that up in the
> emulator, ran RsrcEdit there, deleted the MemoDB, renamed the new one to
MemoDB
> and changed the creator back.

> No joy though - Memo shows them, but bombs trying to access them. I suspect
> it's because the categories aren't coming over somewhere.

> Any ideas? I suppose the best thing would be to get Hotsync to work, but I'm
> stumped there.

You've got the right idea about getting the Memo database in, though I've
never tried to do it that way.

This has worked since at least the PalmOS Emulator 2.1d23:

Use BackupBuddy (or the free Linux boot-disk alternative, Penguin Backup) to
backup your Memo database -- on my system, the resulting file is called
MemoDB.PDB. Use the *Install* option in the Emulator to load that
file; bingo, all your memos are part of the Emulator.

Neal

Re: How to get library into emulator w/o Hotsync?

Posted by [Branko Znuderl](#) on February 17, 1999 at 03:57:15:

In Reply to: *Re: How to get library into emulator w/o Hotsync?* posted by Neal
Bridges on February 16, 1999 at 23:30:30:

>snip<

> This has worked since at least the PalmOS Emulator 2.1d23:

> Use BackupBuddy (or the free Linux boot-disk alternative, Penguin Backup) to
> backup your Memo database -- on my system, the resulting file is called
> **MemoDB.PDB**. Use the *Install* option in the Emulator to load that
> file; bingo, all your memos are part of the Emulator.

> Neal

That is fine - getting things from Palm Pilot -> Emulator.

But...

how to get things other way: from Emulator -> Palm Pilot

Basicly I would like to development with Quartus and
especialy with RsrcEdit (it uses bloody 116K of my 1Mb of RAM).

So 'How to' apriciated.

Branko

Re: How to get library into emulator w/o Hotsync?

Posted by [Tim Russell](#) on February 17, 1999 at 14:10:49:

In Reply to: *Re: How to get library into emulator w/o Hotsync?* posted by Branko Znuderl on February 17, 1999 at 03:57:15:

Neal may have forgotten, but there's a file called EME.ZIP in the Forth file area that claims to be able to extract memos from Emulator .RAM files - I haven't used it, but that should be a way to get them back out without having to Hotsync. I definitely can't wait for the emulator version that will hotsync without a loopback cable, though! That would be the ideal solution.

> That is fine - geting things from Palm Pilot -> Emulator.

> But...

> how to get things other way: from Emulator -> Palm Pilot

> Basicly I would like to development with Quartus and

> especialy with RsrcEdit (it uses bloody 116K of my 1Mb of RAM).

> So 'How to' apriciated.

Re: How to get library into emulator w/o Hotsync?

Posted by [Neal Bridges](#) on February 17, 1999 at 14:40:39:

In Reply to: *Re: How to get library into emulator w/o Hotsync?* posted by Tim Russell on February 17, 1999 at 14:10:49:

> Neal may have forgotten, but there's a file called EME.ZIP in the Forth file area that claims to be able to extract memos from Emulator .RAM files - I haven't used it, but that should be a way to get them back out without having to Hotsync. I definitely can't wait for the emulator version that will hotsync without a loopback cable, though! That would be the ideal solution.

I didn't forget -- but what Branko is after is using RsrcEdit on the Emulator, and then exporting the resources so created; the EME program only works with memos.

Neal

Re: How to get library into emulator w/o Hotsync?

Posted by [Neal Bridges](#) on February 17, 1999 at 11:19:29:

In Reply to: *Re: How to get library into emulator w/o Hotsync?* posted by Branko Znuderl on February 17, 1999 at 03:57:15:

> That is fine - getting things from Palm Pilot -> Emulator.
> But...
> how to get things other way: from Emulator -> Palm Pilot
> Basicly I would like to development with Quartus and
> especialy with RsrcEdit (it uses bloody 116K of my 1Mb of RAM).
> So 'How to' apriciated.

An upcoming version of the Palm OS Emulator will support HotSync without cables; Keith Rollin reports he's got it working already, so we should see it soon.

Neal

Newbie's question: absolute addresses, etc.

Posted by [Philippe de Rochembeau](#) on February 15, 1999 at 09:15:46:

What is an 'absolute address'?

What is >ABS used for, as in

```
: do-event ( ekey -- )  
menuEvent = if  
event >abs itemid  
AboutMenuItem = if  
AboutBox FrmAlert drop  
then  
then ;
```

Is there a way to display the contents of a variable or of the stack when running an application such as HelloApp? I have tried `'.(myvar :) .s cr'` but to no avail.

One last question. When you do

```
: string ." mystring " ; 40 allot  
why is string still 7 cells long (and not 40) when you type string count?
```

Many thanks.

Philippe de Rochambeau

Re: Newbie's question: absolute addresses, etc.

Posted by [Erwin Schomburg](#) on February 15, 1999 at 12:14:04:

In Reply to: *Newbie's question: absolute addresses, etc.* posted by Philippe de Rochambeau on February 15, 1999 at 09:15:46:

```
> What is an 'absolute address'?  
> What is >ABS used for, as in  
> : do-event ( ekey -- )  
> menuEvent = if  
> event >abs itemid  
> AboutMenuItem = if  
> AboutBox FrmAlert drop  
> then  
> then ;
```

As Quartus is an implementation that uses 16bit cells for stackvalues and adresses, all data is accessed by relative addressing. Hooks to the Operating System API require absolute addressing (32bit), hence the required conversion.

```
> Is there a way to display the contents of a variable or of the stack when  
running  
> an application such as HelloApp? I have tried '.(myvar : ) .s cr' but to no  
> avail.
```

Variables are represented as relative addresses on stack when invoked, you use the @ word to get the variable's contents on stack (replacing the address):

```
myvar @
```

You can then display the contents using . (dot):

```
.
```

thus removing it from stack, or the "debug word" .s:

```
.s
```

thus keeping the value on stack.

```
> One last question. When you do
```

```
> : string ." mystring " ; 40 allot  
> why is string still 7 cells long (and not 40) when you type string count?
```

ALLOT just reserves dataspace, your text is still "mystring ", and its not 7 cells long but 9 characters, and if you use the word string it still holds the instruction on how to print whats specified between dot-quote and closing quote, so it should print "mystring " and not give you any information back on stack.

```
> Many thanks.
```

```
Welcome  
/Erwin
```

```
> Philippe de Rochambeau
```

Re: Newbie's question: absolute addresses, etc.

Posted by [Philippe de Rochambeau](#) on February 15, 1999 at 15:35:27:

In Reply to: *Re: Newbie's question: absolute addresses, etc.* posted by Erwin Schomburg on February 15, 1999 at 12:14:04:

My previous message was not very clear.

First, is there an easy way to display the contents of particular variables while running the HelloWorld application which is described in the 1.0.2 Tutorial, before QForth quits?

Second, the input file located in the QForth library contains the following code:

```
: string ." mystring" ; 40 allot
```

I assume that 40 cells are allocated in case the user inputs a string which is longer than 'string'; i.e. 7 cells. Why didn't Neal allocate 40 cells to 'string' in the first place? Why did he move H by 40 cells after creating 'string'?

One last question. If data are addressed by relative addressing, which part of 32 bit cells is used? The first 16 bits or the last 16 bits?

Many thanks.

Philippe de Rochambeau

```
> > What is an 'absolute address'?
```

```
> > What is >ABS used for, as in
```

```
> > : do-event ( ekey -- )
```

```
> > menuEvent = if
```

```
> > event >abs itemid
> > AboutMenuItem = if
> > AboutBox FrmAlert drop
> > then
> > then ;

> As Quartus is an implementation that uses 16bit cells for stackvalues and
> adresses, all data is accessed by relative addressing. Hooks to the Operating
> System API require absolute addressing (32bit), hence the required conversion.

> > Is there a way to display the contents of a variable or of the stack when
> running
> > an application such as HelloApp? I have tried '(myvar : ) .s cr' but to no
> > avail.

> Variables are represented as relative addresses on stack when invoked, you use
> the @ word to get the variable's contents on stack (replacing the address):

> myvar @

> You can then display the contents using . (dot):

> .

> thus removing it from stack, or the "debug word" .s:

> .s

> thus keeping the value on stack.

> > One last question. When you do
> > : string ." mystring " ; 40 allot
> > why is string still 7 cells long (and not 40) when you type string count?

> ALLOT just reserves dataspace, your text is still "mystring ", and its not 7
> cells long but 9 characters, and if you use the word string it still holds the
> instruction on how to print whats specified between dot-quote and closing
> quote,
> so it should print "mystring " and not give you any information back on stack.

> > Many thanks.

> Welcome
> /Erwin

> > Philippe de Rochambeau
```



Re: Newbie's question: absolute addresses, etc.

Posted by [Neal Bridges](#) on February 15, 1999 at 16:00:19:

In Reply to: *Re: Newbie's question: absolute addresses, etc.* posted by Philippe de Rochambeau on February 15, 1999 at 15:35:27:

> My previous message was not very clear.

> First, is there an easy way to display the contents of particular variables
> while running the HelloWorld application which is described in the 1.0.2
> Tutorial, before QForth quits?

Well, sure. Use:

needs graphics

and then use

0 0 at *variablename* @ .

to display your variable -- it'll show up at the very top of the screen, overtop of the title area.

> Second, the input file located in the QForth library contains the following
> code:

```
> : string ." mystring" ; 40 allot
```

> I assume that 40 cells are allocated in case the user inputs a string which is
> longer than 'string'; i.e. 7 cells. Why didn't Neal allocate 40 cells to
'string

> 'in the first place? Why did he move H by 40 cells after creating 'string'?

The line you cite effectively allots 48 characters (not cells). The first 8 of these are set to "mystring". It's just a simple way of defining a string with room to grow.

> One last question. If data are addressed by relative addressing, which part of
> 32 bit cells is used? The first 16 bits or the last 16 bits?

Relative addresses are 16-bit addresses, equivalent to the lower 16-bits of a larger 32-bit address. They are relative to a 32-bit base pointer, which is the upper 16-bit part of the full 32-bit address.

Neal

Drawing grayscale on Quartus?

Posted by [Allen Chen](#) on February 15, 1999 at 02:03:15:

According to the manual, you can set the display mode to 2-bit depth using *ScrDisplayMode*. I assume this sets the dragonball display controller to 4-grayscale **and** allocate the double-sized draw buffer (? not sure). However, the drawing routines supplied by PalmOS doesn't seem to work with anything other than monochrome display. Is it possible to have Quartus supply some basic grayscale drawing words, grayscale setup words, etc?

-Allen

Re: Drawing grayscale on Quartus?

Posted by [Neal Bridges](#) on February 15, 1999 at 11:32:59:

In Reply to: *Drawing grayscale on Quartus?* posted by Allen Chen on February 15, 1999 at 02:03:15:

> According to the manual, you can set the display mode to 2-bit depth using
> *ScrDisplayMode*. I assume this sets the dragonball display
> controller to 4-grayscale **and** allocate the double-sized draw buffer (?
> not sure). However, the drawing routines supplied by PalmOS doesn't seem to
work
> with anything other than monochrome display. Is it possible to have Quartus
> supply some basic grayscale drawing words, grayscale setup words, etc?

Have a look at the link below; it should get you started down that path.

Neal

- ["Seeing Gray" -- FAQ on Grayscale from 3Com](#)

Re: Drawing grayscale on Quartus?

Posted by [Allen Chen](#) on February 15, 1999 at 12:04:15:

In Reply to: *Re: Drawing grayscale on Quartus?* posted by Neal Bridges on February 15, 1999 at 11:32:59:

> > not sure). However, the drawing routines supplied by PalmOS doesn't seem to
> work
> > with anything other than monochrome display. Is it possible to have Quartus
> > supply some basic grayscale drawing words, grayscale setup words, etc?
>
> Have a look at the link below; it should get you started down that path.

Thanks, Neal. I was under the impression that *WinDrawGrayLine*, etc, draws a "dotted" kind of line, as *WinSetColor* was not described in the manual. Now it appears from Palm Computing's web site that these are "unsupported" gray scale drawing routines (which incidentally can be accessed from Quartus). I will see if I can get them to work. The web site mentioned that all the grayscale-support API's, including *ScrDisplayMode*, only work in OS3, and may not work in future OS versions. It also mentioned that there are some hacks available that allow grayscale drawing across all platforms. Where could I find them, and is it possible for Quartus to build them into the kernel (or as a support module)?

-Allen

Re: Drawing grayscale on Quartus?

Posted by [Neal Bridges](#) on February 15, 1999 at 12:25:00:

In Reply to: *Re: Drawing grayscale on Quartus?* posted by Allen Chen on February 15, 1999 at 12:04:15:

> Thanks, Neal. I was under the impression that *WinDrawGrayLine*, etc,
> draws a "dotted" kind of line, as *WinSetColor* was not described in the
> manual. Now it appears from Palm Computing's web site that these are
> "unsupported" gray scale drawing routines (which incidentally can be accessed
> from Quartus). I will see if I can get them to work. The web site mentioned
> that all the grayscale-support API's, including *ScrDisplayMode*, only work in
> OS3, and may not work in future OS versions. It also mentioned that there
are
> some hacks available that allow grayscale drawing across all platforms. Where
> could I find them, and is it possible for Quartus to build them into the
kernel
> (or as a support module)?

I've seen the 2-bit-per-pixel routines; search *pilot.programmer* and *pilot.programmer.gcc* at www.dejanews.com, they should turn up.

It would certainly be possible to create Quartus Forth versions of these cross-platform drawing routines; however, 3Com has effectively stated that these won't work in future versions of the device, so I wouldn't put a lot of weight on them. The advice in the "Seeing Gray" article is good advice.

Neal

I'm blocking on Field>string...

Posted by [Steve Gibson](#) on February 14, 1999 at 06:26:42:

Warning: more ignorant newbie suff...

I'm blocking on how to get the Field>string word to work correctly...I think I'm blocking on the manipulation strings in Quartus in general, but this is a specific example that I need help understanding how to make work. Here's what I've got:

```
needs memo
needs Fields
needs ....blah-blah

1100 constant rptnumField \ ID number of my field
3 constant mcn \ Memo Pad category number

create strbuffer 80 chars allot

: WriteField
strbuffer rptnumField Field>string
openMemoDB
mcn strbuffer WriteNewMemoInCategory
closeMemoDB
beep
;
```

No matter what I input into the field, when I select my "Write" menu option, which calls the "WriteField" word, all I get is a new memo written with one funky character (looks kind of like a lowercase z). In addition to the new memo being created, I also get the "beep" sound, so I'm pretty sure that the Memo Pad words are working properly.

I don't know why the storage and manipulation of strings is such a hurdle for me in Quartus, but I must admit it baffles me.

-Steve

Re: I'm blocking on Field>string...

Posted by [Neal Bridges](#) on February 14, 1999 at 11:56:58:

In Reply to: *I'm blocking on Field>string...* posted by Steve Gibson on February 14, 1999 at 06:26:42:

```
> needs memo
> needs Fields
> needs ....blah-blah

> 1100 constant rptnumField \ ID number of my field
> 3 constant mcn \ Memo Pad category number
```

```
> create strbuffer 80 chars allot
> : WriteField
> strbuffer rptnumField Field>string
> openMemoDB
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> closeMemoDB
> beep
> ;
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> No matter what I input into the field, when I select my "Write" menu option, > which calls the "WriteField" word, all I get is a new memo written with one > funky character (looks kind of like a lowercase z). In addition to the new memo > being created, I also get the "beep" sound, so I'm pretty sure that the Memo Pad > words are working properly.

Here's the stack diagram from Allen Chen's *newmemo.txt*:

```
WriteNewMemoInCategory ( cat z-addr length -- )
```

It takes three parameters. You're only passing in two parameters:

```
mcn strbuffer WriteNewMemoInCategory
```

```
Try
: WriteField
  strbuffer rptnumField Field>string >r
  openMemoDB
  mcn strbuffer r> WriteNewMemoInCategory
  closeMemoDB
  beep
;
```

Field>string returns the length of the string on the stack. Here, I'm using >r to store that away until we need it for WriteNewMemoInCategory, where I use r> to retrieve it.

Let me know how it goes!

Neal

Re: I'm blocking on Field>string...

Posted by [Steve Gibson](#) on February 14, 1999 at 18:23:17:

In Reply to: *Re: I'm blocking on Field>string...* posted by Neal Bridges on February 14, 1999 at 11:56:58:

```
> > needs memo
> > needs Fields
```

```

> > needs ....blah-blah

> > 1100 constant rptnumField \ ID number of my field
> > 3 constant mcN \ Memo Pad category number

> > create strbuffer 80 chars allot

> > : WriteField
> > strbuffer rptnumField Field>string
> > openMemoDB
> > mcN strbuffer WriteNewMemoInCategory
> > closeMemoDB
> > beep
> > ;

> > No matter what I input into the field, when I select my "Write" menu option,
> > which calls the "WriteField" word, all I get is a new memo written with one
> > funky character (looks kind of like a lowercase z). In addition to the new
> > memo
> > being created, I also get the "beep" sound, so I'm pretty sure that the Memo
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> WriteNewMemoInCategory ( cat z-addr length -- )

> It takes three parameters. You're only passing in two parameters:

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> Try

>

: WriteField
>   strbuffer rptnumField Field>string >r
>   openMemoDB
>   mcN strbuffer r> WriteNewMemoInCategory
>   closeMemoDB
>   beep
> ;
>

> Field>string returns the length of the string on the stack. Here, I'm using
>r
> to store that away until we need it for WriteNewMemoInCategory, where I use r>
> to retrieve it.

> Let me know how it goes!

> Neal

```

Thanks for the help! Well, it works, almost... It writes the string to the newly created memo, but the string has extra garbage characters appended to the end of it. Interestingly, when I try to edit the garbage characters, the Palm crashes with a "DataMgr.c Line 4943, DmWriteCheck failed."

I know that the WriteNewMemoInCategory word wants a zstring passed to it, and the one I am trying to pass is apparently not one, but I'm not sure if this explains the results I'm getting. If so, is there a way to get the Field>string word to pass a zstring to the buffer rather than a regular string?

-Steve

Re: I'm blocking on Field>string...

Posted by [Neal Bridges](#) on February 14, 1999 at 18:34:17:

In Reply to: *Re: I'm blocking on Field>string...* posted by Steve Gibson on February 14, 1999 at 18:23:17:

> Thanks for the help! Well, it works, almost... It writes the string to the
> newly created memo, but the string has extra garbage characters appended to
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> end of it. Interestingly, when I try to edit the garbage characters, the Palm
> crashes with a "DataMgr.c Line 4943, DmWriteCheck failed."
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> the one I am trying to pass is apparently not one, but I'm not sure if this
> explains the results I'm getting. If so, is there a way to get the
Field>string
> word to pass a zstring to the buffer rather than a regular string?

A zstring is just a string of characters with a zero-byte at the end...

```
: WriteField
  strbuffer rptnumField Field>string dup >r
  strbuffer + 0 swap c! \ make it a zstring
  openMemoDB
  mcn strbuffer r> WriteNewMemoInCategory
  closeMemoDB
  beep
;
```

Try that. (I haven't tested it myself; I'm not at my main terminal at the moment and don't have Allen's *newmemo.txt* installed on my Palm yet).

If it gives you grief, try extending the length of the passed string to encompass the zero byte:

```
mcn strbuffer r> 1+ WriteNewMemoInCategory
```

Allen Chen would be better able to speak on how his word works internally, and whether or not it needs the zero-byte to be part of the length of the string; however, after you try the code above you'll have the answer.

Neal

Re: I'm blocking on Field>string...

Posted by [Steve Gibson](#) on February 15, 1999 at 23:33:56:

In Reply to: *Re: I'm blocking on Field>string...* posted by Neal Bridges on February 14, 1999 at 18:34:17:

> A zstring is just a string of characters with a zero-byte at the end...

>

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>   closeMemoDB
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> Allen Chen would be better able to speak on how his word works internally, and whether or not it needs the zero-byte to be part of the length of the string; however, after you try the code above you'll have the answer.

> Neal

Allen, Neal, it works! Thanks! One thing though, the strbuffer that I created doesn't seem to work for using in FindMemoInCategory or AppendCurrentMemo. For example if I follow up the above code (in the same word definition or in separate words -- I've tried both) I get a crash:

```
openMemoDB
mcN strbuffer FindMemoInCategory
closeMemoDB
```

```
openMemoDB
strbuffer AppendCurrentMemo
closeMemoDB
```

The crash I get is "MemoryMgr.c Line 3926, Invalid Handle"

I'm plugging away at it, trying to figure out why it is doing this, but thought

one of you guys might know off the bat.

Thanks again for all the help!

-Steve

Re: I'm blocking on Field>string...

Posted by [Neal Bridges](#) on February 16, 1999 at 00:29:14:

In Reply to: *Re: I'm blocking on Field>string...* posted by Steve Gibson on February 15, 1999 at 23:33:56:

> Allen, Neal, it works! Thanks! One thing though, the strbuffer that I created
> doesn't seem to work for using in FindMemoInCategory or AppendCurrentMemo.
> For
> example if I follow up the above code (in the same word definition or in
> separate words -- I've tried both) I get a crash:

> openMemoDB
> mcn strbuffer FindMemoInCategory
> closeMemoDB

> openMemoDB
> strbuffer AppendCurrentMemo
> closeMemoDB

> The crash I get is "MemoryMgr.c Line 3926, Invalid Handle"

> I'm plugging away at it, trying to figure out why it is doing this, but
> thought
> one of you guys might know off the bat.

Steve, this is caused by exactly the same problem you were having in your first word. Both of the words you are calling take more arguments on the stack than you are passing.

Have a look at the stack diagrams for the two words you're having trouble with (I snipped these lines from Allen's *newmemo.txt*):

```
FindMemoInCategory ( cat c-addr u -- success)
AppendCurrentMemo ( z-addr u -- )
```

When you pass your string to these words, you must pass both the string address (in your case, strbuffer) AND the length of the string (shown by a u in Allen's stack diagrams).

If you want to compute the length of a zero-byte delimited string, you can do it with this word:

```
: zlen ( z-addr -- len ) >abs StrLen ;
```

Using zlen, your first example becomes:

```
openMemoDB
mcn strbuffer dup zlen FindMemoInCategory
closeMemoDB
```

Neal

Re: I'm blocking on Field>string...

Posted by [Steve Gibson](#) on February 16, 1999 at 06:35:23:

In Reply to: *Re: I'm blocking on Field>string...* posted by Neal Bridges on February 16, 1999 at 00:29:14:

```
> Steve, this is caused by exactly the same problem you were having in your
> first word. Both of the words you are calling take more arguments on the
stack
> than you are passing.
```

Apologies! I figured it out late last night...what threw me off is that Allen's example in the library didn't pass a length to the AppendCurrentMemo...yet it still worked.

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> Have a look at the stack diagrams for the two words you're having trouble with
> (I snipped these lines from Allen's newmemo.txt):
```

```
>
FindMemoInCategory ( cat c-addr u -- success)
> AppendCurrentMemo ( z-addr u -- )
>
```

```
> When you pass your string to these words, you must pass both the string
address
```

```
> (in your case, strbuffer) AND the length of the string (shown by
a
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```

```
> If you want to compute the length of a zero-byte delimited string, you can do
it
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```

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> : zlen ( z-addr -- len ) >abs StrLen ;
```

```
> Using zlen, your first example becomes:
```

```
>
openMemoDB
> mcn strbuffer dup zlen FindMemoInCategory
> closeMemoDB
>
```

Awesome, thanks again, Neal!

Re: I'm blocking on Field>string...

Posted by [Allen Chen](#) on February 16, 1999 at 09:48:45:

In Reply to: *Re: I'm blocking on Field>string...* posted by Steve Gibson on February 16, 1999 at 06:35:23:

> Apologies! I figured it out late last night...what threw me off is that Allen's
> example in the library didn't pass a length to the AppendCurrentMemo...yet it
> still worked.

Actually, the example *did* pass both address and length to **AppendCurrentMemo**. My strings were defined as words that returns *both* the address and length, like this:

```
: string z" Yo dude!" ; ( -- z-addr len )
```

In your case, since you are using a string buffer (I assume it's dynamic, or there would be no point using a buffer), you need another variable to keep track of the size of the string at run-time. You could, of course, also use the **zlen** word to calculate the length. Note that for **zlen** to work, your string *must* terminate with a null byte.

-Allen

Re: I'm blocking on Field>string...

Posted by [Steve Gibson](#) on February 16, 1999 at 10:04:02:

In Reply to: *Re: I'm blocking on Field>string...* posted by Allen Chen on February 16, 1999 at 09:48:45:

> Actually, the example *did* pass both address and length to
> **AppendCurrentMemo**. My strings were defined as words that returns
> *both* the address and length, like this:
>

```
> : string z" Yo dude!" ; ( -- z-addr len  
> )
```

Ahh, I see. My mistake!

> In your case, since you are using a string buffer (I assume it's dynamic, or
> there would be no point using a buffer), you need another variable to keep

track
> of the size of the string at run-time. You could, of course, also use the
> **zlen** word to calculate the length. Note that for **zlen** to work,
> your string *must* terminate with a null byte.

Yes, I'm using the buffer because I'm planning to load various strings into it for appending to a memo. Since your `field>zstring` word also returns the length of the string, I am passing it to the `AppendCurrentMemo` from the return stack, the same way Neal demonstrated to me with the `WriteNewMemoInCategory` word. It was very cool to see 10 fields from my form get neatly dumped to a new memo.

Thanks guys...you are a tremendous resource!

-Steve

P.S. - Neal, I just sent in my registration to PilotGear. Can't wait to get the registered version to try making .PRC's!

Re: I'm blocking on `Field>string`...

Posted by [Neal Bridges](#) on February 16, 1999 at 11:26:18:

In Reply to: *Re: I'm blocking on `Field>string`...* posted by Steve Gibson on February 16, 1999 at 10:04:02:

> P.S. - Neal, I just sent in my registration to PilotGear. Can't wait to get the
> registered version to try making .PRC's!

Thanks, Steve!

Neal

Re: I'm blocking on `Field>string`...

Posted by [Allen Chen](#) on February 14, 1999 at 20:05:37:

In Reply to: *Re: I'm blocking on `Field>string`...* posted by Neal Bridges on February 14, 1999 at 18:34:17:

> Allen Chen would be better able to speak on how his word works internally, and
> whether or not it needs the zero-byte to be part of the length of the string;
> however, after you try the code above you'll have the answer.

I think the problem is this: Memopad data expects a null-terminating string to indicate the end of the record, even though the allocated memory chunk may be larger. If you don't have that byte of ZERO, then trying to edit that string in memopad will cause a crash. Now, Neal's `field>string` does NOT return a

zstring. So you must convert the result of *field>string* to a zstring before you can write it to memopad. So **after** you call *field>string*, just add a zero at the end of the string and leave the length as is. Or, use this (not tested):

```
needs fields
: field>zstring (z-addr fieldID -- len)
over >r field>string dup r> + 0 swap ! ;
```

Then you can use this instead of *field>string* and pass the result directly to *WriteNewMemoInCategory* or *AppendCurrentMemo*, etc.

As an aside, all the words in *newmemo.txt* works with the format produced by Neal's *zstring.txt*, i.e. the length value does **NOT** include the zero byte. For this reason, internally the write/append-memo routines will increment the length value by one so the zero byte will be written correctly. But you don't really need to worry about this, just make sure you convert your string to zstring before writing to memopad.

-Allen

Re: I'm blocking on Field>string...

Posted by [Allen Chen](#) on February 15, 1999 at 22:58:34:

In Reply to: *Re: I'm blocking on Field>string...* posted by Allen Chen on February 14, 1999 at 20:05:37:

I wrote
>

```
> needs fields
> : field>zstring (z-addr fieldID -- len)
> over >r field>string dup r> + 0 swap ! ;
>
```

Sorry, it should be c! instead of !. It may still work, but you'll get an extra byte of zero.

Allen

Re: I'm blocking on Field>string...

Posted by [Neal Bridges](#) on February 15, 1999 at 23:06:39:

In Reply to: *Re: I'm blocking on Field>string...* posted by Allen Chen on February 15, 1999 at 22:58:34:

> I wrote
> >

> > needs fields
> > : field>zstring (z-addr fieldID -- len)
> > over >r field>string dup r> + 0 swap ! ;
> >

> Sorry, it should be c! instead of !. It may still work, but you'll get an extra
> byte of zero.

Glad you caught that. If it were an odd address, the PalmOS ROM would generate a Fatal Exception.

Neal

Copying the interpreter to stand-alone apps?

Posted by [Allen Chen](#) on February 14, 1999 at 00:17:50:

Hi Neal, is this possible? Or the other way around: load your application into quartus, and recompile quartus so that next time it restarts it will contain the said application? I remember in some older systems where Forth also acts as the operating system, there was the INTERPRET word which searches the dictionary for the supplied string, find the execution token and execute it. It was feasible because you weren't expected to leave the forth environment. Just wondering if it's doable in Quartus.

This feature would be cool for, say, programmable self-extending calculator (using Forth!), 3rd-party GUI "shell" for Quartus, etc etc. This is still doable, I guess in some way, using *include* and *needs*, but alas the startup time would take too long for a good sized program.

Cheers,
Allen

Re: Copying the interpreter to stand-alone apps?

Posted by [Neal Bridges](#) on February 14, 1999 at 00:59:18:

In Reply to: *Copying the interpreter to stand-alone apps?* posted by Allen Chen on February 14, 1999 at 00:17:50:

> Hi Neal, is this possible? Or the other way around: load your application into
> quartus, and recompile quartus so that next time it restarts it will contain the
> said application? I remember in some older systems where Forth also acts as
> the operating system, there was the INTERPRET word which searches the dictionary
> for the supplied string, find the execution token and execute it. It was
> feasible because you weren't expected to leave the forth environment. Just
> wondering if it's doable in Quartus.

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> (using Forth!), 3rd-party GUI "shell" for Quartus, etc etc. This is still
> doable, I guess in some way, using *include* and *needs*, but alas
the
> startup time would take too long for a good sized program.

Quartus Forth is designed specifically as a compiler of stand-alone executables; the image in memory isn't meant to be turned back into a copy of Quartus Forth. I also doubt that you'd want to clamp the 40K Quartus Forth executable (and 50K workspace) onto another application just to have Quartus Forth's interpreter available.

Beyond that, creating a derivative version of Quartus Forth is prohibited by the Quartus Forth license; if it weren't prohibited, you could (excluding the technical considerations) conceivably re-generate Quartus Forth with a couple of extra words bolted on and call it a new product.

If you need a command language at run-time, establishing a simple interpreter for your own application should be fairly straightforward. You can use ACCEPT to read input strings, and parse them using Forth tools such as PARSE-WORD and PARSE; after that it's just name-matching and function dispatch.

Neal

New and updated files

Posted by [Neal Bridges](#) on February 12, 1999 at 21:07:36:

In the Quartus Forth file area:

FEL.txt: Floating-point exponents and logarithms, contributed by Michael Will
toolkit.txt: Updated with 0allot and several nDROP words

Neal

Tip: Printing Quartus Forth source using Word 97

Posted by [Neal Bridges](#) on February 12, 1999 at 18:33:48:

I've found that Quartus Forth source prints very nicely using Word 97 with the following settings:

3 columns on the page, lines between the columns, spacing 0.25"
Page margins: 0.5" left, right, top, and bottom
Text: Times New Roman 9 point

Each of the resulting columns is almost exactly the same width as the Palm screen using the normal font.

Neal

Quartus: a devil of a program

Posted by [Allen Chen](#) on February 12, 1999 at 16:09:31:

Just realized that those one's and zero's on the Quartus Icon (0110110110) becomes "666" in octal base. Cool eh?

- Allen "Yes I am really bored" Chen

Re: Quartus: a devil of a program

Posted by [Neal Bridges](#) on February 12, 1999 at 16:11:02:

In Reply to: *Quartus: a devil of a program* posted by Allen Chen on February 12, 1999 at 16:09:31:

> Just realized that those one's and zero's on the Quartus Icon (0110110110)
> becomes "666" in octal base. Cool eh?

Shh!

Neal

Re: Quartus: a devil of a program

Posted by [Rick Francis](#) on February 16, 1999 at 00:41:11:

In Reply to: *Re: Quartus: a devil of a program* posted by Neal Bridges on February 12, 1999 at 16:11:02:

> > Just realized that those one's and zero's on the Quartus Icon (0110110110)
> > becomes "666" in octal base. Cool eh?

> Shh!

> Neal

666 is my house number, has been for a dozen years -- and you wouldn't believe some of the reactions I get. I've begun telling the more credulous ones that you should always pay your exorcist on time, because if you don't, you get -- repossessed!

Rick

Re: Quartus: a devil of a program

Posted by [Neal Bridges](#) on February 16, 1999 at 12:39:32:

In Reply to: *Re: Quartus: a devil of a program* posted by Rick Francis on February 16, 1999 at 00:41:11:

> > > Just realized that those one's and zero's on the Quartus Icon (0110110110)
> > > becomes "666" in octal base. Cool eh?

> > Shh!

> > Neal

> 666 is my house number, has been for a dozen years -- and you wouldn't believe
> some of the reactions I get. I've begun telling the more credulous ones that
> you should always pay your exorcist on time, because if you don't, you get --
> repossessed!

I dub thee Rick "The Beast" Francis.

Neal

Re: Quartus: a devil of a program

Posted by [Rick Francis](#) on February 16, 1999 at 19:13:00:

In Reply to: *Re: Quartus: a devil of a program* posted by Neal Bridges on
February 16, 1999 at 12:39:32:

> I dub thee Rick "The Beast" Francis.

> Neal

Just so long as you don't link me to the original subject of the 666 reference,
who seems to have been the Roman emperor Nero. Sure, I play the violin, speak
a little Latin, but there are limits...

(QVARTVS PRAESTANT EST.)

Rick

250 Word Limt?

Posted by [Mike Will](#) on February 12, 1999 at 11:34:36:

Neal, I have a large app that's been working fine. I just patched in about 60
new words and now it won't compile (I get a crash with random bits on the
screen). The program still loads and runs fine in the interpreter. I'm probably
over the 250 word limit, and I'm using v.1.10R of Quartus. Any thoughts?

Also, is there a utility to count the current number of words?

Thanks,
Mike

Re: 250 Word Limt?

Posted by [Neal Bridges](#) on February 12, 1999 at 11:52:13:

In Reply to: *250 Word Limt?* posted by Mike Will on February 12, 1999 at 11:34:36:

> Neal, I have a large app that's been working fine. I just patched in about 60
> new words and now it won't compile (I get a crash with random bits on the
> screen). The program still loads and runs fine in the interpreter. I'm
probably
> over the 250 word limit, and I'm using v.1.10R of Quartus. Any thoughts?
> Also, is there a utility to count the current number of words?

Wow! Large app indeed. I'm sending you an interim update; let me know how it goes.

I'll be providing a word that counts the number of words in the dictionary -- that'll be an upper limit as the stand-alone generation process only extracts words needed by your application.

Neal

Re: 250 Word Limit?

Posted by [Mike Will](#) on February 12, 1999 at 12:18:03:

In Reply to: *Re: 250 Word Limt?* posted by Neal Bridges on February 12, 1999 at 11:52:13:

Yep, that was it. Compiles and runs fine now. Thanks a million.

> Wow! Large app indeed.

Yes. It's almost 20k, and coded quite efficiently, at that. The main computation is one of the most complex in all of organic chemistry (supercompressibility of a gas), and its source takes up almost a full memo. The rest is a field-based user interface and a lot of conditional logic. I'll send you a copy once I test it a bit more. I'm really pleased with its accuracy (5 places after many dozens of float operations). Oh, that reminds me, I'll email a copy of the exponents/logarithms words for the file area.

Mike

Re: 250 Word Limit?

Posted by [Neal Bridges](#) on February 12, 1999 at 12:32:43:

In Reply to: *Re: 250 Word Limit?* posted by Mike Will on February 12, 1999 at 12:18:03:

> Yep, that was it. Compiles and runs fine now. Thanks a million.

> > Wow! Large app indeed.

> Yes. It's almost 20k, and coded quite efficiently, at that. The main computation is one of the most complex in all of organic chemistry (supercompressibility of a gas), and its source takes up almost a full memo. The rest is a field-based user interface and a lot of conditional logic. I'll send you a copy once I test it a bit more. I'm really pleased with its accuracy (5 places after many dozens of float operations). Oh, that reminds me, I'll email a copy of the exponents/logarithms words for the file area.

That's good to hear -- the float words haven't been worked really hard before; I'm glad they're holding up.

I look forward to seeing it!

Neal

new memo.txt

Posted by [Allen Chen](#) on February 11, 1999 at 20:31:38:

Hi all. Here's a new version of the memo extension routines based on the original memo.txt in the file area. It appears to be bug free. If you discover any bugs or have any suggestions for improvement, please let me know.

Neal, remember a while back someone was complaining that the

`dir`

`word`

was crashing the system? In the course of debugging on my own `FindMemoInCategory` (which is based on `dir`), I've discovered that if you are going through all the records in memoDB, you need to test if a record has been recently deleted. Apparently a deleted record stays in the system until the next hotsync. Trying to access a deleted record's memory chunk will cause some strange behaviour on the pilot, most of the time it will crash. I am pretty sure this was the problem with `dir` as well, as memopad moves its deleted records to the end of the list, and that was when the crash was reported to have occurred if I remember it correctly. BTW, I've removed `dir` from the code, as it doesn't really have any practical use except as an example.

Anyway, here's the code. Since the

tags aren't working correctly, I

will try to post them without the tags.

-Allen

=====

\ memo 2/11/99 7:57 pm AC

needs core-ext
needs tools-ext
needs toolkit
needs zstrings
needs ids
needs DataMgr

15 constant categoryMask
(hex) 80 constant deleteMask

ID DATA ID memo
2variable _MemoDBR
: MemoDBR _MemoDBR 2@ ;
variable index
variable attrP
variable sSize
2variable sPtr

\ Support Routines

```
: NewMemo ( len -- ptr. )  
s>d index >abs MemoDBR  
( len. &index. DBR. ) DmNewRecord  
MemHandleLock ;  
  
: ReleaseCurrentMemo ( dirty -- err )  
index @ MemoDBR  
DmReleaseRecord ;  
  
: getCurrentMemoAttr ( -- attr )  
0. 0. attrP >abs index @ MemoDBR  
DmRecordInfo drop attrP @ ;  
  
: setCurrentMemoAttr ( attr -- err )  
attrP ! 0. attrP >abs index @  
MemoDBR DmSetRecordInfo ;  
  
: getCurrentMemoCategory  
( -- cat )  
getCurrentMemoAttr  
categoryMask and ;  
  
: setCurrentMemoCategory  
( cat -- )  
getCurrentMemoAttr  
categoryMask invert and or  
setCurrentMemoAttr drop ;  
  
: QueryMemo ( index -- handle. )  
MemoDBR DmQueryRecord ;
```

```

: GetCurrentMemo ( -- ptr. )
index @ QueryMemo MemHandleLock ;

: NumMemo ( -- n )
MemoDBR DmNumRecords ;

: CurrentMemoSize ( -- size )
index @ QueryMemo
MemHandleSize d>s ;

: CurrentMemoDeleted? ( -- del_flg )
GetCurrentMemoAttr deleteMask
and ;

: GrowCurrentMemo ( size -- ptr. )
CurrentMemoSize + s>d
index @ memoDBR DmResizeRecord
MemHandleLock ;

\ Main Access

: OpenMemoDB ( -- )
dmModeReadWrite memo DATA
DmOpenDatabaseByTypeCreator
2dup or 0= drop _MemoDBR 2! ;

: CloseMemoDB ( -- )
MemoDBR DmCloseDatabase drop ;

: WriteNewMemo ( z-addr len -- )
\ index = index of new memo
0 index ! 1+ dup NewMemo
2>r s>d rot >abs 0. 2r@
( length. &data. offset. DBR. )
DmWrite drop
2r> MemPtrUnlock drop
true ReleaseCurrentMemo drop ;

: WriteNewMemoInCategory
( cat z-addr length -- )
\ index = index of new memo
WriteNewMemo
setCurrentMemoCategory ;

: FindMemoInCategory
( cat c-add u -- success )
\ if success = 1, index is valid
sSize ! sPtr ! NumMemo 1- 0 do dup
i index !
GetCurrentMemoCategory =
CurrentMemoDeleted? 0= and if
GetCurrentMemo 2dup sSize @
s>d 2swap sPtr @ >abs
strNCompare 0= if
MemPtrUnlock drop

```

```
0 ReleaseCurrentMemo drop
unloop drop 1 exit
else MemPtrUnlock drop
0 ReleaseCurrentMemo drop
then
then
loop drop 0 ;

: AppendCurrentMemo ( z-addr u -- )
\ requires a valid "index"
dup >r 1+ s>d rot >abs
CurrentMemoSize 1- s>d
r> GrowCurrentMemo 2dup 2>r
DmWrite drop 2r>
MemPtrUnlock drop
true ReleaseCurrentMemo drop ;

0 [if]
: string1 z" hello world!" ;
: string2 z" abcdefg" ;
: test \ tests write in category
openMemoDB 6 string1
WriteNewMemoInCategory
closeMemoDB ;
: test1 \ tests find in category
openMemoDB
6 string1 FindMemoInCategory
closeMemoDB ;
: test2 \ tests appending memo
openMemoDB string2
appendcurrentmemo closeMemoDB ;
[then]
```

Re: new memo.txt

Posted by [Steve Gibson](#) on February 13, 1999 at 10:37:55:

In Reply to: *new memo.txt* posted by Allen Chen on February 11, 1999 at 20:31:38:

> Hi all. Here's a new version of the memo extension routines based on the
> original memo.txt in the file area. It appears to be bug free. If you
discover
> any bugs or have any suggestions for improvement, please let me know.

First, I want to say that the new memo.txt is really nice! Good job and thanks
for sharing it!

As far as improvements go:

Is there a way to specify a memo category by name rather than by number? If so,

it isn't clear to me how to do this. That would be a nice addition... Another nice feature would be the ability to create and name a NEW memo category.

I'm sure these are not trivial additions, but they would be really cool ones...

Another newbie-ish question:

Is there a way to embed a newline character in a z"whatever" string? For instance, if I want to append something to a memo, but have it appended on the following line instead of immediately after the last character, I'd like to have a newline char show up at the front end of the string I am appending. Or explicitly append a newline char by itself before sending the next string. Is this possible?

-Steve

Re: new memo.txt

Posted by [Allen Chen](#) on February 13, 1999 at 23:45:06:

In Reply to: *Re: new memo.txt* posted by Steve Gibson on February 13, 1999 at 10:37:55:

> First, I want to say that the new memo.txt is really nice! Good job and thanks
> for sharing it!

Thanks, and my pleasure.

> As far as improvements go:
> Is there a way to specify a memo category by name rather than by number? If so,
> it isn't clear to me how to do this. That would be a nice addition... Another
> nice feature would be the ability to create and name a NEW memo category.

I am already considering it. Although I'm quite busy these days so it may not be forth coming for a while. If someone wants to have a go, PalmOS provides a series of Categoryxxxxxx functions for managing a category list. But then you need to provide some wrapper for managing the list structure (using the Lstxxxxxx systrips) in Quartus before you can start using the category functions. You can see how it is done in C from the memopad example in the PalmOS3 SDK package.

> Is there a way to embed a newline character in a z"whatever" string? For
> instance, if I want to append something to a memo, but have it appended on the
> following line instead of immediately after the last character, I'd like to have
> a newline char show up at the front end of the string I am appending. Or
> explicitly append a newline char by itself before sending the next string. Is
> this possible?

In addition to Neal's posting, below is taken from my own project for doing the

same thing. It is sort of a conditionally redirected cr/type/emit extension. In my project, I needed to be able to "preview" the data on the screen before they are written into memopad, hence the reason for this round-about solution.

=====

```

\ output! 2/13/99 8:00pm AC
\
needs core-ext
needs zstrings
needs graphics
needs memo
\
\ new type: character array
\
: c-array ( chars "name" -- )
create chars allot
does> ( lndex addr -- addr )
swap chars + ;
\
\ some global variables
\
0 value redirect
1024 c-array mainBuf
0 value bufIndex
\
\ buffer i/o routines
\
\ initialize main buffer
\
: newBuf ( -- ) 0 to bufIndex ;
\
\ type extension
\ if redirect is true,
\ output to main buffer instead
\
: type! ( z-addr u -- )
redirect if
  bufIndex mainBuf swap dup >r
  1+ move r> bufIndex +
  to bufIndex
else type then ;
\
\ emit extension
\
: emit! ( c -- )
redirect if
  bufIndex mainBuf c!
  0 bufIndex 1+ mainBuf c!
  bufIndex 1+ to bufIndex
else emit then ;
\

```

```
\ linefeed and tab
\  
: cr! ( -- ) 10 emit! ;
: tab! ( -- ) 9 emit! ;
\  
\ Just in case you want to display
\ the stuff in the buffer
\  
: emitBuf ( -- )
bufIndex 0 ?do
    i mainBuf c@ dup 9 = if s"          " type
    else dup 10 = if cr else dup emit
    then then drop
loop ;
\  
\ Some examples
\ !!! Not tested!! But you get the idea.
\ If nothing is wrong, after you run test
\ and test1 you should get in your new memo:
\ Yo Dude!
\      Bye Dude!
\  
1 [if]
: string1 z" Yo Dude!" ;
: string2 z" Bye Dude!" ;
: test openMemoDB 0 string1
  WriteNewMemoInCategory
closeMemoDB ;
: test1
openMemoDB 0 string1
findMemoInCategory if
    newBuf
    cr! tab! string2 type!
    0 mainBuf bufIndex
    appendCurrentMemo
then closeMemoDB ;
[then]
```

Re: new memo.txt

Posted by [Neal Bridges](#) on February 13, 1999 at 12:10:53:

In Reply to: *Re: new memo.txt* posted by Steve Gibson on February 13, 1999 at 10:37:55:

> Is there a way to embed a newline character in a z"whatever" string? For
> instance, if I want to append something to a memo, but have it appended on the
> following line instead of immediately after the last character, I'd like to

have

> a newline char show up at the front end of the string I am appending. Or
> explicitly append a newline char by itself before sending the next string. Is
> this possible?

The Palm uses linefeeds rather than carriage-returns. I haven't tested this code, but it should send you in the right direction:

decimal

create LFdata

10 c, 0 c,

: LFstring LFdata 1 ;

: AppendLF LFstring AppendCurrentMemo ;

Neal

Re: new memo.txt

Posted by [Neal Bridges](#) on February 12, 1999 at 13:56:43:

In Reply to: *new memo.txt* posted by Allen Chen on February 11, 1999 at 20:31:38:

> Hi all. Here's a new version of the memo extension routines based on the
> original memo.txt in the file area. It appears to be bug free. If you
discover

> any bugs or have any suggestions for improvement, please let me know.

> Neal, remember a while back someone was complaining that the
dir

word

> was crashing the system? In the course of debugging on my own
> *FindMemoInCategory* (which is based on *dir*), I've discovered that
> if you are going through all the records in memoDB, you need to test if a
record
> has been recently deleted. Apparently a deleted record stays in the system
> until the next hotsync. Trying to access a deleted record's memory chunk will
> cause some strange behaviour on the pilot, most of the time it will crash. I
am

> pretty sure this was the problem with *dir* as well, as memopad moves its
> deleted records to the end of the list, and that was when the crash was
reported

> to have occurred if I remember it correctly. BTW, I've removed *dir* from
> the code, as it doesn't really have any practical use except as an example.

I had the same thought re: deleted records. *dir* was never intended as a production tool, just as a simple example of the words preceding. Glad you found the answer.

[code snipped]

This looks very good, Allen. Thanks.

Neal

Running from FLASH

Posted by [Paul J. Gilliam](#) on February 11, 1999 at 17:15:35:

Has anyone tried to put QForth in FLASH and run it from there?

How about applications (.prc) produced by QForth?

Re: Running from FLASH

Posted by [Neal Bridges](#) on February 11, 1999 at 21:36:57:

In Reply to: *Running from FLASH* posted by Paul J. Gilliam on February 11, 1999 at 17:15:35:

> Has anyone tried to put QForth in FLASH and run it from there?

> How about applications (.prc) produced by QForth?

Quartus Forth should run without any problem in flash ROM, as should any app (whether generated by Quartus Forth or not) that doesn't deliberately try to write to its own resource database.

I've had one positive report that yes, Quartus Forth operates fine from flash ROM; no negative reports.

Neal

Re: Running from FLASH

Posted by [Paul J. Gilliam](#) on February 11, 1999 at 21:59:59:

In Reply to: *Re: Running from FLASH* posted by Neal Bridges on February 11, 1999 at 21:36:57:

> > Has anyone tried to put QForth in FLASH and run it from there?

> > How about applications (.prc) produced by QForth?

> Quartus Forth should run without any problem in flash ROM, as should any app
> (whether generated by Quartus Forth or not) that doesn't deliberately try to
> write to its own resource database.

> I've had one positive report that yes, Quartus Forth operates fine from flash
> ROM; no negative reports.

> Neal

The next trick will be to move an application from ram into flash rom using the
recent flash routines posted here! My pilot/forth skills are not up this
(yet!) but maybe someone else????

--# Paul

Re: Running from FLASH

Posted by [Neal Bridges](#) on February 11, 1999 at 22:12:49:

In Reply to: *Re: Running from FLASH* posted by Paul J. Gilliam on February 11,
1999 at 21:59:59:

> The next trick will be to move an application from ram into flash rom using
the
> recent flash routines posted here! My pilot/forth skills are not up this
> (yet!) but maybe someone else????

There be dragons. I leave that to someone who doesn't mind sending their Palm
on a \$100 vacation to 3Com :)

Neal

Re: Running from FLASH

Posted by Paul J. Gilliam on February 11, 1999 at 21:56:55:

In Reply to: *Re: Running from FLASH* posted by Neal Bridges on February 11, 1999
at 21:36:57:

> > Has anyone tried to put QForth in FLASH and run it from there?
> > How about applications (.prc) produced by QForth?

> Quartus Forth should run without any problem in flash ROM, as should any app
> (whether generated by Quartus Forth or not) that doesn't deliberately try to

> write to its own resource database.

> I've had one positive report that yes, Quartus Forth operates fine from flash
> ROM; no negative reports.

> Neal

Make that 2 positive reports. I just got done trying it. I built the
__Hello.prc file with Quartus Forth running from flash ROM, hot-synced, loaded
__Hello.prc into flash ROM and ran it. Seemed to work just fine.

Changing an Application's Icon in Launcher III

Posted by [Daryl Lee](#) on February 11, 1999 at 16:09:18:

I use Launcher III as my Palm "shell", rather than Memory/App (or whatever they call it). I just discovered a strange behavior that maybe someone here can help me with.

When I first built my Handicap application, the icon wasn't exactly pretty. I've since cleaned it up and rebuilt the application, and the new icon shows up in the native Palm Application display, but the OLD icon is stuck in Launcher III. Does anyone have any idea how to remove it, without removing the application and associated data?

Daryl

Re: Changing an Application's Icon in Launcher III

Posted by [Neal Bridges](#) on February 11, 1999 at 16:15:41:

In Reply to: *Changing an Application's Icon in Launcher III* posted by Daryl Lee on February 11, 1999 at 16:09:18:

> I use Launcher III as my Palm "shell", rather than Memory/App (or whatever they
> call it). I just discovered a strange behavior that maybe someone here can
> help me with.

> When I first built my Handicap application, the icon wasn't exactly pretty.
> I've since cleaned it up and rebuilt the application, and the new icon shows
> up
> in the native Palm Application display, but the OLD icon is stuck in Launcher
> III. Does anyone have any idea how to remove it, without removing the
> application and associated data?

Daryl, in my experience performing a reset from the Launcher III menu will refresh all the icons.

Neal

Re: Changing an Application's Icon in Launcher III

Posted by [Daryl Lee](#) on February 12, 1999 at 10:36:21:

In Reply to: *Re: Changing an Application's Icon in Launcher III* posted by Neal Bridges on February 11, 1999 at 16:15:41:

> > I use Launcher III as my Palm "shell", rather than Memory/App (or whatever
> they
> > call it). I just discovered a strange behavior that maybe someone here can
> > help me with.

> > When I first built my Handicap application, the icon wasn't exactly
pretty.

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shows

> up

> > in the native Palm Application display, but the OLD icon is stuck in
Launcher

> > III. Does anyone have any idea how to remove it, without removing the
> > application and associated data?

> Daryl, in my experience performing a reset from the Launcher III menu will
> refresh all the icons.

I just did it. That was way too easy. Thanks.

Daryl

FLN, FX^Y, FX^N

Posted by [Mike Will](#) on February 11, 1999 at 14:24:26:

I had the need recently for an FX^Y function which in turn requires LN, so I extended my FEXP code posted earlier. I also added a simple FX^N which is faster and more accurate, but is restricted to integer exponents only. I've put everything into one file.

```

\ FE Float Exponents & Logarithms
\ words for float access (thanks, Neal)
: F> ( F: r -- -- r. ) Ftmp dup f! 2@ ;
: >F ( r. -- -- F: r ) Ftmp 2! Ftmp F@ ;
: @F ( F: r -- F: r -- r. ) fdup f> ;
: F1/X ( F: r -- F: r ) 1E0 FSWAP F/ ;

: (FEXP)   FDUP
           -0.1413161E-3 F*
           1.329882E-3 F+ FOVER F*
           -0.830136E-2 F+ FOVER F*
           0.41657347E-1 F+ FOVER F*
           -0.1666653E0 F+ FOVER F*
           0.5E0 F+ FOVER F*
           -1E0 F+ F*
           1E0 F+ F1/X ;

: FEXP ( F: r -- F: e^r )
  FDUP F0< ABS FABS
  FDUP 40E0 FSWAP F< ABORT" EXP overflow"
  FDUP 1.44269504E0 F*
  FDUP F>D DROP >R
  FLOOR 0.6931472E0 F* F- (FEXP)
  R> 65 + 32768 >F F*
  IF F1/X THEN ;

: FLN ( F: r -- F: lnr ) fdup f0= fdup f0<
  or abort" logarithm error"
  @f drop 127 and 65 - >r
  f> swap -128 and 65 or swap >f
  1e0 f- fdup
  -0.64535443E-02 f*
  0.36088496E-01 f+ fover f*
  -0.95329395E-01 f+ fover f*
  0.16765408E00 f+ fover f*
  -0.24073381E00 f+ fover f*
  0.33179904E00 f+ fover f*
  -0.49987414E00 f+ fover f*
  0.99999648E00 f+ f* r> 0 d>f
  0.6931472E00 f* f+
;

```

```
\ See, high school math is
\ useful after all:
: FX^Y ( F: x y -- F: x^y )
  fswap fln f* fexp ;

\ this one is faster, more accurate
\ for integer exponents
: FX^N ( F: r -- n -- F: r^n -- )
  dup 0= if drop fdrop 1e0
  else dup abs fdup
    1 ?do fover f* loop fswap fdrop
    0< if fl/x then
  then ;
```

The precision is pretty good:

```
pi^2:
9.8696044 (my HP48)
9.8695860 (FX^Y)
9.8695889 (FX^N)
```

Neal and I know all about MathLib, so maybe we can skip the flurry of threads arguing that one back and forth. I will gladly use MathLib whenever an interface is developed. Having said that, I still think there's use in a low-precision, built-in float package. Distributing, maintaining and explaining multiple files to my users is a hassle I'd like to avoid whenever possible.

Cheers
Mike

Re: FLN, FX^Y, FX^N

Posted by [Mike Will](#) on February 11, 1999 at 18:25:09:

In Reply to: *FLN, FX^Y, FX^N* posted by Mike Will on February 11, 1999 at 14:24:26:

Oops. Forgot to measure twice and cut once.
The code for FLN didn't work for 0Here's an update. No other changes.

```
: FLN ( F: r -- F: r )  fdup f0= fdup f0<
  or abort" logarithm error"
  fdup 1e0 f< if fl/x -1 else 0 then
  @f drop 127 and 65 - >r
  f> swap -128 and 65 or swap >f
  1e0 f- fdup
  -0.64535443E-02 f*
  0.36088496E-01 f+ fover f*
  -0.95329395E-01 f+ fover f*
  0.16765408E00 f+ fover f*
```

```
-0.24073381E00 f+ fover f*
0.33179904E00 f+ fover f*
-0.49987414E00 f+ fover f*
0.99999648E00 f+ f* r> 0 d>f
0.6931472E00 f* f+
if fnegate then
```

```
;
```

eg. 0.5e0 fln fs.
-0.69314720E0

Mike

Re: FLN, FX^Y, FX^N

Posted by [Neal Bridges](#) on February 11, 1999 at 14:51:47:

In Reply to: *FLN, FX^Y, FX^N* posted by Mike Will on February 11, 1999 at 14:24:26:

> I had the need recently for an FX^Y function which in turn requires LN, so I
> extended my FEXP code posted earlier. I also added a simple FX^N which is
> faster and more accurate, but is restricted to integer exponents only. I've
put
> everything into one file.

[code snipped]

This is good stuff, Mike. I'll post it in the File Area if you don't mind.

> Neal and I know all about MathLib, so maybe we can skip the flurry of threads
> arguing that one back and forth. I will gladly use MathLib whenever an
> interface is developed. Having said that, I still think there's use in a low-
> precision, built-in float package. Distributing, maintaining and explaining
> multiple files to my users is a hassle I'd like to avoid whenever possible.

To add a data point to the graph, there's a bignums Forth package available at
one of the archive sites -- arbitrary precision floating point. If your
calculations truly require high-precision, it might be worth looking into.
Numbers are stored in base 256.

One of the key reasons I built floating-point into the kernel is as a defense
against the floating-point bugs and incompatibilities that exist in the various
Palm OS ROM versions. Now, the daVinci appears to have no floating-point
support (though it might be hidden in there somewhere), so the routines in
Quartus Forth will be handy.

Neal

BigMath (was FLN, FX^Y, FX^N)

Posted by [Mike Will](#) on February 11, 1999 at 15:07:42:

In Reply to: Re: *FLN, FX^Y, FX^N* posted by Neal Bridges on February 11, 1999 at 14:51:47:

> This is good stuff, Mike. I'll post it in the File Area if you don't mind.

Of course.

> To add a data point to the graph, there's a bignums Forth package available at

> one of the archive sites -- arbitrary precision floating point. If your
> calculations truly require high-precision, it might be worth looking into.
> Numbers are stored in base 256.

Huh. That's funny. I got a bignums package working in Quartus back in December, but I seem to have lost it. I'll keep looking. Anyway, it wasn't very hard, just a couple of words to rename and some preprocessor stuff at the start (forgive my C parlance). If it's the same bignums I was using, however, it's integer only. I'd love to see a float bignums.

> One of the key reasons I built floating-point into the kernel is as a defense
> against the floating-point bugs and incompatibilities that exist in the
various

> Palm OS ROM versions. Now, the daVinci appears to have no floating-point
> support (though it might be hidden in there somewhere), so the routines in
> Quartus Forth will be handy.

I'm trying to get my hands on a daVinci (Quartus, Duco, daVinci, is there a Latin conspiracy here?) No luck so far, but I did notice that 3Com's prices have fallen recently. Maybe they're hearing footsteps.

Mike

Re: BigMath (was FLN, FX^Y, FX^N)

Posted by [Neal Bridges](#) on February 11, 1999 at 16:19:34:

In Reply to: *BigMath (was FLN, FX^Y, FX^N)* posted by Mike Will on February 11, 1999 at 15:07:42:

> I'm trying to get my hands on a daVinci (Quartus, Duco, daVinci, is there a
> Latin conspiracy here?) No luck so far, but I did notice that 3Com's prices
> have fallen recently. Maybe they're hearing footsteps.

The daVinci isn't being sold in Toronto anyplace I've looked. If you order from

Royal (Olivetti), they ship immediately -- mine arrived in less than 48 hours, without customs involvement. I assume it shipped from within Canada.

Neal

daVinci (was: BigMath)

Posted by [Mike Will](#) on February 11, 1999 at 16:49:00:

In Reply to: *Re: BigMath (was FLN, FX^Y, FX^N)* posted by Neal Bridges on February 11, 1999 at 16:19:34:

> The daVinci isn't being sold in Toronto anyplace I've looked. If you order from
> Royal (Olivetti), they ship immediately -- mine arrived in less than 48 hours,
> without customs involvement. I assume it shipped from within Canada.
> Neal

Ahhh, Olivetti. I wondered who was really behind this Royal stuff. I used to have one of their Quaderno micro-notebooks, beautiful machine. I left it at Laguardia two years ago. When I called back to ask if it had been found, the airport guy just laughed and said, "Jeez. You must be Canadian."
Thanks Neal.

Mike

Re: Palm Prices (was Bigmath)

Posted by [Carl Jacobsen](#) on February 11, 1999 at 15:27:55:

In Reply to: *BigMath (was FLN, FX^Y, FX^N)* posted by Mike Will on February 11, 1999 at 15:07:42:

> I'm trying to get my hands on a daVinci (Quartus, Duco, daVinci, is there a
> Latin conspiracy here?) No luck so far, but I did notice that 3Com's prices
> have fallen recently. Maybe they're hearing footsteps.

I think more like they're making footsteps... The general consensus seems to be that the prices on Palm III's have dropped in anticipation of the Palm IIIx, due to be announced soon (some say Feb 23rd) -- 4Mb of memory, better (more easily read) screen, OS3.1, and other bits -- at the same (MSRP) price point the III currently holds; to avoid turning this into a hardware rumor page, instead of a Quartus page, check with www.palmstation.com or the newsgroup comp.sys.palmtops.pilot if you want more details.

Supposedly there really is a Razor (Palm V) waiting in the wings, too...

-- Carl-who-could-use-double-the-memory

Suggestion : A Quartus Wiki ?

Posted by [Mark Andrew](#) on February 11, 1999 at 08:49:34:

A few days ago I downloaded the archives of this list. They are a real goldmine of information for us newbies, but slightly unwieldy as a reference work ;-)

This got me thinking. Neil is doing a terrific job answering our day to day questions, but he is obviously facing the dilemma whether he should spend his time hacking to make Quartus even better, or documenting what is already there.

One way out might be to start a Wiki. If you are not familiar with the concept have a look at the one at

<http://c2.com/cgi/wiki?FrontPage>

It is basically a 7 page perl script running as a cgi which creates a simple but powerful Web-based collaboration environment where you can edit and create pages. I have installed a few wikis myself already and its really simple. The problem is I am behind a firewall here, so it wouldn't be much good for you out there.

I would envisage a wiki which offers something for everyone, and that grows naturally (A bazaar rather than a cathedral). Not a replacement for systematic documentation, but a vehicle for everyone's contributions (musings, howtos, micro-tutorials whatever). Steven Donahue's Tutorial is great, but a wiki would offer a forum for people who would like to contribute but cannot (for some reason) contribute so much.

What do you think ?

Neil, would you want to host it, or somebody else out there with a good connection ? Like I said it takes only a few minutes to set up, so if we saw that it wasn't working no great investment would have been lost. On the other hand it could be a great learning resource for us all.

Just an idea

Mark

Re: Suggestion : A Quartus Wiki ?

Posted by [Neal Bridges](#) on February 11, 1999 at 09:02:16:

In Reply to: *Suggestion : A Quartus Wiki ?* posted by Mark Andrew on February 11, 1999 at 08:49:34:

> A few days ago I downloaded the archives of this list. They are a real goldmine
> of information for us newbies, but slightly unwieldy as a reference work ;-)

Periodically I fold the information generated by the discussion back into the docs. Another such folding is coming up.

> This got me thinking. Neil is doing a terrific job answering our day to day
> questions, but he is obviously facing the dilemma whether he should spend his
> time hacking to make Quartus even better, or documenting what is already
there.

It's not a dilemma; I've already accepted that I have to do both at the same time. :) New features aren't of much value without docs explaining how to use them.

> One way out might be to start a Wiki. If you are not familiar with the concept
> have a look at the one at

>
> <http://c2.com/cgi/wiki?FrontPage>

[wiki description snipped]

> What do you think ?

Looks interesting. One thing about the discussion format -- it does keep discussion threads together. I had a look at the above link, it seems more like a collection of discrete documents (akin to my File Area). It might be worth a try, though.

> Neil, would you want to host it, or somebody else out there with a good
> connection ? Like I said it takes only a few minutes to set up, so if we saw
> that it wasn't working no great investment would have been lost. On the other
> hand it could be a great learning resource for us all.

My current bandwidth costs are giving me reason to consider repatriating all or part of this site; I'd be pleased if somebody else could host it.

Neal

Manual update: Library documentation

Posted by [Neal Bridges](#) on February 10, 1999 at 21:57:47:

I've added a manual page documenting some of the words from the Quartus Forth library. Please suggest any words not present that you think would benefit from further description.

Thanks!

Neal

- [Library Documentation](#)

More about tables

Posted by [Neal Bridges](#) on February 10, 1999 at 19:41:16:

I've begun to explore tables in Quartus Forth. So far, so good -- in response to one of the earlier questions, you need to call `TblRowSetHeight` for each row.

Neal

Re: More about tables

Posted by [Michael Collas](#) on February 18, 1999 at 20:55:11:

In Reply to: *More about tables* posted by Neal Bridges on February 10, 1999 at 19:41:16:

> I've begun to explore tables in Quartus Forth. So far, so good -- in response
> to one of the earlier questions, you need to call `TblRowSetHeight` for each
row.

> Neal

Thanks - I've now got my own tables experiment working nicely. The key was to set the rows and columns usable AFTER using Showform. I had copied some of the ideas from 'Palm Programming: The Developers Guide' and it had seemed that in their demo code the form was only made visible after setting up the table. I can't see where they are setting up the row height, but I've experimented and found that it is certainly necessary.

Pointer: Reading source in messages from this forum

Posted by [Neal Bridges](#) on February 10, 1999 at 18:34:55:

If anyone finds source code (such as Allen Chen's MemoPad extensions) hard to read in this forum, it's because the text in within pre /pre tags has all the blank lines stripped out of it. I'm going to see what I can do to remedy that.

In the meantime, if you clip the code from the "post followup" window and remove the leading "> " from each source line, you'll get something a good deal more readable back.

Neal

more memopad routines (help!)

Posted by [Allen Chen](#) on February 10, 1999 at 18:21:20:

Hi Neal, below is my effort to extend *memo.txt* to access the memopad (for my project). Basically the few main words to access are:

openMemoDB: open the memopad database
closeMemoDB: close the memopad database
WriteNewMemo: write a new memo
WriteNewMemoInCategory: write a new memo in a category
FindMemoInCategory: find a memo in a category, updates index
AppendCurrentMemo: append the current memo (ref by index)

All other routines can also be accessed as long as the stack and variable argument requirement is observed. Currently, everything appears to be working except *appendCurrentMemo*. It keeps going into fatal exception when I try it. I've traced the problem to *CurrentMemoSize*. For some reason, sometimes it returns the right number, sometimes not. Very strange. I would appreciate if you or others can have a look at it. Could be something very trivial, but I can't see it.

The testing routings at the end assumes a category index of 6. You can change it to a category of your choosing.

Thanks,
Allen

```
\ memo 2/8/99 6:31 pm AC
needs core-ext
needs toolkit
needs zstrings
needs ids
needs DataMgr
```

15 constant categoryMask

```

ID DATA      ID memo
2variable _MemoDBR
: MemoDBR _MemoDBR 2@ ;
variable index
variable attrP
variable sSize
2variable sPtr
create buffer 40 allot

: OpenMemoDB ( -- )
  dmModeReadWrite memo DATA DmOpenDatabaseByTypeCreator
  2dup or 0= throw _MemoDBR 2! ;

: CloseMemoDB ( -- )
  MemoDBR DmCloseDatabase throw ;

: NewMemo ( len -- ptr. )
  s>d index >abs MemoDBR
  ( len. &index. DBR. ) DmNewRecord
  MemHandleLock ;

: ReleaseCurrentMemo ( dirty -- err )
  index @ MemoDBR
  DmReleaseRecord ;

: WriteNewMemo ( z-addr len -- )
  0 index ! 1+ dup NewMemo
  2>r s>d rot >abs 0. 2r@
  ( length. &data. offset. DBR. )
  DmWrite throw
  2r> MemPtrUnlock throw
  true ReleaseCurrentMemo throw ;

: getCurrentMemoAttr ( -- attr )
  0. 0. attrP >abs index @ MemoDBR
  DmRecordInfo throw attrP @ ;

: setCurrentMemoAttr ( attr -- err )
  attrP ! 0. attrP >abs index @
  MemoDBR DmSetRecordInfo ;

: getCurrentMemoCategory
( -- cat )
getCurrentMemoAttr
categoryMask and ;

: setCurrentMemoCategory
( cat -- err )
getCurrentMemoAttr
categoryMask invert and or
setCurrentMemoAttr ;

: WriteNewMemoInCategory

```

```
( cat z-addr length -- )
WriteNewMemo
setCurrentMemoCategory ;

: QueryMemo ( index -- handle. )
MemoDBR DmQueryRecord ;

: GetCurrentMemo ( -- ptr. )
index @ QueryMemo MemHandleLock ;

: NumMemo ( -- n )
MemoDBR DmNumRecords ;

: FindMemoInCategory
( cat c-add u -- err)
\ expects memoDBR
\ returns index if err is 1
sSize ! sPtr ! NumMemo 1- 0 ?do dup
    i index !
    getCurrentMemoCategory = if
    GetCurrentMemo 2dup sSize @
    s>d 2swap sPtr @ >abs
    strNCompare 0= if
        MemPtrUnlock drop
        0 ReleaseCurrentMemo throw
    unloop drop 1 exit
else MemPtrUnlock drop then
then
loop drop 0 ;

: CurrentMemoSize ( -- size )
index @ QueryMemo
MemHandleSize d>s ;

: GrowCurrentMemo ( size -- ptr. )
CurrentMemoSize + s>d
index @ memoDBR DmResizeRecord MemHandleLock ;

: appendCurrentMemo ( z-addr u -- )
dup >r 1+ s>d rot >abs
CurrentMemoSize 1- s>d
r> GrowCurrentMemo dup 2>r
DmWrite throw 2r>
MemPtrUnlock throw
true ReleaseCurrentMemo throw
;

: string1 z" Hello World!" ;
: string2 z" Bye World!" ;

\ tests writing memo in a category

: test openMemoDB 6 string1
WriteNewMemoInCategory
closeMemoDB ;
```

```
\ tests finding that memo
```

```
: test1 openMemoDB  
6 string1 FindMemoInCategory  
closeMemoDB ;
```

```
\ tests appending that memo
```

```
: test2 openMemoDB string2 appendcurrentmemo closeMemoDB  
;
```

Re: more memopad routines (help!)

Posted by [Neal Bridges](#) on February 10, 1999 at 18:29:49:

In Reply to: *more memopad routines (help!)* posted by Allen Chen on February 10, 1999 at 18:21:20:

> Hi Neal, below is my effort to extend *memo.txt* to access the memopad
(for
> my project). Basically the few main words to access are:

[code snipped]

This is good stuff, Allen. I can't see anything wrong either, at a glance.
I'll keep looking.

When the value is wrong, is it consistently wrong by the same amount?

Neal

Re: more memopad routines (help!)

Posted by [Allen Chen](#) on February 10, 1999 at 19:16:50:

In Reply to: *Re: more memopad routines (help!)* posted by Neal Bridges on
February 10, 1999 at 18:29:49:

> When the value is wrong, is it consistently wrong by the same amount?

Yes and no. In a particular Quartus session, when the value is wrong, it's
always wrong by the same number regardless of how many times you tried. When
you start another session, it may be a different number though.

Allen

Re: more memopad routines (help!)

Posted by [Neal Bridges](#) on February 10, 1999 at 19:39:26:

In Reply to: *Re: more memopad routines (help!)* posted by Allen Chen on February 10, 1999 at 19:16:50:

> > When the value is wrong, is it consistently wrong by the same amount?
> Yes and no. In a particular Quartus session, when the value is wrong, it's
> always wrong by the same number regardless of how many times you tried. When
> you start another session, it may be a different number though.

Very strange. How much is it off by, generally?

Neal

Re: more memopad routines (help!)

Posted by [Allen Chen](#) on February 10, 1999 at 19:48:48:

In Reply to: *Re: more memopad routines (help!)* posted by Neal Bridges on February 10, 1999 at 19:39:26:

> Very strange. How much is it off by, generally?
Seems pretty random. Are you able to reproduce the crash?

Allen

Re: more memopad routines (help!)

Posted by [Neal Bridges](#) on February 10, 1999 at 20:25:10:

In Reply to: *Re: more memopad routines (help!)* posted by Allen Chen on February 10, 1999 at 19:48:48:

> > Very strange. How much is it off by, generally?
> Seems pretty random. Are you able to reproduce the crash?
I'm getting fine results from CurrentMemoSize. A problem I see --
r> GrowCurrentMemo dup 2>r

From examining your code, it looks like GrowCurrentMemo returns a handle

(two cells); therefor, don't you want to do a 2DUP there, instead of a DUP?

Neal

Re: more memopad routines (help!)

Posted by [Allen Chen](#) on February 10, 1999 at 20:57:29:

In Reply to: *Re: more memopad routines (help!)* posted by Neal Bridges on February 10, 1999 at 20:25:10:

> I'm getting fine results from CurrentMemoSize. A problem I see --

> r> GrowCurrentMemo dup 2>r

> From examining your code, it looks like GrowCurrentMemo returns a handle
> (two cells); therefor, don't you want to do a 2DUP there, instead of a DUP?

Ha I knew it was something simple. Thanks Neal, now everything works fine. I did, however, experienced the strange behaviour I described. Even after the correction, the append action didn't work the first time. I tried it again and everything worked just perfectly. Did I forget to set some attribute flags or something?

BTW, the code can certainly use some cleaning and optimizing. I will look into it when I have some time.

Allen

Re: more memopad routines (help!)

Posted by [Neal Bridges](#) on February 10, 1999 at 21:08:18:

In Reply to: *Re: more memopad routines (help!)* posted by Allen Chen on February 10, 1999 at 20:57:29:

> > I'm getting fine results from CurrentMemoSize. A problem I see --

> > r> GrowCurrentMemo dup 2>r

> > From examining your code, it looks like GrowCurrentMemo returns a handle
> > (two cells); therefor, don't you want to do a 2DUP there, instead of a DUP?

> Ha I knew it was something simple. Thanks Neal, now everything works fine. I
> did, however, experienced the strange behaviour I described. Even after the
> correction, the append action didn't work the first time. I tried it again
and

> everything worked just perfectly. Did I forget to set some attribute flags or
> something?

My best guess is that the failed DmWrite (because of the error) was crashing while the Memo database was open for write, so the various pointers weren't saved properly.

> BTW, the code can certainly use some cleaning and optimizing. I will look into
> it when I have some time.

I look forward to seeing it.

Neal

New version of the Tutorial available

Posted by [Neal Bridges](#) on February 10, 1999 at 16:53:23:

Tutorial-v1.02.zip is now available in the Quartus Forth File Area. Thanks again to Steven Donahue for his ongoing efforts!

Neal

- [File Area](#)

Re: New version of the Tutorial available

Posted by [Christian W. Althausen](#) on February 11, 1999 at 14:04:52:

In Reply to: *New version of the Tutorial available* posted by Neal Bridges on February 10, 1999 at 16:53:23:

> Tutorial-v1.02.zip is now available in the Quartus Forth File Area. Thanks
> again to Steven Donahue for his ongoing efforts!

> Neal

The Menu Silk should work in interpreted mode using Quartus Evaluation version ?

Tanks,

chris

Re: New version of the Tutorial available

Posted by [Neal Bridges](#) on February 11, 1999 at 14:15:27:

In Reply to: *Re: New version of the Tutorial available* posted by Christian W. Althausen on February 11, 1999 at 14:04:52:

> > Tutorial-v1.02.zip is now available in the Quartus Forth File Area. Thanks
> > again to Steven Donahue for his ongoing efforts!

> > Neal

> The Menu Silk should work in interpreted mode using Quartus Evaluation version
> ?

You can certainly use externally-defined Menu resources with the evaluation version. The Quartus Forth evaluation version is identical to the registered version, with the exception of the stand-alone generation words.

Neal

Tables

Posted by [joe waldner](#) on February 10, 1999 at 13:05:12:

Does anyone have any good examples of the programming needed to show and use tables on the palmIII?

Re: Tables

Posted by [Michael Collas](#) on February 10, 1999 at 20:27:54:

In Reply to: *Tables* posted by joe waldner on February 10, 1999 at 13:05:12:

> Does anyone have any good examples of the programming needed to show and use
> tables on the palmIII?

I've got a fairly complete example of the kind of programming required, but it might not be a good example, given that I haven't been able to get it to work yet. I've been meaning to send a copy to Neal Bridges, but I'm about half a planet away from my normal computer at the moment, so I haven't been able to find a computer which I can hot-sync to and also send mail from. I'm working on it.

For what it's worth, the test program I have written seems to set the table up OK before showing the form containing the table, but fails at some time when I show the form - the table rows all suddenly get switched from usable to unusable.

Michael Collas

Re: Tables

Posted by [Neal Bridges](#) on February 10, 1999 at 20:47:48:

In Reply to: *Re: Tables* posted by Michael Collas on February 10, 1999 at 20:27:54:

> > Does anyone have any good examples of the programming needed to show and use
> > tables on the palmIII?

> I've got a fairly complete example of the kind of programming required, but it
> might not be a good example, given that I haven't been able to get it to work
> yet. I've been meaning to send a copy to Neal Bridges, but I'm about half a
> planet away from my normal computer at the moment, so I haven't been able to
> find a computer which I can hot-sync to and also send mail from. I'm working
> on it.

> For what it's worth, the test program I have written seems to set the table up
> OK before showing the form containing the table, but fails at some time when I
> show the form - the table rows all suddenly get switched from usable to
> unusable.

So far, in my testing, I use ShowForm to display the form, then set the rows and
columns to usable, and then call TblDrawTable.

Neal

Re: Tables

Posted by [Neal Bridges](#) on February 10, 1999 at 16:34:54:

In Reply to: *Tables* posted by joe waldner on February 10, 1999 at 13:05:12:

> Does anyone have any good examples of the programming needed to show and use
> tables on the palmIII?

Tables are a difficult feature of the Palm III, in any language. For the
moment, I suggest you have a look at the online version of the Palm programming
book (available at 3Com's DevZone); it has a section on tables. On my list of
things to do is working through a simple table example, to be sure there's
nothing I need to do within the kernel to facilitate them.

Neal

dots

Posted by [joe waldner](#) on February 10, 1999 at 12:59:34:

I am sort of used to dots showing the depth of the stack, is there a way I can get that on the palmIII?

Re: dots

Posted by [Neal Bridges](#) on February 10, 1999 at 16:16:52:

In Reply to: *dots* posted by joe waldner on February 10, 1999 at 12:59:34:

> I am sort of used to dots showing the depth of the stack, is there a way I can
> get that on the palmIII?

Dots where, Joe?

Neal

Re: dots

Posted by [Joe Waldner](#) on February 10, 1999 at 16:39:18:

In Reply to: *Re: dots* posted by Neal Bridges on February 10, 1999 at 16:16:52:

> > I am sort of used to dots showing the depth of the stack, is there a way I
can
> > get that on the palmIII?

> Dots where, Joe?

> Neal

sorry, they are dots after ok on a cr, they are an option on poly-forth.

Re: dots

Posted by [Neal Bridges](#) on February 10, 1999 at 16:43:07:

In Reply to: *Re: dots* posted by Joe Waldner on February 10, 1999 at 16:39:18:

> > > I am sort of used to dots showing the depth of the stack, is there a way I
> can
> > > get that on the palmIII?

> > Dots where, Joe?

> > Neal

> sorry, they are dots after ok on a cr, they are an option on poly-forth.
Easily added. I'll add it to my list.

Neal

Re: dots

Posted by Joe Waldner on February 10, 1999 at 16:45:18:

In Reply to: *Re: dots* posted by Neal Bridges on February 10, 1999 at 16:43:07:

> > > > I am sort of used to dots showing the depth of the stack, is there a way I

> > can

> > > > get that on the palmIII?

> > > Dots where, Joe?

> > > Neal

> > sorry, they are dots after ok on a cr, they are an option on poly-forth.

> Easily added. I'll add it to my list.

> Neal

thank-you Neal

I'd rather have a "prompt-hook" than a dots feature. (nt)

Posted by [Tony Sanders](#) on February 10, 1999 at 17:38:19:

In Reply to: *Re: dots* posted by Joe Waldner on February 10, 1999 at 16:45:18:

nt = no text

Re: I'd rather have a "prompt-hook" than a dots feature.

Posted by [Neal Bridges](#) on February 10, 1999 at 18:17:30:

In Reply to: *I'd rather have a "prompt-hook" than a dots feature. (nt)* posted by Tony Sanders on February 10, 1999 at 17:38:19:

That's what I have planned.

Neal

Puzzled by regs.txt

Posted by [mark andrew](#) on February 10, 1999 at 11:15:08:

Hi,

I was looking at regs.txt today and cannot understand what the dup and the drop are doing in getregs. Can someone enlighten me ?

Thanks in advance

Mark

Re: Puzzled by regs.txt

Posted by [Neal Bridges](#) on February 10, 1999 at 12:38:26:

In Reply to: *Puzzled by regs.txt* posted by mark andrew on February 10, 1999 at 11:15:08:

> Hi,

> I was looking at regs.txt today and cannot understand what the dup and the drop

> are doing in getregs. Can someone enlighten me ?

> Thanks in advance

code getregs

] dup [

 ffff sp -) .l movem>

] drop [

end-code

The top of the stack in Quartus Forth is held in a register. The first DUP spills the cache register into memory; then the MOVEM> copies all the registers to the top of the in-memory stack. DROP then loads the first in-memory stack item back into the cache register.

If I didn't use the DUP and DROP, the registers would appear on the stack under the top stack item, and you'd get this effect:

```
5 .S 1: 5 ok
getregs .S 65: regs... 5 ok
```

Neal

DaVinci Palmtop

Posted by [Mike Will](#) on February 10, 1999 at 09:48:17:

Interesting little machine. Their website is flashy, but almost totally devoid of technical specs. I see the display is 160x160 and the maximum RAM is 2Meg. Is it Dragonball-based?

They'll probably do quite well with it because Royal seems to have a distribution network comparable to 3Com's. I see their organizers everywhere in North America, but this is the first programmable model I've seen.

I assume you own one, Neal. Do you like it?

regards,

Mike

Re: DaVinci Palmtop

Posted by [Neal Bridges](#) on February 10, 1999 at 12:31:37:

In Reply to: *DaVinci Palmtop* posted by Mike Will on February 10, 1999 at 09:48:17:

> Interesting little machine. Their website is flashy, but almost totally devoid
> of technical specs. I see the display is 160x160 and the maximum RAM is 2Meg.
> Is it Dragonball-based?
> They'll probably do quite well with it because Royal seems to have a
> distribution network comparable to 3Com's. I see their organizers everywhere
> in
> North America, but this is the first programmable model I've seen.

> I assume you own one, Neal. Do you like it?

I do own one. It's inexpensive and rugged; it looks like it is manufactured a touch more cheaply than the Palm III (e.g. the cover on the sync port isn't

spring-loaded, but rather has to be completely removed and set aside before you can put the unit in the provided cradle).

Three coloured styluses are provided; there's a slot for a stylus on the right side of the unit. The slot either holds a stylus so securely it has to be forced out, or so loosely that it falls out when you tip the unit.

The daVinci is EZ-DragonBall based. The screen is 160x160, with an extra silkscreen strip across the top. The unit holds a CR2032 "watch" battery as a backup at battery-change time. There's a flip-cover (magnetically secured) that protects the screen; it has the 'daVinci script' handwriting instructions permanently inscribed on its inside surface. The cover flips all the way back around to the rear of the unit, and cannot be removed.

It has seven hardware buttons: up, down, left, right, find, time, and on.

From what I know of it, the daVinci ROM is pretty much a subset of the Palm OS ROM.

The desktop synchronization software is in its infancy, as are the on-board apps; the SDK does not yet exist, and though I've heard of a daVinci Pro model (the screen will be 160x240 pixels, with 2 megs RAM on-board), it has yet to appear on the market.

Neal

Newbie's syntax questions

Posted by [Philippe de Rochembeau](#) on February 09, 1999 at 18:41:51:

I have got two questions regarding the include files entitled 'input' and 'ids':

First, why is the IF in the file called input between brackets?

```
1 [IF]
: string s" default" ; 40 allot etc.
```

Second, in ids, what is the purpose of 'postpone', '2literal', and 'immediate'? I could not find the first two words in "Beginning Forth".

```
: [ID] (ID) postpone 2literal ;
immediate
```

Many thanks.

Philippe de Rochembeau

Re: Newbie's syntax questions

Posted by [Neal Bridges](#) on February 09, 1999 at 20:08:00:

In Reply to: *Newbie's syntax questions* posted by Philippe de Rochambeau on February 09, 1999 at 18:41:51:

> I have got two questions regarding the include files entitled 'input' and 'ids':

> First, why is the IF in the file called input between brackets?

> 1 [IF]

> : string s" default" ; 40 allot etc.

[IF] [ELSE] and [THEN] have the same function as do #if #endif structures in C programs -- they control whether or not a section of code is compiled. They're defined in the TOOLS EXT section of the ISO/ANSI Standard.

> Second, in ids, what is the purpose of 'postpone', '2literal', and 'immediate'?

> I could not find the first two words in "Beginning Forth".

> : [ID] (ID) postpone 2literal ;

> immediate

There's a lot of information in the next few paragraphs, so read carefully:

POSTPONE compiles code that later will perform the compilation action of the following the POSTPONE. In this case, the word [ID] when executed later will perform (ID), and then perform 2LITERAL.

2LITERAL is a word which, when encountered during compilation, compiles the two cells currently on top of the stack into the current word. Its counterpart, LITERAL, does the same thing but with one cell only.

IMMEDIATE flags the most recently defined word (in this case, [ID]) so that when it's encountered during compilation, it executes instead of being compiled.

The practical upshot of this is that [ID] will have special meaning when encountered during compilation; it'll read the next four-character sequence from the input line (using (ID)) and then compile it (using 2LITERAL) into the current word.

The actions of all these words is defined in the ISO/ANSI Forth Standard, freely available from the Online Resources page of the Quartus Forth manual. If you haven't downloaded a copy yet, I recommend that you do. It's a handy reference.

Neal

Re: Newbie's syntax questions

Posted by [Philippe de Rochambeau](#) on February 10, 1999 at 02:39:41:

In Reply to: *Re: Newbie's syntax questions* posted by Neal Bridges on February 09, 1999 at 20:08:00:

Thank you for the information on the postpone, 2literal, and immediate words.

The ANSI document you mention is written in a technical jargon which is difficult to understand, and provides no examples of the words it describes, which is not very helpful when learning the meaning of the words.

Philippe de Rochambeau

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Re: Newbie's syntax questions (stupid html tags!!) try again, ignore previous

Posted by [Allen Chen](#) on February 10, 1999 at 14:16:22:

In Reply to: *Re: Newbie's syntax questions* posted by Philippe de Rochambeau on February 10, 1999 at 02:39:41:

> Thank you for the information on the postpone, 2literal, and immediate words.
> The ANSI document you mention is written in a technical jargon which is
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I find the best way to read the standard is to get yourself familiarized with some of the basic concepts of Forth as defined by the standard. Those are defined at the beginning of the standard. Then the word descriptions in the glossary will be easier to understand.

For example, every forth word behaves differently in compilation mode (initiated by the colon symbol) or in run-time mode. If you think of a word definition as being a set of assembly instructions, the default compilation behaviour (the compilation semantics) is to insert these instructions (or a reference to them) in the the current word being compiled. During run-time (the run-time semantics), these instructions will then be executed. So the word's "compilation semantics", if not specifically stated by the standard, is to "append it's run-time semantics to the current definition", a common phrase in the standard. One of the greatest power of Forth is to be able to control the behaviours of any word you defined in both "modes". Thus Forth is in a sense a truely extendable language.

Some words have an "immediate" attribute, which means that their compilation semantics is to *excute* its run-time semantics. All this just means that during compilation, *instead* of appending the instructions into the current definition, the instructions are executed right away. Many of these words can only be used during compilation. If so, the standard will say that the behaviour of the word during interpretation state (anything you do outside the colon definition) is ambiguous or undefined. You can make any word "immediate" by using the "immediate" word after the colon definition. For example, if I define a word

```
: [dup] dup ; immedate
```

So instading of dopping the top of stack during run-time, it does it right away during compilation. Like this:

```
3 ok          \ put 3 on the stack
.s <1> 3 ok
: test [dup] ; \ during definition of "test", the action of dup is *executed*
.s <2> 3 3 ok  \ stack now shows the dup'ed number
test ok
.s <2> 3 3 ok  \ stack is still the same

(*** Neal, I got <2> 3 -13006 ok instead on Quartus, is there something wrong?)
```

as you can see, the word "test" have nothing inside and does nothing during execution.

Now, you can "postpone" the action of the immediate word during compilation. I.e. make the immediate word compile its runtime semantics instead of executing it during compilation. Like,

```
: test1 postpone [dup] ;      \ now "dup" is being compiled again
3 .s <1> 3 ok                  \ put 3 on the stack
test1 .s <2> 3 3 ok            \ now "test1" is the same as the original "dup"

(**** Neal, this part works as it should on Quartus)
```

It gets interesting (and useful) when you postpone immediate words in a definition and then make the new definition immediate again. This way, you can extend or combine the actions of the original immediate words during compilation to suit your needs. This is commonly used when you want to add new compilation commands. A good example is the case..endcase module which is basically an extension of if..then structure. A simpler one to understand would be Wil Baden's "condthens.txt" module. Note that:

```
: thens
  begin ?dup while postpone then repeat ; immediate
```

What is being "postponed" is the immediate action of "then" whose compilation function is to resolve the previous "if" or "else" during compilation, among other things. The word "thens" will basically add as many "then" as needed at the end of a nested if..else..then structure during compilation. Try to analyze the case..endcase module and see if you can figure out what it's doing.

While you are doing this, remember that "if" or "then" also have their own *run-time* semantics, that of comparing numbers on the stack, set branching jumps, continuing execution, etc. They will be taken care of automatically in this convoluted "patching" of compilation semantics since the the compilation semantics themselves, in addition to setting up the resolving nests during compilation, will also utlimately append their run-time behaviour into the definition.

Hope this helps. This immediate/postpone stuff ranks one of the top most confusing concepts in Forth, right up there with create/does>. After you get the compilation/run-time behaviour concept down, though, it will "click" in and it's smooth sailing from there.

And people say RPN on a few stacks is what makes Forth difficult to understand! :)

-Allen

Re: Newbie's syntax questions (stupid html tags!!) try again, ignore previous

Posted by [Neal Bridges](#) on February 10, 1999 at 16:24:04:

In Reply to: *Re: Newbie's syntax questions (stupid html tags!!) try again, ignore previous* posted by Allen Chen on February 10, 1999 at 14:16:22:

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> (** Neal, I got <2> 3 -13006 ok instead on Quartus, is there something wrong?)

Definitely something wrong, but Quartus Forth isn't broken. When you execute [dup] during the compilation of test, you're assuming : doesn't leave anything on the stack. In Quartus Forth, it does -- a *colon-sys*, one cell by default, two if you're using *safe.txt*.

So your second <2> 3 3 result doesn't look right to me; likely you'd see <2> 3 -something instead.

Here's another example that might clarify:

: words-now! words ; immediate

: test words-now! ;

Neal

Re: Newbie's syntax questions (stupid html tags!!) try again, ignore previous

Posted by [Allen Chen](#) on February 10, 1999 at 18:00:44:

In Reply to: *Re: Newbie's syntax questions (stupid html tags!!) try again, ignore previous* posted by Neal Bridges on February 10, 1999 at 16:24:04:

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> on the stack. In Quartus Forth, it does -- a colon-sys, one cell by  
> default, two if you're using safe.txt.
```

You are right, of course. Forgot that the stack is still be used by many compile words. It was a bad example to play around. Here's a better example to try:

```
: hi-now ." Yo dude!" ; immediate [enter] ok  
: test 3 dup hi-now ; [enter] Yo dude! ok  
test [enter] ok  
.s [enter] <2> 3 3 ok  
: test1 postpone hi-now ; [enter] ok  
test1 [enter] Yo dude! ok
```

So the moral of the story is, despite my comments at the end of the last post, one still has to watch those stack operations! :)

-Allen

Re: Newbie's syntax questions (stupid html tags!!) try again, ignore previous

Posted by [Philippe de Rochembeau](#) on February 10, 1999 at 16:42:37:

In Reply to: *Re: Newbie's syntax questions (stupid html tags!!) try again, ignore previous* posted by Neal Bridges on February 10, 1999 at 16:24:04:

First of all, thank you Allen for writing this enlightening tutorial on immediate and postpone.

When I do

```
: [dup] dup ; immediate  
3  
: test [dup] ;
```

in WinFor32, I get an "Error : stack changed" message and an empty stack. Why is

that?

Philippe de Rochambeau

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Re: Newbie's syntax questions (stupid html tags!!) try again, ignore previous

Posted by [Neal Bridges](#) on February 10, 1999 at 16:47:03:

In Reply to: *Re: Newbie's syntax questions (stupid html tags!!) try again, ignore previous* posted by Philippe de Rochambeau on February 10, 1999 at 16:42:37:

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```
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```

That particular example is something that will respond in strange ways on most Forth systems. It's not a good example to study if your goal is a better understanding of immediacy.

What's happening specifically in Win32Forth is that [dup], being an immediate word, is changing the stack-depth during the compilation of a word; the error checking mechanism in Win32Forth (similar to what *safe.txt* provides in Quartus Forth) is detecting the change and complaining about it.

Neal

Re: Newbie's syntax questions

Posted by [Allen Chen](#) on February 10, 1999 at 14:13:00:

In Reply to: *Re: Newbie's syntax questions* posted by Philippe de Rochambeau on February 10, 1999 at 02:39:41:

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And people say RPN on a few stacks is what makes Forth difficult to understand! :)

-Allen

Re: Newbie's syntax questions

Posted by [Neal Bridges](#) on February 10, 1999 at 12:18:33:

In Reply to: *Re: Newbie's syntax questions* posted by Philippe de Rochambeau on February 10, 1999 at 02:39:41:

> Thank you for the information on the postpone, 2literal, and immediate words.

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> difficult to understand, and provides no examples of the words it describes,
> which is not very helpful when learning the meaning of the words.

I agree that the Standard is somewhat difficult as a starting-point. Good to have on-hand, though.

Neal

Newbie's frustrations!

Posted by [Barry Ekstrand](#) on February 09, 1999 at 19:45:34:

In Reply to: *Newbie's syntax questions* posted by Philippe de Rochambeau on February 09, 1999 at 18:41:51:

I have been trying to decipher the ANS Forth documentation, various tutorials for different versions of Forth, etc. in order to begin the gentle art of Forth

programming. At this point I'm avoiding the Palm GUI / Systraps, I just want to start with some very basic programs.

My initial goal is to be able to take input from grafitti, both for strings and numeric input, assign to constants or variables, perform calculations on the numeric values, and output to the screen. I can do this in BASIC, so I figure it can't be THAT tough in Forth - but so far I'm batting zero. I can use the ACCEPT word to take input, but as far as I can tell it goes into a buffer and I can't figure out how to put it into a variable. Would anyone be kind enough to show code to do the following: declare a string variable, length of 10 characters, get input from graffiti for the string, assigning it to the string variable, then print it to the screen? Similarly, can you show code for a numeric variable? My hangup is figuring how to assign it to the variables.

I do have a copy of Starting Forth on the way, but I'm anxious to achieve SOMETHING now! Thanks for your help.

Barry Ekstrand

Re: Newbie's frustrations!

Posted by [Neal Bridges](#) on February 09, 1999 at 20:12:08:

In Reply to: *Newbie's frustrations!* posted by Barry Ekstrand on February 09, 1999 at 19:45:34:

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> numeric variable? My hangup is figuring how to assign it to the variables.

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> SOMETHING now! Thanks for your help.
```

No problem. Here's a snippet for string input:

```
create string 10 chars allot
: go
  string 10 accept
  ." You typed: "
  string swap type cr
;
```

Here's a snippet for numeric input:

```
decimal
```

```
create input 20 chars allot
: input# ( -- n)
  input 20 accept >r
  0. input r> >number 2drop drop ;
: go
  cr ." enter 1st # " input#
  cr ." enter 2nd # " input#
  cr 2dup . ." * " . ." = " * . cr
;
```

Neal

Re: Newbie's frustrations - THANK YOU!

Posted by [Barry Ekstrand](#) on February 10, 1999 at 17:44:56:

In Reply to: *Re: Newbie's frustrations!* posted by Neal Bridges on February 09, 1999 at 20:12:08:

Neal,

Thank you for your kind assistance. I have to say, the support you and others are offering to us Forth-know-nothings really is appreciated, and is what keeps me coming back to trying to figure this stuff out. Hopefully I won't wear out my welcome with these basic questions, and hopefully better documentation will enable me to avoid asking so often, but I do want to thank all for the support that has been shown.

Regards,

Barry

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> : go

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> ." You typed: "

> string swap type cr

> ;

>

> Here's a snippet for numeric input:

>

> decimal

```
> create input 20 chars allot
>
> : input# ( -- n)
>   input 20 accept >r
>   0. input r> >number 2drop drop ;
>
> : go
>   cr ." enter 1st # " input#
>   cr ." enter 2nd # " input#
>   cr 2dup . ." *" . ." =" * . cr
> ;
>
> Neal
```

Re: Newbie's frustrations - THANK YOU!

Posted by [William Tanksley](#) on February 10, 1999 at 21:17:43:

In Reply to: *Re: Newbie's frustrations - THANK YOU!* posted by Barry Ekstrand on February 10, 1999 at 17:44:56:

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> Neal,
```

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> me coming back to trying to figure this stuff out. Hopefully I won't wear out
> my welcome with these basic questions, and hopefully better documentation will
> enable me to avoid asking so often, but I do want to thank all for the support
> that has been shown.

Neal is offering truly amazing support. As soon as I write a Quartus application, or even anything less trivial than a buggy zero-delimited sum function, I'm going to register. This is a good app, but more importantly it's well supported.

However, IMHO, the more newbie questions I answer the better I feel. It's been quite a while since us Forthers have been able to answer newbie questions -- for a long time, the only newbies to Forth have been brought up through commercial training programs (often at Forth,Inc.) rather than community learning. I suspect that Quartus is one of the nicer things that's happened to Forth in quite a while.

```
> Regards,
```

```
> Barry
```

```
-Billy
```

Re: Newbie's syntax questions

Posted by [Carl Jacobsen](#) on February 09, 1999 at 19:38:01:

In Reply to: *Newbie's syntax questions* posted by Philippe de Rochambeau on February 09, 1999 at 18:41:51:

```
> First, why is the IF in the file called input between brackets?
>
> 1 [IF]
> : string s" default" ; 40 allot etc.
```

IF and [IF] are different words. It's taken me to get used to the idea, that if Forth, essentially, there is no special punctuation; everything is just a word. So the brackets don't *modify* "IF", they are just part of the name of a different word ("[IF]"). That said, the words [IF] and [THEN] (and [ELSE]) are a sort of compile-time conditional facility. The code between [IF] and [THEN] only gets compiled if the word on top of the stack is non-zero. If you've had any experience with C, the set of:

```
condition [IF] ... [ELSE] ... [THEN]
```

work just like:

```
#if condition
...
#else
...
#endif
```

```
> Second, in ids, what is the purpose of 'postpone', '2literal', and
'imate'?
>
> : [ID] (ID) postpone 2literal ;
> imate
```

2literal effectively sucks in a cell pair at compile time, to disgorge same at execution time. postpone and imate have to do with controlling compilation-time vs. run-time behavior, but I'll leave the actual explanation in the more capable hands of Neal, et. al.

I'd also highly recommend grabbing a copy of the DPANS94 document available in the File Area -- it explains all the ANS Forth words in gory detail. (Actually, I've found it extremely informative reading so far; I've seen few other languages that offer such concise and precise definitions of what each of their reserved words do).

-- Carl

Compilation words

Posted by [Tony Sanders](#) on February 10, 1999 at 18:08:34:

In Reply to: *Re: Newbie's syntax questions* posted by Carl Jacobsen on February 09, 1999 at 19:38:01:

```
> > Second, in ids, what is the purpose of 'postpone', '2literal', and
> 'immediate'?
> >
> > : [ID] (ID) postpone 2literal ;
> > immediate
```

Thanks to Carl for a good description of these.

Anytime you see words like POSTPONE or IMMEDIATE that means that the word you are looking at is probably a "Compilation word". That means that it's purpose is to modify/enhance the operation of the complier. Compilation words are one of Forth's strenths and after a bit of playing around with them they are a lot easier to understand.

The goal of [ID] is to compile an ID number into the current definition and for efficency we want to do that at compile time rather than at run-time.

Square brackets are a visual que to the programmer that something is going to happen **at compile time**. They reason Square brackets are used is because forth has two words that are used to switch in and out of the compiler, they are [and]. The are used like so:
: work [BASE >register3 + ...] ... ;
Just like in the [ID] case where [ID] is executed at compile time so is the code above inside the square brackets.

One common use of compilation words is to add new types of control stuctures such as the ;then word recently discussed here:

```
: ;then postpone exit postpone then ; immediate
```

Whenever you see ;then the programmer could also just have written "exit then" but the ;then is more visually appealing and it can also hide some of the internals of how something is done (in this usage ;then is very much like a "macro").

New RsrcEdit version!

Posted by [Carl Jacobsen](#) on February 09, 1999 at 17:48:40:

Rick Francis posted about this yesterday as a followup on the "TealPaint->Bitmap" thread, but I figured some people might miss it (as I did at first), being that far down on the forum:

There's a new version of RsrcEdit up on the Individeo website,

that adds two cool things: bitmap editing, and import of bitmap images from TealPaint! Yay :-)

If you already saw the other posting, my apologies for causing you to think there might be a NEW new version :-)

-- Carl

Re: New RsrcEdit version!

Posted by [Rick Francis](#) on February 10, 1999 at 13:51:13:

In Reply to: *New RsrcEdit version!* posted by Carl Jacobsen on February 09, 1999 at 17:48:40:

> Rick Francis posted about this yesterday as a followup on the
> "TealPaint->Bitmap" thread, but I figured some people might
> miss it (as I did at first), being that far down on the forum:

Carl, thanks for bumping it up. After posting it occurred to me that, with the number of people trying out the Quartus/RsrcEdit combination, I ought to have started a new thread. Haven't had that much time to play with RsrcEdit, but it's clear that the last couple of releases represent real headway in terms of features, usability and, especially, robustness.

Rick

Re: New RsrcEdit version!

Posted by [Daryl Lee](#) on February 11, 1999 at 13:30:23:

In Reply to: *Re: New RsrcEdit version!* posted by Rick Francis on February 10, 1999 at 13:51:13:

Okay, so I spent two weeks on another bit of throw-away code! I'm going to get the new RscEdit version right away, because my solution left w-a-a-a-a-y too much to be desired.

Daryl

Some FLASH i/o routines

Posted by [Real Ouellet](#) on February 09, 1999 at 15:03:51:

Hello Neal,

Here are some FLASH words that might be useful to some of us. Neal: i'm fairly new to FORTH, so be gentle with the code... constructive criticisms are welcome! If you see anything bad, don't hesitate to change things.

===

Message to anybody who uses those: BE CAREFUL!

Nobody but you is going to be responsible if you fry you Pilot OS! The code provided here provides a minimum amount of protection but one never knows what actual hardware can do. It works very well on `_my_ PalmPilot PRO` with a 2 MB extension & PalmIII OS.

Be sure to check that the "flash-is-present" returns TRUE before doing anything else.

Usage:

The FLASH absolute addresses that do not overlap the PALM-III OS lie between 10D40000. and 10E00000.

To write the data word 1234 (hexa) at address 10de0000., just do "hex 1234 10de0000. !!f".

The ONLY way to erase data is with chunks of 64K (sectors). When you erase one word, you erase the whole 64K sector in one swoop. For example, to erase the 64K sector starting at address 10de0000. just do "hex 10de0000. !!fse" (Flase-Sector-Erase)...

AGAIN: YOU CAN DESTROY YOUR PALMPILOT ROM WITH THIS CODE. USE AT YOUR OWN RISK.

This code is based on excellent work done by Till Harbaum, which you can find there:

<http://www.ibr.cs.tu-bs.de/~harbaum/pilot/flashy.html>

I strongly recommend you get & study the FLASH chip datasheets.

Have fun... :)

Real

=====

```
\ flashio
needs double
hex
```

```
fffff304. 2constant IMR
fffff110. 2constant CSA0
10c00000. 2constant FLASH
```

```

2variable irq-save
2variable ftgt
2variable fdata

: 2and rot and rot rot and swap ;
: 2or rot or rot rot or swap ;

: c@f FLASH d+ c@a ;
: c!f FLASH d+ c!a ;
: @f FLASH d+ @a ;
: !f FLASH d+ !a ;

: flash-open ( -- )
hex IMR 2@a irq-save 2!
00ffffff. IMR 2!a
CSA0 2@a ffffffff7.
2and CSA0 2!a ;

: flash-close ( -- )
irq-save 2@ IMR 2!a
CSA0 2@a 8. 2or CSA0 2!a ;

: flash-cmd ( d -- )
0aa aaa. !f 055 554. !f aaa. !f ;

: flash-check ( a. -- flag )
2dup 10d40000. d< if
2drop false
else 10e00000. d< if
true
else false then then ;

: flash-is-present ( -- flag )
flash-open 090 flash-cmd
1. c@f 1 = if
2. @f 02249 = if
true
else false then
else false then
0f0 0. c!f flash-close ;

: f-data-toggle ( -- flag )
ftgt 2@ @a 040 and
ftgt 2@ @a 040 and = ;

: f-timeout ( -- flag )
ftgt 2@ @a 020 and 020 = ;

: f-erased ( -- flag )
ftgt 2@ @a 080 and 080 = ;

```

```
: !!f ( a. d -- )
3 enough? ftgt 2! fdata !
ftgt 2@ flash-check if
ftgt 2@ @a fdata @ <> if
flash-open
0a0 flash-cmd fdata @ ftgt 2@ !a
begin f-data-toggle f-timeout or
until f-data-toggle 0=
flash-close if -15 throw then
then
else -9 throw then ;

: !!fse ( a. -- )
2 enough? ftgt 2!
ftgt 2@ flash-check if
flash-open 080 flash-cmd
0aa aaa. !f 055 554. !f
030 ftgt 2@ !a
begin f-erased f-timeout or until
f-erased 0=
flash-close if -15 throw then
else -9 throw then ;
```

Re: Some FLASH i/o routines -- CAUTION!

Posted by [Neal Bridges](#) on February 09, 1999 at 15:13:59:

In Reply to: *Some FLASH i/o routines* posted by Real Ouellet on February 09, 1999 at 15:03:51:

Let me say, please be very very very careful with this sort of activity. If you toast your Flash ROM, your machine will need a \$100 round-trip to 3Com.

I'd hate to see any "Quartus Forth Ate My Palm III" messages :)

> Hello Neal,

> Here are some FLASH words that might be useful to some of us. Neal: i'm fairly

> new to FORTH, so be gentle with the code... constructive criticisms are welcome!

> If you see anything bad, don't hesitate to change things.

> ===

> Message to anybody who uses those: BE CAREFUL!

> Nobody but you is going to be responsible if you fry you Pilot OS! The code

```
> provided here provides a minimum amount of protection but one never knows what
> actual hardware can do. It works very well on _my_ PalmPilot PRO with a 2 MB
> extension & PalmIII OS.

> Be sure to check that the "flash-is-present" returns TRUE before doing
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> word, you erase the whole 64K sector in one swoop. For example, to erase the
> 64K sector starting at address 10de0000. just do "hex 10de0000. !!fse"
> (Flase-Sector-Erase)...

> AGAIN: YOU CAN DESTROY YOUR PALMPILOT ROM WITH THIS CODE. USE AT YOUR OWN
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> This code is based on excellent work done by Till Harbaum, which you can find
> there:

> http://www.ibr.cs.tu-bs.de/~harbaum/pilot/flashy.html

> I strongly recommend you get & study the FLASH chip datasheets.

> Have fun... :)

> Real

>
> =====

> \ flashio
> needs double
> hex
>
> fffff304. 2constant IMR
> fffff110. 2constant CSA0
> 10c00000. 2constant FLASH
>
> 2variable irq-save
> 2variable ftgt
> 2variable fdata
>
> : 2and rot and rot rot and swap ;
> : 2or rot or rot rot or swap ;
>
> : c@f FLASH d+ c@a ;
> : c!f FLASH d+ c!a ;
> : @f FLASH d+ @a ;
```

```

> : !f FLASH d+ !a ;
>
> : flash-open ( -- )
> hex IMR 2@a irq-save 2!
> 00ffffff. IMR 2!a
> CSA0 2@a ffffffff7.
> 2and CSA0 2!a ;
>
> : flash-close ( -- )
> irq-save 2@ IMR 2!a
> CSA0 2@a 8. 2or CSA0 2!a ;
>
> : flash-cmd ( d -- )
> 0aa aaa. !f 055 554. !f aaa. !f ;
>
> : flash-check ( a. -- flag )
> 2dup 10d40000. d< if
> 2drop false
> else 10e00000. d< if
> true
> else false then then ;
>
> : flash-is-present ( -- flag )
> flash-open 090 flash-cmd
> 1. c@f 1 = if
> 2. @f 02249 = if
> true
> else false then
> else false then
> 0f0 0. c!f flash-close ;
>
> : f-data-toggle ( -- flag )
> ftgt 2@ @a 040 and
> ftgt 2@ @a 040 and = ;
>
> : f-timeout ( -- flag )
> ftgt 2@ @a 020 and 020 = ;
>
> : f-erased ( -- flag )
> ftgt 2@ @a 080 and 080 = ;
>
> : !!f ( a. d -- )
> 3 enough? ftgt 2! fdata !
> ftgt 2@ flash-check if
> ftgt 2@ @a fdata @ <> if
> flash-open
> 0a0 flash-cmd fdata @ ftgt 2@ !a
> begin f-data-toggle f-timeout or
> until f-data-toggle 0=
> flash-close if -15 throw then
> then
> else -9 throw then ;

```

```
>  
> : !!fse ( a. -- )  
> 2 enough? ftgt 2!  
> ftgt 2@ flash-check if  
> flash-open 080 flash-cmd  
> 0aa aaa. !f 055 554. !f  
> 030 ftgt 2@ !a  
> begin f-erased f-timeout or until  
> f-erased 0=  
> flash-close if -15 throw then  
> else -9 throw then ;  
>  
>  
>  
>
```

Re: Some FLASH i/o routines -- now in the File Area.

Posted by [Neal Bridges](#) on February 09, 1999 at 16:57:25:

In Reply to: *Re: Some FLASH i/o routines -- CAUTION!* posted by Neal Bridges on February 09, 1999 at 15:13:59:

I've posted Real's code in the Quartus Forth File Area.

- [File Area](#)

Re: Some FLASH i/o routines -- now in the File Area.

Posted by [Real Ouellet](#) on February 09, 1999 at 17:38:04:

In Reply to: *Re: Some FLASH i/o routines -- now in the File Area.* posted by Neal Bridges on February 09, 1999 at 16:57:25:

Neal,

The description of the "!!f" should read "(d a. --)" instead of "(a. d --)"

The example i gave in my previous post were correct. It is just the comment in the source file that is reversed.

Real

Re: Some FLASH i/o routines -- now in the File Area.

Posted by [Neal Bridges](#) on February 09, 1999 at 20:44:47:

In Reply to: *Re: Some FLASH i/o routines -- now in the File Area.* posted by Real Ouellet on February 09, 1999 at 17:38:04:

> The description of the "!!f" should read "(d a. --)" instead of "(a. d --)"

> The example i gave in my previous post were correct. It is just the comment in

> the source file that is reversed.

Fixed the copy in the File Area.

Neal

Quartus Discussion Forum messages from before February 9, 1999

[Return to the Quartus Discussion Forum](#)

Changing a field resource attributes

Posted by [Steven Donahue](#) on February 08, 1999 at 23:08:47:

One of the Palm OS System Calls allows one to change the attributes of a field. Specifically, I want to set the "editable" attribute to true, insert some text, and then change it back to false.

The FldSetAttributes (&attrP. &fld. --) word handles this functionality. I have seen a type definition for the FieldAttrType in the Palm OS documentation, but how is this data structure represented in Forth?

Where should I go from here?

BTW, I'm leaving for vacation early in the morning, so I may not get the answer to this until I return...

Steve

Re: Changing a field resource attributes

Posted by [Neal Bridges](#) on February 08, 1999 at 23:31:27:

In Reply to: *Changing a field resource attributes* posted by Steven Donahue on February 08, 1999 at 23:08:47:

> One of the Palm OS System Calls allows one to change the attributes of a
> field. Specifically, I want to set the "editable" attribute to true, insert
> some text, and then change it back to false.

> The FldSetAttributes (&attrP. &fld. --) word handles this functionality.
> I have seen a type definition for the FieldAttrType in the Palm OS
> documentation, but how is this data structure represented in Forth?

> Where should I go from here?

First I'd suggest that that's an odd sort of thing to do -- it's not going to be obvious to the user that the field is no longer editable.

Having said that, the `FieldAttrType` is documented in `field.h` (in the `incs/UI` directory of the 3Com SDK materials). It's a bitfield 15 bits wide (that's what all the `:1` and `:2` notations indicate); you can fit that into a simple 16-bit-wide Forth variable.

Neal

Re: Changing a field resource attributes

Posted by [Neal Bridges](#) on February 08, 1999 at 23:41:03:

In Reply to: *Re: Changing a field resource attributes* posted by Neal Bridges on February 08, 1999 at 23:31:27:

> > One of the Palm OS System Calls allows one to change the attributes of a
> > field. Specifically, I want to set the "editable" attribute to true,
insert
> > some text, and then change it back to false.

Reading this again it occurs to me you may simply want to update on-screen text.

For that, I suggest using a label, rather than a field.

Neal

Fields per Form limit ?

Posted by [Mike Will](#) on February 08, 1999 at 19:18:19:

Does anyone know if there is a mysterious 16 field per form limit? I can't seem to access a 17th field, in fact, all hell breaks loose resulting in an "Event Queue Full" fatal exception. Do we need to worry about handles or something? (I'm using `Fields.txt`)
Thanks
Mike

Re: Fields per Form limit ?

Posted by [Neal Bridges](#) on February 08, 1999 at 19:22:49:

In Reply to: *Fields per Form limit ?* posted by Mike Will on February 08, 1999 at 19:18:19:

> Does anyone know if there is a mysterious 16 field per form limit?
> I can't seem to access a 17th field, in fact, all hell breaks loose resulting
> in an "Event Queue Full" fatal exception. Do we need to worry about handles or
> something? (I'm using Fields.txt)

Interesting. There's no such limit built into the Quartus Forth, or the library code; if it's a real limit, it's imposed by the Palm OS.

Neal

Re: Fields per Form limit ?

Posted by [Neal Bridges](#) on February 08, 1999 at 19:32:48:

In Reply to: *Re: Fields per Form limit ?* posted by Neal Bridges on February 08, 1999 at 19:22:49:

> > Does anyone know if there is a mysterious 16 field per form limit?
> > I can't seem to access a 17th field, in fact, all hell breaks loose resulting
> > in an "Event Queue Full" fatal exception. Do we need to worry about handles
> > or
> > something? (I'm using Fields.txt)

> Interesting. There's no such limit built into the Quartus Forth, or the library
> code; if it's a real limit, it's imposed by the Palm OS.

Found something -- it's at the link below. If I'm right, you're filling all your fields with data at once, without handling events as part of the process --

understandable behaviour, but apparently it leads to the problem you're seeing.

I'll look at Fields.txt and see if I can take up the slack on that side.

Thanks for the heads up.

Neal

- [Event Queue Full \(from DejaNews\)](#)

Re: Fields per Form limit ?

Posted by [Mike Will](#) on February 08, 1999 at 19:43:00:

In Reply to: *Re: Fields per Form limit ?* posted by Neal Bridges on February 08, 1999 at 19:32:48:

> Found something -- it's at the link below. If I'm right, you're filling all
> your fields with data at once, without handling events as part of the
process

--

> understandable behaviour, but apparently it leads to the problem you're
seeing.

> I'll look at Fields.txt and see if I can take up the slack on that side.

> Thanks for the heads up.

> Neal

Neal, I should be paying you a consulting fee. Thanks very much for the
pointer, it appears I'm up against the exact same problem. I've spent the
afternoon scanning Neil Rhodes' book and the only reference I found was on
p.119

"Be careful with FldXXX events... as they can overflow the event queue if
they are too numerous".

Wow. This Palm OS is like digging for cookies in a jar full of mousetraps.
cheers

Mike

Re: Fields per Form limit ?

Posted by [Neal Bridges](#) on February 08, 1999 at 20:15:47:

In Reply to: *Re: Fields per Form limit ?* posted by Mike Will on February 08,
1999 at 19:43:00:

> Neal, I should be paying you a consulting fee. Thanks very much for the
> pointer, it appears I'm up against the exact same problem. I've spent the
> afternoon scanning Neil Rhodes' book and the only reference I found was on

> p.119
> "Be careful with FldXXX events... as they can overflow the event queue
if
> they are too numerous".
> Wow. This Palm OS is like digging for cookies in a jar full of mousetraps.

Mike, I just emailed you a new Fields.txt. Let me know if it resolves the
problem.

Thanks,
Neal

Re: Fields per Form limit ?

Posted by [Mike Will](#) on February 08, 1999 at 21:06:01:

In Reply to: *Re: Fields per Form limit ?* posted by Neal Bridges on February
08, 1999 at 20:15:47:

> Mike, I just emailed you a new Fields.txt. Let me know if it resolves the
> problem.

> Thanks,
> Neal

Yes, works perfectly Neal, thanks again. The problem cropped up when I was
filling a form full of fields all at once on initialize (silly me). I find
that
if I do 8 fields, then do a FlushQueue, I can load the final 9 without
trouble
as well.

Mike

Basic Forth docs for beginners

Posted by [Barry Ekstrand](#) on February 07, 1999 at 23:21:59:

I've noticed a few postings from others that appear to be like me, trying to
learn the basics of the Forth language as we delve into Quartus. Having made
a
trip to a couple of computer / book stores in Houston, I came up very empty
in
finding ANY reference, let alone a good one. I did find a source that carries
the first edition of Starting Forth by Brodie (the 2nd edition is listed as

out
of print by Amazon.com, with no listing for the 1st edition at all), which is supposed to be one of the best for us newbies. The company is Mountain View Press and is run by Glen Haydon, who apparently has been an active supporter of Forth for a long time.

His website is: www.theforthsource.com. In the catalog section you can find Starting Forth listed for \$25 plus tax and shipping (comes to \$30 total).

Glen
doesn't take credit cards, so you need to send an order to him at:
Mountain View Press
Route 2, Box 429
La Honda, CA 94020
(650) 747-0760

This info may be well known to long-time Forth enthusiasts, but it was welcome news to me. I sent my order yesterday and am anxiously awaiting the book, hopeful that it will fill in some of the gaps I have.

Just wanting to pass on this info to any other beginners that also have been searching for a good beginner reference.

Barry Ekstrand

Re: Basic Forth docs for beginners (ignore my previous post)

Posted by [Allen Chen](#) on February 08, 1999 at 01:09:59:

In Reply to: *Basic Forth docs for beginners* posted by Barry Ekstrand on February 07, 1999 at 23:21:59:

> This info may be well known to long-time Forth enthusiasts, but it was welcome
> news to me. I sent my order yesterday and am anxiously awaiting the book,
> hopeful that it will fill in some of the gaps I have.

> Just wanting to pass on this info to any other beginners that also have been
> searching for a good beginner reference.

Hmmm part of my previous post got eaten up by some html tags. Here goes again.

"Starting Forth" is a classic. Sort of a comic book for Forth. As I remember though it's originally targeted for polyForth in the 1st edition and then the 83-standard in the 2nd edition. There will be some differences with the

d-pANS94 standard which Quartus is based on, although it does provide a wonderful foundation for many Forth concepts. Appendix D in the d-pANS document describes the the differences between the current standard and the older Forth's. If you get the 2nd edition of "Starting Forth", you can refer to Appendix D.6 in the d-pANS doc for specifics concerning Forth-83.

For something closer to the current standard, try "Forth: The New Model" by Jack Woehr. Much better read than the d-pANS document itself. The ISBN is 1-55851-277-2.

Good luck
- Allen

Re: Basic Forth docs for beginners (ignore my previous post)

Posted by [William Tanksley](#) on February 08, 1999 at 18:04:49:

In Reply to: *Re: Basic Forth docs for beginners (ignore my previous post)*
posted by Allen Chen on February 08, 1999 at 01:09:59:

> > Just wanting to pass on this info to any other beginners that also have been

> > searching for a good beginner reference.

> "Starting Forth" is a classic. Sort of a comic book for Forth. As I remember

> though it's originally targeted for polyForth in the 1st edition and then the

> 83-standard in the 2nd edition. There will be some differences with the
> d-pANS94 standard which Quartus is based on, although it does provide a
> wonderful foundation for many Forth concepts. Appendix D in the d-pANS
document

> describes the the differences between the current standard and the older
> Forth's. If you get the 2nd edition of "Starting Forth", you can refer to
> Appendix D.6 in the d-pANS doc for specifics concerning Forth-83.

Starting Forth is indeed a classic, well worth getting. In fact, generally speaking, the ANS standard didn't introduce that many incompatibilities with the

83 standard; there are a couple, unfortunately early in the book, but other than that it's a pretty smooth ride.

The sequel, "Thinking Forth", is also great.

> For something closer to the current standard, try "Forth: The New Model" by
> Jack Woehr. Much better read than the d-pANS document itself. The ISBN is
> 1-55851-277-2.

I don't recommend this -- not only is it out of print, but it's an intro to
the
standard for experienced Forth coders. Not for newbies.

However, I'm told that the new Forth book at www.forth.com can be used by
Forth newbies, although it's targetted for people who have had a little
experience (but isn't that what playing around is for?). I wouldn't recommend
it without Starting Forth unless you're an experienced programmer in more
than
one language, though. And C and C++ count as the same language.

> - Allen

-Billy

Re: Starting Forth

Posted by Mike Dunker on February 08, 1999 at 18:53:40:

In Reply to: *Re: Basic Forth docs for beginners (ignore my previous post)*
posted by William Tanksley on February 08, 1999 at 18:04:49:

> Starting Forth is indeed a classic, well worth getting. In fact, generally
> speaking, the ANS standard didn't introduce that many incompatibilities
with
the
> 83 standard; there are a couple, unfortunately early in the book, but other
than
> that it's a pretty smooth ride.

Billy,

Is there a place where I can find out what these incompatibilities are? I was
able to find a copy of Starting Forth, and would like to know what the
caveats
are.

Mike

Re: Starting Forth

Posted by [Leo Wong](#) on February 12, 1999 at 14:43:33:

In Reply to: *Re: Starting Forth* posted by Mike Dunker on February 08, 1999 at 18:53:40:

> Is there a place where I can find out what these incompatibilities are? I was
> able to find a copy of Starting Forth, and would like to know what the caveats
> are.

> Mike

Benjamin Hoyt's ANS Starting Forth Programs might be helpful:

Leo Wong

Re: Starting Forth

Posted by [William Tanksley](#) on February 08, 1999 at 23:44:50:

In Reply to: *Re: Starting Forth* posted by Mike Dunker on February 08, 1999 at 18:53:40:

> > Starting Forth is indeed a classic, well worth getting. In fact, generally
> > speaking, the ANS standard didn't introduce that many incompatibilities with
> the
> > 83 standard; there are a couple, unfortunately early in the book, but other
> than
> > that it's a pretty smooth ride.

> Billy,

> Is there a place where I can find out what these incompatibilities are? I was
> able to find a copy of Starting Forth, and would like to know what the caveats
> are.

Okay, I did a websearch at www.google.com, and the best I could find was in the Forth FAQ. I've attached the URL. It won't teach you that ASCII is now CHAR,

but you can probably figure it out from context.

Oh, and one very important thing: Starting Forth wasn't worried about portability, but the standard is. Anytime you need to refer to a cell of data, use CELL+ or CELLS rather than assuming a cell size.

> Mike

-Billy

Re: Forth: The New Model (was Basic Forth docs for beginners)

Posted by [Barry Ekstrand](#) on February 08, 1999 at 12:51:38:

In Reply to: *Re: Basic Forth docs for beginners (ignore my previous post)* posted by Allen Chen on February 08, 1999 at 01:09:59:

Allen,

Thanks for the recommendation. I see that Amazon.com lists Forth: The New Model as out of print as well; I'll see if any of the used bookstores can find a copy for a reasonable sum.

Barry

> For something closer to the current standard, try "Forth: The New Model" by Jack

> Woehr. Much better read than the d-pANS document itself. The ISBN is
> 1-55851-277-2.

> Good luck

> - Allen

Newbie's question: Figuring out how include code works

Posted by [Philippe de Rochambeau](#) on February 07, 1999 at 17:49:11:

I am currently working through the tutorial and have trouble figuring out how the 'ids' file works. Putting '.s's here and there does not help much since '.s's put addresses on the stack, which does not help much. I have tried 'type'ing and 'c@'ing those addresses, but to no avail.

Can anyone tell me the best way to 'debug' other people's include files?

Many thanks.

Philippe de Rochambeau

Re: Newbie's question: Figuring out how include code works

Posted by [Neal Bridges](#) on February 07, 1999 at 17:56:01:

In Reply to: *Newbie's question: Figuring out how include code works* posted by Philippe de Rochambeau on February 07, 1999 at 17:49:11:

> I am currently working through the tutorial and have trouble figuring out how
> the 'ids' file works. Putting '.s's here and there does not help much since
> '.s's put addresses on the stack, which does not help much. I have tried
> 'type'ing and 'c@'ing those addresses, but to no avail.

> Can anyone tell me the best way to 'debug' other people's include files?

.s doesn't put anything on the stack -- it just displays the current contents of the stack.

ids.txt is a very small file indeed. Perhaps if you ask some specific questions, I can help you get past any initial conceptual hurdles.

Neal

Re: Newbie's question: Figuring out how include code works

Posted by [Philippe de Rochambeau](#) on February 07, 1999 at 18:08:03:

In Reply to: *Re: Newbie's question: Figuring out how include code works*
posted by Neal Bridges on February 07, 1999 at 17:56:01:

> > I am currently working through the tutorial and have trouble figuring out how

> > the 'ids' file works. Putting '.s's here and there does not help much since

> > '.s's put addresses on the stack, which does not help much. I have tried
> > 'type'ing and 'c@'ing those addresses, but to no avail.

> > Can anyone tell me the best way to 'debug' other people's include files?

> .s doesn't put anything on the stack -- it just displays the current contents

of

> the stack.

> *ids.txt* is a very small file indeed. Perhaps if you ask some specific

> questions, I can help you get past any initial conceptual hurdles.

I am sorry Neal. .s does indeed print the contents of the stack.

What exactly does 'parse-word' do in (ID)? Does it get the name of the resource right after the (ID) word?

What is the difference between [ID], ID, and (ID)? What does >in do?

I have looked up >in and parse-word in both the ANS documentation and Beginning

Forth, but don't really understand how they work here.

I apologize for asking such elementary questions, but I find learning Forth quite challenging.

Is there an easy way to trace code such as 'ids' in QForth, apart from using .s?

Thanks for your help.

Philippe de Rochambeau

> Neal

Re: Newbie's question: Figuring out how include code works

Posted by [Neal Bridges](#) on February 07, 1999 at 18:42:17:

In Reply to: *Re: Newbie's question: Figuring out how include code works* posted by Philippe de Rochambeau on February 07, 1999 at 18:08:03:

> What exactly does 'parse-word' do in (ID)? Does it get the name of the resource
> right after the (ID) word?

parse-word returns (-- c-addr u), two cells on the stack that represent the starting address and length of the next space-delimited word in the input buffer.

parse-word Hiya! type

will display "Hiya!".

> What is the difference between [ID], ID, and (ID)? What does >in do?

[ID], ID and (ID) are all helper words to simplify managing the four-character resource/type IDs that the PalmOS requires.

ID abcd

will create a constant named abcd that returns the double-cell value 1633837924 (in hex 61626364) which is the numerical representation of the ASCII string 'abcd'.

If you don't need to declare a constant, you can simply use

(ID) abcd

which puts 1633837924 on the stack. If you look at the definition of ID, you'll see it uses (ID).

If you want to do the same thing as (ID) inside a compiled word, you'd use [ID]

instead of (ID). This is a common Forth convention; when you have a word 'foo'

that has both an interpretation version and a compilation version that have similar functions, the interpretation version is named (foo) and the compilation version [foo].

>IN is a variable that holds the current offset into the input buffer. When interpreting a line you type, or a line from a source file, Quartus Forth first

sets >IN to 0; as it works its way through the line, it updates >IN to point to the part of the input buffer not yet processed. Words like PARSE, PARSE-WORD, and WORD update >IN.

> I apologize for asking such elementary questions, but I find learning Forth > quite challenging.

No problem, Philippe; that's a big part of the reason I set up this discussion forum.

> Is there an easy way to trace code such as 'ids' in QForth, apart from using .s?

It looks to me like your problems are with understanding what certain words do; once you understand their function, the source will make more sense to you. Even were a trace facility available, you'd simply be seeing the stack diagram after each word was executed, just as you would by inserting .s at appropriate places.

Neal

More float questions

Posted by [Steven Donahue](#) on February 07, 1999 at 16:24:26:

As part of the second set of exercise in my tutorial, I need to format some floating point numbers and convert them back to strings. I posted some questions about this earlier, but I'm still not really clear about this.

I have the functionality for converting the input string to a float (via >FLOAT). I have performed all of the floating point calculations that I need to perform. Now, I need to convert the floating point number on the FP stack back to a string (in the format "1.38", not "0.138e1"). I will also need some formatting abilities, such as only showing two significant digits after the decimal point.

Neal mentioned the word REPRESENT, but indicated that it is not ready to be used yet. Furthermore, I have read the documentation for REPRESENT in the ANSI Forth document, and I don't think it will give me all of the functionality that I need.

I suspect there are some Forth library words out there that provide floating point words for financial numerical formatting and output. Anyone?

Steve

Re: More float questions

Posted by [Neal Bridges](#) on February 07, 1999 at 16:33:39:

In Reply to: *More float questions* posted by Steven Donahue on February 07, 1999 at 16:24:26:

> As part of the second set of exercise in my tutorial, I need to format
> some floating point numbers and convert them back to strings. I posted
> some questions about this earlier, but I'm still not really clear about
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> the FP stack back to a string (in the format "1.38", not "0.138e1"). I
> will also need some formatting abilities, such as only showing two
> significant digits after the decimal point.

> Neal mentioned the word REPRESENT, but indicated that it is not ready to
> be used yet. Furthermore, I have read the documentation for REPRESENT
> in the ANSI Forth document, and I don't think it will give me all of the
> functionality that I need.

> I suspect there are some Forth library words out there that provide
> floating point words for financial numerical formatting and output.
> Anyone?

REPRESENT will provide what you need; it provides an ASCII representation of
a
float along with the information for formatting it. I'll show how it's done
with a sample F. implementation.

Won't be long now.

Neal

searching the memopad record titles

Posted by [Allen Chen](#) on February 07, 1999 at 13:49:50:

Hi Neal, is there a way to access the internal Quartus function which searches a substring at the beginning of each record in memoDB and returns the pointer to that record (i.e. from the include/needs words)? I need to do something similar and it would save a lot of work if I don't have to duplicate this function.

Thanks
-Allen

Re: searching the memopad record titles

Posted by [Neal Bridges](#) on February 07, 1999 at 16:25:42:

In Reply to: *searching the memopad record titles* posted by Allen Chen on February 07, 1999 at 13:49:50:

> Hi Neal, is there a way to access the internal Quartus function which searches a substring at the beginning of each record in memoDB and returns the pointer to that record (i.e. from the include/needs words)? I need to do something similar and it would save a lot of work if I don't have to duplicate this function.

This is something that isn't a separate factor -- for optimization reasons it's an integral part of INCLUDED (which NEEDS and INCLUDE both use). However, there's example code ("dir") at the bottom of Memo.txt that could be easily modified to do the same thing.

Neal

Re: searching the memopad record titles

Posted by [Ken Butterfield](#) on February 16, 1999 at 11:55:12:

In Reply to: *Re: searching the memopad record titles* posted by Neal Bridges on February 07, 1999 at 16:25:42:

> This is something that isn't a separate factor -- for optimization reasons it's
> an integral part of INCLUDED (which NEEDS and INCLUDE both use). However,
> there's example code ("dir") at the bottom of Memo.txt that could be easily
> modified to do the same thing.

> Neal

Hi Neal

I had a similar question. I was looking at the DIR word in memo and was wondering if I could get it to let me do a DIR of categories and a DIR or memos in a category. I will eventually get to writing this, but thought I might ask if you have already done it!

Ken B

Re: searching the memopad record titles

Posted by [Neal Bridges](#) on February 16, 1999 at 21:22:27:

In Reply to: *Re: searching the memopad record titles* posted by Ken Butterfield on February 16, 1999 at 11:55:12:

>
> > This is something that isn't a separate factor -- for optimization reasons
> it's
> > an integral part of INCLUDED (which NEEDS and INCLUDE both use). However,
> > there's example code ("dir") at the bottom of Memo.txt that could be easily
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> Hi Neal

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> wondering if I could get it to let me do a DIR of categories and a DIR or memos
> in a category. I will eventually get to writing this, but thought I might ask
if
> you have already done it!

This would probably be better built starting with Allen Chen's *newmemo.txt* -- it already works with categories.

Neal

Fatal Exception occurs in incomplete if..else..then

Posted by [Allen Chen](#) on February 07, 1999 at 12:16:00:

Hi, Quartus seems to go into Fatal Exception requiring reset when compiling a nesting if..else..if..then with a missing "then". Is it possible to let the compiler die more gracefully with a more meaningful message? It took me a while to pin down the missing "then" after many resets.

- Allen

Re: Fatal Exception occurs in incomplete if..else..then

Posted by [Neal Bridges](#) on February 07, 1999 at 12:24:18:

In Reply to: *Fatal Exception occurs in incomplete if..else..then* posted by Allen Chen on February 07, 1999 at 12:16:00:

> Hi, Quartus seems to go into Fatal Exception requiring reset when compiling
> a nesting if..else..if..then with a missing "then". Is it possible to let the
> compiler die more gracefully with a more meaningful message? It took me a
while
> to pin down the missing "then" after many resets.

This is something *safe.txt* catches; I recommend using it during development.

Neal

Re: Fatal Exception occurs in incomplete if..else..then

Posted by [Allen Chen](#) on February 07, 1999 at 13:50:52:

In Reply to: *Re: Fatal Exception occurs in incomplete if..else..then* posted by Neal Bridges on February 07, 1999 at 12:24:18:

> This is something *safe.txt* catches; I recommend using it during
> development.

Thanks I'll have a look at that.

Allen

How much is too much (code comments)?

Posted by [Steven Donahue](#) on February 07, 1999 at 00:15:47:

As a Forth novice, I find the definitions of many Forth words in the library and other examples a bit difficult to follow. It's not that I can't understand what is happening. It's just that I have trouble picking up in the middle of a word definition and figuring out what's on the stack, return stack, etc.

I find that if I break the words down and frequently put a code comment reflecting the current stack, I can follow it much better.

However, in my observations of other Forth source code, I am not seeing this used in practice. Is it considered poor Forth style?

As you might already know, I am working on a tutorial that is geared for other Forth novices like myself. I want the source that I provide to be as clear as possible to others, but I don't want to violate any basic Forth style conventions.

Should I comment liberally, or not?

Steve

Re: How much is too much (code comments)?

Posted by [Neal Bridges](#) on February 07, 1999 at 10:14:36:

In Reply to: *How much is too much (code comments)?* posted by Steven Donahue on February 07, 1999 at 00:15:47:

> As a Forth novice, I find the definitions of
> many Forth words in the library and other examples
> a bit difficult to follow. It's not that I can't
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> have trouble picking up in the middle of a word
> definition and figuring out what's on the stack,
> return stack, etc.

> I find that if I break the words down and frequently
> put a code comment reflecting the current stack, I
> can follow it much better.

> However, in my observations of other Forth source
> code, I am not seeing this used in practice. Is it
> considered poor Forth style?

Definitely each word must have a stack-diagram at the top show its inputs and outputs.

As regards other comments, I have discovered two things:

1) If I need extra stack diagrams to follow what's going on in a word, that's probably an indication that I should factor that word into smaller pieces;

2) If I need a comment in the middle of a word to describe what a section of code is doing, it's a very strong indicator that that section should become its own word.

As a guideline, a Forth word should contain about 7-10 other words; exceptions to this occur with CASE..ENDCASE statements, etc., but it's a good guideline. I also make efforts to ensure that no Forth word is longer than 10 lines long (10 MemoPad lines).

The principle is to name each word well, and to make the functionality of each

word sufficiently simple that it can be tested exhaustively.

Neal

Re: How much is too much (code comments)?

Posted by [Mike Will](#) on February 07, 1999 at 10:59:02:

In Reply to: *Re: How much is too much (code comments)?* posted by Neal Bridges on February 07, 1999 at 10:14:36:

> The principle is to name each word well, and to make the functionality of each word sufficiently simple that it can be tested exhaustively.

> Neal

I've been reading the generous response you gave me regarding debugging, and it

makes good sense (factoring). I try not to make words too short, though, in fear of bumping up against Quartus' 250 word limit. Also, in my current project, I need PalmOS calls, event trapping and Quartus logic all to work together at once most of the time. It's difficult (though not impossible) to thoroughly test each word on its own. I find myself writing lots of little test

programs built of skeletons of functionality designed to test one new word. It's interesting work (even fun), but it still seems a little ad hoc. Have you

done any further exploration of Debuffer? It looks good, and Ficl is excellent,

but that !@\$%^\$!@#%\$ Emulator drives me nuts.

Mike

Re: How much is too much (code comments)?

Posted by [Neal Bridges](#) on February 07, 1999 at 11:07:36:

In Reply to: *Re: How much is too much (code comments)?* posted by Mike Will on February 07, 1999 at 10:59:02:

> > The principle is to name each word well, and to make the functionality of
> each word sufficiently simple that it can be tested exhaustively.

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> fear of bumping up against Quartus' 250 word limit. Also, in my current

Don't let that limit be a concern of any sort. The limit already up to 375
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I'll likely make it dynamic in future releases.

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> together at once most of the time. It's difficult (though not impossible)
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> thoroughly test each word on its own. I find myself writing lots of little
test

> programs built of skeletons of functionality designed to test one new word.

I recommend writing test scripts using *tester.txt*. Very simple and
easy to maintain.

> It's interesting work (even fun), but it still seems a little ad hoc. Have
you

> done any further exploration of Debuffer? It looks good, and Ficl is
excellent,

> but that !@\$#%^\$!@#%\$ Emulator drives me nuts.

I've used Debuffer a few times -- it's handy for doing backtraces on the
stack.

However, my code-writing and debugging techniques mean I don't require that
sort

of debugger very often. Most of my apps are written strictly on the device
itself, without any recourse to the Emulator or an external debugger.

However, I find the Emulator quite good, certainly in its latest release
(2.1d24). I use it for profiling, and for ROM compatibility and Gremlin
testing.

What drives you nuts about it?

Neal



Re: How much is too much (code comments)?

Posted by [Mike Will](#) on February 07, 1999 at 11:23:25:

In Reply to: *Re: How much is too much (code comments)?* posted by Neal Bridges on February 07, 1999 at 11:07:36:

> Don't let that limit be a concern of any sort. The limit already up to 375 and I'll likely make it dynamic in future releases.

Oh. So much for that problem, thanks.

> I recommend writing test scripts using *tester.txt*. Very simple and
> easy to maintain.

Will do. Thanks.

> However, I find the Emulator quite good, certainly in its latest release
> (2.1d24). I use it for profiling, and for ROM compatibility and Gremlin
> testing.

> What drives you nuts about it?

The versions drive me nuts. Every dev tool out there seems to require/warn about some specific version. ie Debuffer warns that latest version has a new breakpoint bug, so you should use 2.0d3 But that version is full of profiling bugs, and I really wanted to use Quartus' new features there. I think Neil Rhodes is brilliant, but the unreliable (even frantic) release of updates has scared me away up to this point. A debugging tool MUST be rock-solid. Otherwise, you spend half your time scanning the newsgroups trying to discover

whether a bug is yours, 3Com's, or the Emulator's. (or even Quartus' :)
Mike

Re: How much is too much (code comments)?

Posted by [Neal Bridges](#) on February 07, 1999 at 11:55:47:

In Reply to: *Re: How much is too much (code comments)?* posted by Mike Will on February 07, 1999 at 11:23:25:

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> Otherwise, you spend half your time scanning the newsgroups trying to
discover

> whether a bug is yours, 3Com's, or the Emulator's. (or even Quartus' :)

In 3Com's defense, 2.0b3 is the latest *official* release; the others are
'seed'
releases.

I keep several versions of the Emulator on my system; it's a bit of a
juggling

act, but I have tool combinations for every sort of task.

However, I certainly see your point; I can at least help on the Quartus Forth
homefront :)

Neal

Re: How much is too much (code comments)?

Posted by [Allen Chen](#) on February 07, 1999 at 02:00:00:

In Reply to: *How much is too much (code comments)?* posted by Steven Donahue
on February 07, 1999 at 00:15:47:

> As a Forth novice, I find the definitions of
> many Forth words in the library and other examples
> a bit difficult to follow. It's not that I can't
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> want the source that I provide to be as clear as
> possible to others, but I don't want to violate any
> basic Forth style conventions.

> Should I comment liberally, or not?

My guess is that the common stingy comment style is a habit that stem from the old BLOCK days when there is simply not enough space (1K?) to include a stack diagram for every word used in a definition. Even after the file structure was more commonly accepted in the Forth community, old habits (very little commenting, almost zero code formatting, etc) were still hard to break. Besides, cool programmers just don't comment! :) Anyway, on the pilot, the memopad structure is reminiscent of the BLOCKs. Lots of stack diagrams may eat up the precious 4K for a decent sized program. Of course you can always break the program down to multiple files...

I do find that the library codes can use a little more comments (if not detailed stack diagrams then at least descriptions of the usage and effects for each definition) since there's plenty of space for each file.

My suggestion is that for the tutorial put as many comments as you can (after all it **is** a tutorial). For the actual code, it's up to your discretion and your file organization.

Great job on the tutorial!

-Allen

Re: How much is too much (code comments)?

Posted by [Neal Bridges](#) on February 07, 1999 at 10:41:19:

In Reply to: *Re: How much is too much (code comments)?* posted by Allen Chen on February 07, 1999 at 02:00:00:

> I do find that the library codes can use a little more comments (if not detailed

> stack diagrams then at least descriptions of the usage and effects for each
> definition) since there's plenty of space for each file.

I'm documenting that off-line, in HTML format. It's a work in progress.

Neal

Re: How much is too much (code comments)?

Posted by [Allen Chen](#) on February 07, 1999 at 01:24:06:

In Reply to: *How much is too much (code comments)?* posted by Steven Donahue on February 07, 1999 at 00:15:47:

> As a Forth novice, I find the definitions of
> many Forth words in the library and other examples
> a bit difficult to follow. It's not that I can't
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Great job on the tutorial!

-Allen

Sorry about the double post and a correction

Posted by [Allen Chen](#) on February 07, 1999 at 02:03:20:

In Reply to: *Re: How much is too much (code comments)?* posted by Allen Chen on February 07, 1999 at 01:24:06:

> Great job on the tutorial!

Apparently I've mixed up your tutorial and Steve's tutorial! Sorry about that!

-Allen

Re: Sorry about the double post and a correction

Posted by [Steven Donahue](#) on February 07, 1999 at 10:43:31:

In Reply to: *Sorry about the double post and a correction* posted by Allen Chen on February 07, 1999 at 02:03:20:

> > Great job on the tutorial!

> Apparently I've mixed up your tutorial and Steve's tutorial!

> Sorry about that!

Same Steve. Same tutorial.

Thanks for the response. I will use lots of code comments in my

examples for the tutorial. I had hoped that would be okay, and from your reply, it sounds like I am not committing a Forth no-no.

Steve

Re: Sorry about the double post and a correction

Posted by [Allen Chen](#) on February 07, 1999 at 11:21:16:

In Reply to: *Re: Sorry about the double post and a correction* posted by Steven Donahue on February 07, 1999 at 10:43:31:

Arghghg for some reason my eyes registered another name. I blame it on all the hours staring at the little screen on the pilot with no backlight.

Displaying Tables

Posted by [Michael Collas](#) on February 06, 1999 at 20:44:17:

I've been trying to display a table on a form in a quartus app, but with no success - nothing displays on the form. I've used FrmInitForm to load the form with a table resource into memory so that I could set up the table before showing it with ShowForm. All rows and columns have been set usable using TblSetRowUsable and TblSetColumnUsable, the height of each row has been set, the column style for all columns has been set to integer, and an integer value has been assigned to one cell of the column. Where possible, I've checked each of these values using querying functions (eg. TblGetRowHeight).

Have I missed something that is required to make a table visible? Has anyone successfully used a table in a Quartus application? Does EKEY handle all the events associated with displaying a table?

Thanks,
Michael Collas

Re: Displaying Tables

Posted by [Neal Bridges](#) on February 07, 1999 at 10:07:08:

In Reply to: *Displaying Tables* posted by Michael Collas on February 06, 1999 at 20:44:17:

> Have I missed something that is required to make a table visible? Has anyone
> successfully used a table in a Quartus application? Does EKEY handle all the
> events associated with displaying a table?

I haven't done much work with tables -- I shall have to bench it and see if any special handling is required. If you have any code I can look at, please zip it up and mail it over.

Thanks,

Neal

Re: Displaying Tables

Posted by [joe waldner](#) on February 08, 1999 at 09:08:11:

In Reply to: *Re: Displaying Tables* posted by Neal Bridges on February 07, 1999 at 10:07:08:

> > Have I missed something that is required to make a table visible? Has anyone
> > successfully used a table in a Quartus application? Does EKEY handle all the
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> special handling is required. If you have any code I can look at, please zip
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> up and mail it over.

> Thanks,

> Neal

I tried to get them to display in the on board resource editor and have not been able to so far.

Re: Displaying Tables

Posted by [Michael Collas](#) on February 08, 1999 at 22:49:05:

In Reply to: *Re: Displaying Tables* posted by joe waldner on February 08, 1999 at 09:08:11:

> I tried to get them to display in the on board resource editor and have not
> been able to so far.

Tables require some programming before they show anything, so they won't usually be visible on a form preview in the resource editor. Some resource editors (eg. the one in the official SDK) will indicate the bounds of a table on a form preview. Nothing will be visible when the form is shown in an application, however, until the table is set up programmatically at run time, and data is provided for display in the table.

Michael Collas

PopupForm problems

Posted by [Allen Chen](#) on February 06, 1999 at 19:39:18:

Hi Neal, I am having some problem with the PopupForm word in form.txt. Apparently, under some conditions, PopupForm gets stuck in the until-drawn word and would not return. I haven't been able to track down the exact conditions. What I had was 5 popup forms, more or less identical in size, with various buttons and fields, etc. When I use FrmPopupForm to call them up there is no problem at all. If I use PopupForm instead, only one works. The only obvious difference in the forms is that the working form has no text fields. This is curious as get-input uses both PopupForm and text field.

-Allen

Re: PopupForm problems

Posted by [Neal Bridges](#) on February 06, 1999 at 19:50:58:

In Reply to: *PopupForm problems* posted by Allen Chen on February 06, 1999 at 19:39:18:

> Hi Neal, I am having some problem with the PopupForm word in form.txt.
> Apparently, under some conditions, PopupForm gets stuck in the until-drawn word
> and would not return. I haven't been able to track down the exact conditions.

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> buttons and fields, etc. When I use FrmPopupForm to call them up there is no
> problem at all. If I use PopupForm instead, only one works. The only obvious
> difference in the forms is that the working form has no text fields. This is
> curious as get-input uses both PopupForm and text field.

Did you use RsrcEdit to make your forms -- and if so, what version? An earlier version of that would create forms that internally thought they were a different form #, and the behaviour you describe would result.

Neal

Re: PopupForm problems

Posted by [Allen Chen](#) on February 06, 1999 at 20:17:16:

In Reply to: *Re: PopupForm problems* posted by Neal Bridges on February 06, 1999 at 19:50:58:

> Did you use RsrcEdit to make your forms -- and if so, what version? An earlier
> version of that would create forms that internally thought they were a different
> form #, and the behaviour you describe would result.

Yes I am using RsrcEdit. It's version 0.997. I thought that's the latest version?

I use Insider to check the internal resource ID for all the forms, and they

are
the same as what RsrcEdit says they are.

Thanks for the amazingly quick response.

Allen

Re: PopupForm problems

Posted by [Neal Bridges](#) on February 06, 1999 at 20:27:26:

In Reply to: *Re: PopupForm problems* posted by Allen Chen on February 06, 1999 at 20:17:16:

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> Thanks for the amazingly quick response.

No problem. I'm curious to know which part of "until-drawn" is not returning true -- the comparison to FrmGetActiveForm, or the FrmVisible test.

It's possible that under certain circumstance you're running out of dynamic RAM -- each FrmPopupForm saves the form under it, and at 3200 bytes each they can add up.

Neal

Re: PopupForm problems

Posted by [Allen Chen](#) on February 06, 1999 at 21:56:12:

In Reply to: *Re: PopupForm problems* posted by Neal Bridges on February 06, 1999 at 20:27:26:

> No problem. I'm curious to know which part of "until-drawn" is not
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> true -- the comparison to FrmGetActiveForm, or the FrmVisible test.
> It's possible that under certain circumstance you're running out of dynamic RAM
> -- each FrmPopupForm saves the form under it, and at 3200 bytes each they can
> add up.

The popup only has one level depth. The main form calls one of 5 possible popups. The problem (when using PopupForm) can occur when the popups are called the first time. So it's probably not the dynamic RAM.

I am curious though. If the form is like one pixel out of the screen boundary, would it affect the FrmVisible test? Similarly, if the text field height is a few pixels too short so the underline is not shown, would it affect the Frmvisible test too? Just wondering. My initial tests seems to suggest it doesn't really matter.

- Allen

Re: PopupForm problems

Posted by [Neal Bridges](#) on February 07, 1999 at 10:31:49:

In Reply to: *Re: PopupForm problems* posted by Allen Chen on February 06, 1999 at 21:56:12:

> I am curious though. If the form is like one pixel out of the screen boundary,
> would it affect the FrmVisible test? Similarly, if the text field height is a
> few pixels too short so the underline is not shown, would it affect the
> Frmvisible test too? Just wondering. My initial tests seems to suggest it
> doesn't really matter.

Allen, to diagnose this we can go two ways; either you can modify "until-drawn" to see which condition isn't returning true, or you can mail me your source and resources and I'll bench it here. Let me know!

Neal

Re: PopupForm problems

Posted by [Allen Chen](#) on February 07, 1999 at 11:31:30:

In Reply to: *Re: PopupForm problems* posted by Neal Bridges on February 07, 1999 at 10:31:49:

> Allen, to diagnose this we can go two ways; either you can modify "until-drawn"
> to see which condition isn't returning true

I've already done that. It seems to be the FrmGetActiveFormID comparison that's causing the trouble. For now I've commented it out in my until-drawn. I thought I could just use FrmPopupForm, but apparently it is a big pain to initialize the popupform without waiting for it to be visible. I haven't had much success with FrmInitForm.

> , or you can mail me your source and
> resources and I'll bench it here. Let me know!

I can do that too. It's on its way to your mailbox.

Thanks for you help
Allen

Tutorial available in the File Area

Posted by [Neal Bridges](#) on February 05, 1999 at 22:48:08:

Version 1.01 of Steven Donahue's Quartus Forth tutorial is available for download in the Quartus Forth File Area.

Be sure and post your feedback!

Neal

- [File Area](#)

Re: Tutorial available in the File Area

Posted by Mike Dunker on February 07, 1999 at 00:50:33:

In Reply to: *Tutorial available in the File Area* posted by Neal Bridges on February 05, 1999 at 22:48:08:

Looks good, Steven!

First couple of things:

1) For the second exercise, unless I missed it, you failed to mention that you need to edit the MBAR ID of the Form to point at the menu that was added.

2) Also in the second exercise, when you tap on the Options text for the menu, the dropdown menu goes away, and you can't get it back without using /A. Normally, tapping on the Options text again should drop down the menu.

> Version 1.01 of Steven Donahue's Quartus Forth tutorial is available for
> download in the Quartus Forth File Area.

> Be sure and post your feedback!

> Neal

Re: Tutorial available in the File Area

Posted by [Steven Donahue](#) on February 07, 1999 at 16:35:51:

In Reply to: *Re: Tutorial available in the File Area* posted by Mike Dunker on February 07, 1999 at 00:50:33:

> Looks good, Steven!

Thanks. I never thought "Hello, World" could be so involved!

> First couple of things:

> 1) For the second exercise, unless I missed it, you failed to mention that
> you need to edit the MBAR ID of the Form to point at the menu that was added.

I'll update this on Monday. Good catch...

> 2) Also in the second exercise, when you tap on the Options text for the
> menu, the dropdown menu goes away, and you can't get it back without using /A.

> Normally, tapping on the Options text again should drop down the menu.

I noticed this as well. However, I can't explain it. If anyone else has any insight here, I would appreciate it.

Steve

Re: Tutorial available in the File Area

Posted by Mike Dunker on February 08, 1999 at 01:47:35:

In Reply to: *Re: Tutorial available in the File Area* posted by Steven Donahue on February 07, 1999 at 16:35:51:

> > 2) Also in the second exercise, when you tap on the Options text for the menu,
> > the dropdown menu goes away, and you can't get it back without using /A.
> > Normally, tapping on the Options text again should drop down the menu.
> I noticed this as well. However, I can't explain it. If anyone else has any
> insight here, I would appreciate it.

Looks like I found out what the problem is. By default, when I created my menu, the height of the Options menu was set to 0. If I set this to 12, the menu can be used as expected. However, when the menu comes up, it is a little strange in that both the Options and About... are highlighted.

It seems like RsrcEdit does not allow you to set the Selected Item values to a negative number (you want -1). A workaround is to set it to 257, then hexedit the menu. Where you see 01 01 in the third line, change it to FF FF and you will get -1 in that field. Then the menu works as expected. I guess we just need Roger to change such that Selected Menu and Selected Item can take negative numbers.

Mike

Re: Tutorial available in the File Area

Posted by [Neal Bridges](#) on February 07, 1999 at 18:50:05:

In Reply to: *Re: Tutorial available in the File Area* posted by Steven Donahue on February 07, 1999 at 16:35:51:

> > Looks good, Steven!

> Thanks. I never thought "Hello, World" could be so involved!

>

> > First couple of things:

> > 1) For the second exercise, unless I missed it, you failed to mention that

you

> > need to edit the MBAR ID of the Form to point at the menu that was added.

> I'll update this on Monday. Good catch...

>

> > 2) Also in the second exercise, when you tap on the Options text for the menu,

> > the dropdown menu goes away, and you can't get it back without using /A.

> > Normally, tapping on the Options text again should drop down the menu.

> I noticed this as well. However, I can't explain it. If anyone else has any > insight here, I would appreciate it.

This from Roger Lawrence, the RsrcEdit author:

"There's a pair of fields in the MenuBar struct 'curMenu' and 'curItem' that specify the menu/item that is selected when the menu bar appears. I explicitly set these to -1 (i.e. none). I could easily expose these on the menu bar editing form."

Something similar to this occurs for me when I use RsrcEdit to create a new menu from scratch; if I copy an existing menu (say, from MemoPad) and modify it, I don't have this problem.

I suggest a quick note to Roger -- Steven, would you mind sending the details off to him?

Thanks,
Neal

Re: Tutorial available in the File Area

Posted by [Allen Chen](#) on February 07, 1999 at 21:11:08:

In Reply to: *Re: Tutorial available in the File Area* posted by Neal Bridges on February 07, 1999 at 18:50:05:

> Something similar to this occurs for me when I use RsrcEdit to create a new menu
> from scratch; if I copy an existing menu (say, from MemoPad) and modify it, I
> don't have this problem.

> I suggest a quick note to Roger -- Steven, would you mind sending the details
> off to him?

Interestingly enough, I am finding similar things with creating alert forms from scratch...I am unable to create buttons. If I copy an existing alert form with an ok button or some such, there is no problem.

;then

Posted by [joe waldner](#) on February 05, 1999 at 15:38:39:

I THOUGHT YOU MIGHT FIND THIS INTERSESTING, IT GETS RID IF LOTS OF ELSE'S AND THE WORD EXITS WHEN IT FINDS A TRUE CONDITION SO YOU CAN EVEN GET RID OF WHAT WOULD BE THE FINAL IF..THEN IN THE SAMPLE CODE BELOW.

```
: ;then [compile] exit [compile] then ; immediate

: do-name ( n -)
dup 1 = if hmw$ move$ type$
;then
dup 2 = if jew$ move$ type$
;then
dup 3 = if jaw$ move$ type$
;then
dup 4 = if jjw$ move$ type$ ;then
-1 ?exit ! ;
```

Re: ;then

Posted by [Neal Bridges](#) on February 06, 1999 at 20:05:37:

In Reply to: ;then posted by joe waldner on February 05, 1999 at 15:38:39:

```
> I THOUGHT YOU MIGHT FIND THIS INTERSESTING, IT GETS RID IF LOTS OF ELSE'S
AND
> THE WORD EXITS WHEN IT FINDS A TRUE CONDITION SO YOU CAN EVEN GET RID OF
WHAT
> WOULD BE THE FINAL IF..THEN IN THE SAMPLE CODE BELOW.
```

```
>
> : ;then [compile] exit [compile] then ; immediate

> : do-name ( n -)
> dup 1 = if hmw$ move$ type$
> ;then
> dup 2 = if jew$ move$ type$
> ;then
> dup 3 = if jaw$ move$ type$
> ;then
> dup 4 = if jjw$ move$ type$ ;then
> -1 ?exit ! ;
```

One of Forth's features is the ability to define new control structures. For myself, I find I read ;then as "; then" -- but that's a matter of preference; certainly the idea is sound.

Neal

Re: ;then

Posted by joe waldner on February 05, 1999 at 15:45:43:

In Reply to: ;then posted by joe waldner on February 05, 1999 at 15:38:39:

```
> I THOUGHT YOU MIGHT FIND THIS INTERSESTING, IT GETS RID IF LOTS OF ELSE'S
AND
> THE WORD EXITS WHEN IT FINDS A TRUE CONDITION SO YOU CAN EVEN GET RID OF
WHAT
> WOULD BE THE FINAL IF..THEN IN THE SAMPLE CODE BELOW.
```

```
> NEEDS CORE-EXT
> : ;then [compile] exit [compile] then ; immediate

> : do-name ( n -)
> dup 1 = if hmw$ move$ type$
> ;then
```

```
> dup 2 = if jew$ move$ type$  
> ;then  
> dup 3 = if jaw$ move$ type$  
> ;then  
> dup 4 = if jjw$ move$ type$ ;then  
> -1 ?exit ! ;
```

0allot in struct.txt

Posted by [Allen Chen](#) on February 05, 1999 at 13:06:14:

Where is 0allot defined?? When I try to "include struct", Quartus returns "0allot? undefine word". I searched the entire library and 0allot is not defined anywhere, nor is it listed as a standard forth word. Perhaps it's a typo for "0 allot"?

Allen

Re: 0allot in struct.txt

Posted by [Neal Bridges](#) on February 05, 1999 at 13:47:48:

In Reply to: *0allot in struct.txt* posted by Allen Chen on February 05, 1999 at 13:06:14:

```
> Where is 0allot defined?? When I try to "include struct", Quartus returns  
> "0allot? undefine word". I searched the entire library and 0allot is not  
> defined anywhere, nor is it listed as a standard forth word. Perhaps it's a  
> typo for "0 allot"?
```

0allot is meant to be in *toolkit.txt*; I'll update it tonight.

In the meantime:

```
: 0allot ( chars -- )  
  here over allot swap 0 fill ;
```

Neal

FROUND

Posted by [Mike Will](#) on February 05, 1999 at 11:15:20:

Well, this little beggar cost me a few hours:

0E0 FROUND

fround? float divide by zero

It threw me for a loop because I had a lot of F/ 's in my code that had to be checked out one by one.

Cheers

Mike

Re: FROUND

Posted by [Neal Bridges](#) on February 05, 1999 at 11:25:07:

In Reply to: *FROUND* posted by Mike Will on February 05, 1999 at 11:15:20:

> Well, this little beggar cost me a few hours:

>

> 0E0 FROUND

> fround? float divide by zero

>

> It threw me for a loop because I had a lot of F/ 's in my code that had to be

> checked out one by one.

Looks like the kernel needs a special-case in FROUND for 0e0; thanks for letting me know.

Neal

debugging (was Re: FROUND)

Posted by [Mike Will](#) on February 05, 1999 at 17:45:01:

In Reply to: *Re: FROUND* posted by Neal Bridges on February 05, 1999 at 11:25:07:

> Looks like the kernel needs a special-case in FROUND for 0e0; thanks for letting me know.
> Neal

Thanks Neal. Along with everyone else, I really appreciate your vigilance in answering all posts, across a wide range of expertise.

I'd really like your thoughts regarding debugging. I've had a pretty tough day, with upwards of 100 crashes. About 80% resulted from a PalmOS call, the rest within Quartus. I'm using safe.txt, by the way.

I understand and use break points, stack dumps, etc, but a crashed PalmIII severely curtails one's debugging options. Am I missing something? Is there an easier way?

I'm thinking about producing a new major motion picture. It's the story of a naive, middle-aged programmer who gets seduced by a hot and flashy PalmOS, and the loss and personal tragedy that ensues. My working title is "Fatal Exception"

cheers
Mike

Re: debugging (was Re: FROUND)

Posted by [Neal Bridges](#) on February 05, 1999 at 19:47:47:

In Reply to: *debugging (was Re: FROUND)* posted by Mike Will on February 05, 1999 at 17:45:01:

> I'd really like your thoughts regarding debugging. I've had a pretty tough day,
> with upwards of 100 crashes. About 80% resulted from a PalmOS call, the rest
> within Quartus. I'm using safe.txt, by the way.
> I understand and use break points, stack dumps, etc, but a crashed PalmIII

> severely curtails one's debugging options. Am I missing something? Is there an
> easier way?

Speaking for myself, the best technique I've found is good factoring -- writing small, well-named words that can be tested exhaustively before proceeding. I also build functional and unit tests using `tester.fs`; that way I can regression-test the modules as I add to them.

The runner-up technique is to write larger, poorly-factored blocks of code, hope fervently that they more-or-less work out of the gate, and if they do, follow up by factoring them out properly. This is a riskier (and sloppier) approach, and one I use only when the code I'm writing is simple, and not when exploring new areas of the system.

One 'feature' of the PalmOS is that it doesn't return error codes for most errors, but simply crashes instead ("Fatal Exception"). Virtually all of these simply entail a reset, with no loss of data, but they're not informative for debugging.

If you've got a particularly difficult problem, try the PalmOS emulator; it returns much more lucid information at 'fatal exception' time. In conjunction with the *generate-symbols* option in Quartus Forth, and a debugger such as the 'Debuffer', you can do stack crawls, register and memory dumps, and generally see what's going on at crash time.

I'm also open to suggestions as to what else *safe.txt* might be modified to catch.

Neal

Re: debugging (was Re: FROUND)

Posted by [Lou Solomon](#) on February 05, 1999 at 18:33:39:

In Reply to: *debugging (was Re: FROUND)* posted by Mike Will on February 05, 1999 at 17:45:01:

Mike:

> I'm thinking about producing a new major motion picture. It's the story of a
> naive, middle-aged programmer who gets seduced by a hot and flashy PalmOS, and
> the loss and personal tragedy that ensues.

> My working title is "Fatal Exception"

Hey, think of FATAL EXCEPTION from the "victim's" point of view...

" You tell me to do something, I do it, my brains get scrambled, then you stab me in the back, and I wake up with no memory. This is the thanks I get for keeping track of your loved one's birthdays!".

From a man whose stabbed his pp too many times (and counting...)

Lou

s" compile time

Posted by [joe waldner](#) on February 05, 1999 at 10:59:14:

does s" do anything at compile time? (in polyforth it returns an address and count) is there a good way to do this change it if I need to.

Re: s" compile time

Posted by [Neal Bridges](#) on February 05, 1999 at 11:08:28:

In Reply to: *s" compile time* posted by joe waldner on February 05, 1999 at 10:59:14:

> does s" do anything at compile time? (in polyforth it returns an address and
> count) is there a good way to do this change it if I need to.

At compile time, e.g.

```
: mystring s" This is my string" ;
```

S" compiles a string which later will return (-- c-addr len). If you want S"

to work in interpretation state, you'll want to use the S" in *file.txt*, from the Quartus Forth File Area.

Neal

- [File Area](#)

TealPaint->Bitmap

Posted by [Daryl Lee](#) on February 05, 1999 at 08:03:18:

A few days ago I asked about a bitmap editor, and came up basically dry. After some discussion in this forum, I decided to take the approach of using TealPaintLite to draw the bitmap, and write a utility that would read the TealPaint Picture and import it into a bitmap resource. I have gone as far as I want to go with this, and am publishing the current state of my work for free distribution among the Quartus community.

The code below will read the upper left corner of a TealPaint picture identified by the picture index number, of a size determined. (See GetImage.) It will further write that image in Palm OS Bitmap format to a resource of type tAIB or Tbmp (as determined by the icon?) flag in SaveImage, with a specified resource ID in a specified ResourceDB.

When this code is "include"d (or "needs"ed) in an application, ShowBitmap will read the bitmap and display it at the specified location.

I considered making a stand-alone app out of it, but abandoned the idea when I thought how few times I would be using it. I'll be glad to answer any questions, just raise your hand before speaking out, and don't interrupt anyone who's already speaking.

Daryl

\ Bitmap-DOL 2/5/99

```
needs core-ext
needs ids
needs DataMgr
needs zstrings
needs struct
```

```
struct
1 cells field i-width
1 cells field i-height
1 cells field i-bytes/line
1 cells field i-flags
4 cells field i-filler
160 20 * chars field i-data \ max
end-struct bitmap:
```

```
20. 2constant p-bytes/line
```

```

2variable RscHandle
2variable PixDB
2variable RscDB
2variable Pixel
2variable DBPtr
2variable RHnd
2variable size
variable pic-no
bitmap: image

: ShowBitmap ( y x ID-no ID-type )
DmGetResource
2dup RscHandle 2!
MemHandleLock ( y x addr. )
WinDrawBitmap
RscHandle 2@ MemHandleUnlock
throw
RscHandle 2@ DmReleaseResource
throw
;

: ShowImage ( y x -- )
image >abs WinDrawBitmap
;

: GetImage ( h w n -- )
pic-no !
image i-width !
image i-height !
image i-width @
7 + 8 / dup 1 and +
image i-bytes/line !
image i-flags 10 0 fill
dmModeReadOnly z" Pictures"
OpenDB PixDB 2!
pic-no @ PixDB 2@ DmGetRecord
2dup RHnd 2!
MemHandleLock
114. D+ ( s. ) \ skip header stuff
image i-height @ 0 do 2dup ( s. s. )
image i-bytes/line @ s>d 2swap
image i-bytes/line @ i *
image i-data + >abs ( s. u. s. d. )
memmove throw
p-bytes/line d+
loop
RHnd 2@ MemHandleUnLock throw
false pic-no @ PixDB 2@
DmReleaseRecord throw
PixDB 2@ CloseDB
;

```

```
: SaveImage ( id icon? z-addr u -- )
2swap >r >r
dmModeWrite rot rot
OpenDB RscDB 2!
image i-height @
image i-bytes/line @ * 16 + s>d
2dup size 2!
r> r> if [id] tAIB else [id] Tbmp then
RscDB 2@ DmNewResource
\ DmNewResource ( size. resID
\ resType. dbP. -- VoidHand. )
2dup RHnd 2!
MemHandleLock 2>r
\ DmWrite ( bytes. &srcP. offset.
\ &recordP. -- Err )
size 2@ image >abs 0. 2r>
DmWrite throw
RHnd 2@ MemHandleUnLock throw
RHnd 2@ DmReleaseResource
throw
RscDB 2@ CloseDB
;

: CopyImage
40 65 0 getimage
1001 false z" HcpResources"
saveimage
\ page 80 10 showimage
;

: tt CopyImage ;
```

Re: TealPaint->Bitmap

Posted by [Allen Chen](#) on February 05, 1999 at 17:05:41:

In Reply to: *TealPaint->Bitmap* posted by Daryl Lee on February 05, 1999 at 08:03:18:

> I considered making a stand-alone app out of it, but abandoned the idea when I
> thought how few times I would be using it. I'll be glad to answer any
> questions, just raise your hand before speaking out, and don't interrupt anyone
> who's already speaking.

Hi, this doesn't seem to work with the newer version (v3.10) of TealPaint. With one record (square box flushed to the top left corner) in the "Pictures" database, after the following commands:

```
include bitmap-DOL
80 80 0 getimage
page 0 0 showimage
```

all I got was some jumbled 80x80 bitmap!

-Allen

Re: TealPaint->Bitmap

Posted by [Carl Jacobsen](#) on February 05, 1999 at 20:50:20:

In Reply to: *Re: TealPaint->Bitmap* posted by Allen Chen on February 05, 1999 at 17:05:41:

> Hi, this doesn't seem to work with the newer version (v3.10) of TealPaint.
> With one record (square box flushed to the top left corner) in the
> "Pictures"
> database, after the following commands: ...

eek -- I seem to remember reading something about the latest version of TealPaint having compression, presumably to make their database size smaller. I'd bet that it isn't anything more complex than run length encoding, but I haven't looked, and don't remember their announcement saying anything more detailed than "now with compression".

I was thrilled, by the way, to see Daryl's code appear this morning -- it was only an idea on the forum a couple days ago. I'm tempted to put a wrapper around it to make it a real app, complete with pick lists (er, they're called something else, but I forget) so you can choose the picture by name from the database. But I haven't done anything GUI yet on this little beast; still reading the Palm Programming book...

-- Carl

- [Tealpaint page, says "Image compression \(New for 3.0\)"](#)

Re: TealPaint->Bitmap

Posted by [Daryl Lee](#) on February 05, 1999 at 08:08:37:

In Reply to: *TealPaint->Bitmap* posted by Daryl Lee on February 05, 1999 at 08:03:18:

> The code below will read the upper left corner of a TealPaint picture
> identified by the picture index number, of a size determined. (See
getImage.)
> It will further write that image in Palm OS Bitmap format to a resource of
type
> tAIB or Tbmp (as determined by the icon?) flag in SaveImage, with a
specified
> resource ID in a specified ResourceDB.

I read that three times and still didn't catch two glaring errors in this
paragraph.

The "size determined" should be "size determined by the parameters passed to
getImage". And the right parenthesis after icon? should go after flag
instead:
(as determined by the icon? flag).

I apologize for any confusion caused by these errors. I shouldn't be posting
stuff so early.

Daryl

Re: TealPaint->Bitmap

Posted by [Neal Bridges](#) on February 05, 1999 at 10:27:20:

In Reply to: *Re: TealPaint->Bitmap* posted by Daryl Lee on February 05, 1999
at 08:08:37:

> > The code below will read the upper left corner of a TealPaint picture
Neat! If you don't mind, I'll post it in the File Area.

Neal

Re: TealPaint->Bitmap

Posted by [Daryl Lee](#) on February 05, 1999 at 14:28:51:

In Reply to: *Re: TealPaint->Bitmap* posted by Neal Bridges on February 05, 1999 at 10:27:20:

> > > The code below will read the upper left corner of a TealPaint picture
> Neat! If you don't mind, I'll post it in the File Area.

Go right ahead. I'm honored every time you find something worth saving.

And By the Bye, this is still fun and way too addictive.

Daryl

TealPaint->Bitmap -- RsrcEdit comes through...

Posted by [Rick Francis](#) on February 08, 1999 at 16:37:23:

In Reply to: *Re: TealPaint->Bitmap* posted by Daryl Lee on February 05, 1999 at 14:28:51:

> > > > The code below will read the upper left corner of a TealPaint picture
...
> And By the Bye, this is still fun and way too addictive.
> Daryl

Sure is -- and somebody is listening, too, re: TealPaint support. Just noted this on the Individeo website (<http://www.individeo.net/>):

"New release v0.998 (02/06/99). FIXES - Crash in Form Preview when form contained a bitmap. Wasn't trapping buttons for Alert preview.
ADDED - Bitmap editing (well, a start) allows editing of arbitrary bitmaps in 1x, 2x or 4x. 'Options' menu from database list allows opening TealPaint (www.tealpoint.com) databases and importing image as bitmap resource."

It looks like the wish was father to the thought. I plan on trying this out tonight when I get a spare hour or so -- still new to much of this, will try "words and music" from Mr. Donahue's excellent tutorial & see what transpires.

Rick

"MOVE" in absolute space

Posted by [Daryl Lee](#) on February 04, 1999 at 14:46:28:

I recently had need of an absolute address version of MOVE (src. dst. u --) and, not finding one elsewhere, had to write it. I've included it below, but would rather use a standard version if one exists. Is there one?

Daryl

```
: amove ( src. dst. n -- )
0 do
2>r 2dup c@a 2r@ c!a
1. D+ 2r> 1. D+
loop
2drop 2drop
;
```

Re: "MOVE" in absolute space

Posted by [Neal Bridges](#) on February 04, 1999 at 15:32:18:

In Reply to: "MOVE" in absolute space posted by Daryl Lee on February 04, 1999 at 14:46:28:

> I recently had need of an absolute address version of MOVE (src. dst. u --)
> and, not finding one elsewhere, had to write it. I've included it below, but
> would rather use a standard version if one exists. Is there one?

> Daryl

```
> : amove ( src. dst. n -- )
> 0 do
> 2>r 2dup c@a 2r@ c!a
> 1. D+ 2r> 1. D+
> loop
> 2drop 2drop
> ;
```

There's a PalmOS systrap: MemMove. It'll do what you want.

Neal

Re: "MOVE" in absolute space

Posted by [Daryl Lee](#) on February 04, 1999 at 17:30:43:

In Reply to: *Re: "MOVE" in absolute space* posted by Neal Bridges on February 04, 1999 at 15:32:18:

> There's a PalmOS systrap: MemMove. It'll do what you want.

I thought there must be, but it eluded me. Thanks.

Daryl

grabbing user input from console?

Posted by [Steve Gibson](#) on February 04, 1999 at 13:25:36:

I've seen and (more or less) understand the input.txt library file that allows one to use a graphical dialog to query a user for input, but is there a simpler way to prompt a user at the console and grab the input?

Re: grabbing user input from console?

Posted by [Neal Bridges](#) on February 04, 1999 at 14:30:22:

In Reply to: *grabbing user input from console?* posted by Steve Gibson on February 04, 1999 at 13:25:36:

> I've seen and (more or less) understand the input.txt library file that allows
> one to use a graphical dialog to query a user for input, but is there a simpler
> way to prompt a user at the console and grab the input?

The simplest method is via the Standard word ACCEPT.

Neal

Re: grabbing user input from console?

Posted by Erwin on February 04, 1999 at 16:26:29:

In Reply to: *Re: grabbing user input from console?* posted by Neal Bridges on February 04, 1999 at 14:30:22:

> > I've seen and (more or less) understand the input.txt library file that allows
> > one to use a graphical dialog to query a user for input, but is there a
> simpler
> > way to prompt a user at the console and grab the input?
> The simplest method is via the Standard word ACCEPT.
> Neal

Sorry, but have to: 8-)

/Erwin

Re: grabbing user input from console?

Posted by [Steve Gibson](#) on February 05, 1999 at 12:23:14:

In Reply to: *Re: grabbing user input from console?* posted by Erwin on February 04, 1999 at 16:26:29:

> > > I've seen and (more or less) understand the input.txt library file that
> allows
> > > one to use a graphical dialog to query a user for input, but is there a
> > simpler
> > > way to prompt a user at the console and grab the input?
> > The simplest method is via the Standard word ACCEPT.
> > Neal
> Sorry, but have to: 8-)
> /Erwin

Ooops, my apologies. I just saw Erwin's post...

Newbie's question: how do you write to a memopad?

Posted by [Philippe de Rochambeau](#) on February 04, 1999 at 09:58:02:

could someone give me a simple example of how to write to a memopad?

Is there a way to write the output of WORDS, or any other word, to a memopad?

Many thanks.

Philippe de Rochambeau

Re: Newbie's question: how do you write to a memopad?

Posted by [Neal Bridges](#) on February 04, 1999 at 10:24:18:

In Reply to: *Newbie's question: how do you write to a memopad?* posted by Philippe de Rochambeau on February 04, 1999 at 09:58:02:

> could someone give me a simple example of how to write to a memopad?

> Is there a way to write the output of WORDS, or any other word, to a memopad?

Have a look at *memo.txt* in the Quartus Forth File Area. It does just what you're after.

Redirection of output text requires the ability to redirect EMIT, TYPE, etc.

--

which I'm working on. Sending numeric output and strings to memos is simple enough, however. It's a matter of constructing a string in memory and then writing that string to a new memo.

In the case of WORDS, note that all words are listed in the manual.

Neal

Re: Newbie's question: how do you write to a memopad?

Posted by [Paul J. Gilliam](#) on February 04, 1999 at 17:41:08:

In Reply to: *Re: Newbie's question: how do you write to a memopad?* posted by Neal Bridges on February 04, 1999 at 10:24:18:

Neal,

When I run the dir word located at the end of the \ memo source, it seems to list all my memos and then gets a fatal exception at the end. I have to paper-clip at that point.

--# Paul #--

PS: I am having quite a good time getting back into forth!

Re: Newbie's question: how do you write to a memopad?

Posted by [Neal Bridges](#) on February 04, 1999 at 20:15:16:

In Reply to: *Re: Newbie's question: how do you write to a memopad?* posted by Paul J. Gilliam on February 04, 1999 at 17:41:08:

> Neal,

> When I run the dir word located at the end of the \ memo source, it seems to
> list all my memos and then gets a fatal exception at the end. I have to
> paper-clip at that point.

Been a long time since I looked at the memo source. It's possible that dir example has a bug; actually I didn't realize I'd left it in. If you can find the bug, great; if not, it's on my list of things to do.

> PS: I am having quite a good time getting back into forth!

It's fun, isn't it!

Neal

object not in form error

Posted by [Joe Waldner](#) on February 04, 1999 at 09:48:49:

building forms right on the Pilot works very well, thanks Neal. I am now getting a fatal error that prompts me for a reset, "object not in form" when I try to display the form.

i did notice that when i load Duco and try and show the form (not run the program) I get the same error. what am I missing?

Re: object not in form error

Posted by [Gary Learned](#) on February 04, 1999 at 14:31:15:

In Reply to: *object not in form error* posted by Joe Waldner on February 04, 1999 at 09:48:49:

> building forms right on the Pilot works very well, thanks Neal.

What methods are you using to build the forms right on the pilot?

Re: object not in form error

Posted by [Neal Bridges](#) on February 04, 1999 at 23:09:13:

In Reply to: *Re: object not in form error* posted by Gary Learned on February 04, 1999 at 14:31:15:

> > building forms right on the Pilot works very well, thanks Neal.

> What methods are you using to build the forms right on the pilot?

Gary, if you haven't found it yet, have a look at RsrcEdit; it's on the Online

Resources page of the manual. It lets you create forms on-board the Palm that you can then use in Quartus Forth apps.

Neal

Re: object not in form error

Posted by [Neal Bridges](#) on February 04, 1999 at 10:19:08:

In Reply to: *object not in form error* posted by Joe Waldner on February 04, 1999 at 09:48:49:

> building forms right on the Pilot works very well, thanks neal. I am now
> getting a fatal error that prompts me for a reset, "object not in form"
when I
> try to display the form.

> i did notice that when i load Duco and try and show the form (not run the
> program) I get the same error. what am I missing?

If you want to test a form and then drop back into the interpreter, make sure
your form has a field with these attributes:

```
FIELD ID 1103 AT (0 80 160 11) LEFTALIGN SINGLELINE MAXCHARS 80 NONUSABLE
```

This is the field used by ACCEPT, and when it's not there and you drop into
the
interpreter, you get the 'Object not found in form' error.

I'll be updating the FAQ with this information on the next pass.

Neal

Re: object not in form error

Posted by [Michael Collas](#) on February 06, 1999 at 20:53:27:

In Reply to: *Re: object not in form error* posted by Neal Bridges on February
04, 1999 at 10:19:08:

> If you want to test a form and then drop back into the interpreter, make
sure

> your form has a field with these attributes:

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> FIELD ID 1103 AT (0 80 160 11) LEFTALIGN SINGLELINE MAXCHARS 80 NONUSABLE
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> This is the field used by ACCEPT, and when it's not there and you drop into
the

> interpreter, you get the 'Object not found in form' error.

> I'll be updating the FAQ with this information on the next pass.

> Neal

I've also just re-shown the main Quartus form to drop back into the
interpreter.

For example, the event processing loop looks like this:

```
begin
ekey
ctlSelectEvent = if
event >abs itemid
dup doneButton = if
MainFormID ShowForm
then
otherButton = if
\ do whatever else here
then
then
MainFormID FrmGetActiveFormID =
FrmGetActiveForm FrmVisible and
until
```

Michael Collas

Re: object not in form error

Posted by [Neal Bridges](#) on February 07, 1999 at 18:53:21:

In Reply to: *Re: object not in form error* posted by Michael Collas on February 06, 1999 at 20:53:27:

```
> > If you want to test a form and then drop back into the interpreter, make
sure
> > your form has a field with these attributes:
> > FIELD ID 1103 AT (0 80 160 11) LEFTALIGN SINGLELINE MAXCHARS 80 NONUSABLE
> > This is the field used by ACCEPT, and when it's not there and you drop
into
> the
> > interpreter, you get the 'Object not found in form' error.
> > I'll be updating the FAQ with this information on the next pass.
> > Neal

> I've also just re-shown the main Quartus form to drop back into the
interpreter.
```

```
Simpler yet -- just execute "MainForm" when you want the interpreter back;
it'll
close the current form, and bring up the main Quartus Forth form. The only
problem you might have is if your application form is also numbered 1000;
then
it would override the Quartus Forth form until you restart Quartus Forth.
```

Neal

Re: object not in form error

Posted by [Steven Donahue](#) on February 04, 1999 at 22:50:44:

In Reply to: *Re: object not in form error* posted by Neal Bridges on February 04, 1999 at 10:19:08:

> If you want to test a form and then drop back into the interpreter, make sure
> your form has a field with these attributes:
> FIELD ID 1103 AT (0 80 160 11) LEFTALIGN SINGLELINE MAXCHARS 80 NONUSABLE

Neal,

I notice that when I use Quartus Forth to generate a standalone executable, there are some resources in the PRC file that were not in the resource database used to create the application. This field that you mention above is one of them. It is in tFRM 1000, along with a GraffitiState resource entry. There is also a tFRM 1002 that contains this field as well as a Title resource. Neither of these frames were in my resource database.

Where did these these frames and their corresponding resources come from?

Re: object not in form error

Posted by [Neal Bridges](#) on February 05, 1999 at 10:25:50:

In Reply to: *Re: object not in form error* posted by Steven Donahue on February 04, 1999 at 22:50:44:

> > If you want to test a form and then drop back into the interpreter, make sure
> > your form has a field with these attributes:
> > FIELD ID 1103 AT (0 80 160 11) LEFTALIGN SINGLELINE MAXCHARS 80 NONUSABLE
>
> Neal,

> I notice that when I use Quartus Forth to generate a standalone executable,
> there are some resources in the PRC file that were not in the resource

database

> used to create the application. This field that you mention above is one of
> them. It is in tFRM 1000, along with a GraffitiState resource entry. There
is
> also a tFRM 1002 that contains this field as well as a Title resource.
Neither
> of these frames were in my resource database.

> Where did these these frames and their corresponding resources come from?
They're built-in to every stand-alone app by default; they allow simple apps
(using console I/O: TYPE, ACCEPT, etc.) to be written quickly without
creating
any new resources. They're quite small, but if you won't be using them you
can
delete one or both of them:

... MakePRC ...

BlankFormID (ID) tFRM DelRsrc drop
TitledFormID (ID) tFRM DelRsrc drop

Neal

Another basic Forth question - input from keyboard

Posted by [Barry Ekstrand](#) on February 03, 1999 at 17:30:13:

I'm trying to figure out what the Forth word is that tells the program input
is
needed from the keyboard before performing a mathematical calculation, and
thus
far haven't figured it out. The tutorials I have all are geared toward
running
Forth in a line-by-line interpretive mode (yes, I know I need some better
documentation - a trip to the bookstore is coming up). Can you clue me in on
this one? I appreciate your help once again.

Barry Ekstrand

Re: Another basic Forth question - input from keyboard

Posted by [Neal Bridges](#) on February 03, 1999 at 20:31:32:

In Reply to: *Another basic Forth question - input from keyboard* posted by Barry Ekstrand on February 03, 1999 at 17:30:13:

> I'm trying to figure out what the Forth word is that tells the program input is needed from the keyboard before performing a mathematical calculation, and thus far haven't figured it out. The tutorials I have all are geared toward running Forth in a line-by-line interpretive mode (yes, I know I need some better documentation - a trip to the bookstore is coming up). Can you clue me in on this one? I appreciate your help once again.

I suspect you're looking for input of, say, a number, or other string. Have a look at *input.txt* in the File Area -- it uses a module called *grsrc.zip*, also available there. It provides a popup for accepting strings from the user.

Neal

- [File Area](#)

Re: Another basic Forth question - input from keyboard

Posted by [Erwin Schomburg](#) on February 04, 1999 at 03:34:59:

In Reply to: *Re: Another basic Forth question - input from keyboard* posted by Neal Bridges on February 03, 1999 at 20:31:32:

> > I'm trying to figure out what the Forth word is that tells the program input is needed from the keyboard before performing a mathematical calculation, and thus far haven't figured it out. The tutorials I have all are geared toward running Forth in a line-by-line interpretive mode (yes, I know I need some better documentation - a trip to the bookstore is coming up). Can you clue me in

on

> > this one? I appreciate your help once again.

> I suspect you're looking for input of, say, a number, or other string. Have a

> look at *input.txt* in the File Area -- it uses a module called
> *qrsrc.zip*, also available there. It provides a popup for accepting
> strings from the user.

> Neal

Stripping away all comfort, the basic word for user input is ACCEPT (addr n ---), accepting a maximum of n characters from input for storage at addr and for display at current cursor position, as an editable field until concluded by a (Grafitti) Return.

/Erwin

Re: Another basic Forth question - input from keyboard

Posted by [Barry Ekstrand](#) on February 04, 1999 at 08:29:24:

In Reply to: *Re: Another basic Forth question - input from keyboard* posted by Erwin Schomburg on February 04, 1999 at 03:34:59:

Erwin,

Thanks for the reply, this is what I was looking for. I'm trying to get a basic understanding of the Forth wordset before attempting to deal with the Palm GUI, and this fills in one of the (many) holes for me. Thanks again.

Barry

> > > I'm trying to figure out what the Forth word is that tells the program input

> > is

> > > needed from the keyboard before performing a mathematical calculation, and

> thus

> > > far haven't figured it out. The tutorials I have all are geared toward

> > running

> > > Forth in a line-by-line interpretive mode (yes, I know I need some better

> > > documentation - a trip to the bookstore is coming up). Can you clue me in

> on

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accepting

> > strings from the user.

> > Neal

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> ---), accepting a maximum of n characters from input for storage at addr
and

for

> display at current cursor position, as an editable field until concluded by
a

> (Grafitti) Return.

> /Erwin

Dynamic Memory Allocation

Posted by [Daryl Lee](#) on February 03, 1999 at 14:49:47:

In a thread below on code size, Erwin Schomburg raised the notion of using dynamic memory allocation as a strategy for keeping code size small. I'd like to get some discussion on that, as I'm still getting cozy with the idea that in the Palm, it's all memory: files, data space, code space, and stack space. So here's my question.

If memory space is abundant, what difference does it make whether I use static or dynamic allocation? If memory space is limited, shouldn't I use static allocation to guarantee that my app will run? In other words, dynamic allocation seems to be counterintuitive in the context of the Palm.

Thoughts?

Daryl

Re: Dynamic Memory Allocation

Posted by [Neal Bridges](#) on February 03, 1999 at 15:12:42:

In Reply to: *Dynamic Memory Allocation* posted by Daryl Lee on February 03, 1999 at 14:49:47:

> In a thread below on code size, Erwin Schomburg raised the notion of using
> dynamic memory allocation as a strategy for keeping code size small. I'd
like
> to get some discussion on that, as I'm still getting cozy with the idea
that
in
> the Palm, it's all memory: files, data space, code space, and stack space.
So
> here's my question.

> If memory space is abundant, what difference does it make whether I use
static
> or dynamic allocation? If memory space is limited, shouldn't I use static
> allocation to guarantee that my app will run? In other words, dynamic
> allocation seems to be counterintuitive in the context of the Palm.

There are two 'types' of memory in the Palm; dynamic, and storage. Dynamic
memory is quite limited (max 64K or so, depending on the model -- as little
as
12K or so in the earliest models).

Dynamic memory is the normal full-access read/write type of memory, used as
working memory for apps (global variables, working space for forms and menus,
that sort of thing). Dynamic memory is the memory you're accessing when you
use
ALLOT or ALLOCATE.

Storage memory is where applications and stored data live. It's protected so
that accidental writes fail; in order to write to storage memory, you must
use a
special system call (DmWrite).

Erwin's point about using dynamically allocated memory is valid, but only a
concern in very restricted contexts. If you need to allocate memory that will
only be used during compile-time, and won't be used during run-time, the best
thing to do is to dynamically allocate that memory. See *doc.txt* for an
example of this -- it dynamically allocates a 4K region of dynamic memory to
use
when decompressing DOC files; clearly that memory is only needed during
compilation.

If you need a largish (large here has a rather different meaning that it
might,
say, in a desktop system) region of dynamic memory at run-time, it might also

make sense to dynamically allocate it; if you statically allocate it, it'll become part of your stand-alone application, making it larger.

I'll eventually be adding dataspace compression for stand-alone apps, at which time this will be even less of an issue than it is presently.

Neal

KeySetMask and EKEY

Posted by [Ron Doerfler](#) on February 03, 1999 at 13:10:56:

Hi Neal,

My question concerns EKEY. You mentioned before that it can pass hard key events if you mask off the keys so they don't produce a KeyDownEvent (which would be intercepted by the system to jump to the Address Book, etc.).

I have found the bits to set in the KeySetMask API (I have appended them below so others don't have to go find them in KeyMgr.h). I have masked them out in my "go" word as I have also shown below (simplified). (I have also restored them when I exit, as shown in the excerpt below of my simple-handler).

It is true now that no KeyDownEvent is generated by the hard keys. However, I'm not sure what to expect from EKEY. It certainly doesn't generate a KeyDownEvent itself at all. Does it just return an eventtype of NilEvent? Does it time out? If so, do I use (EKEY) with a small timeout value and then poll the keys after each return from (EKEY) using KeyCurrentState? At worst, I guess I could not mask the bits and just catch the KeyDownEvent in my simple-handler (as I do for other events I intercept) and I can search through the header files for the offset of the event address that will give the keycode (haven't done that yet--looking through header files is a pain, but I also will be using the soft keys, and they have some sort of virtual keycode).

Thanks for your help,

Ron Doerfler

```
/* *****  
* Definition of bit field returned from KeyCurrentState  
* ***** */  
#define keyBitPower 0x01 // Power key  
#define keyBitPageUp 0x02 // Page-up  
#define keyBitPageDown 0x04 // Page-down
```

```
#define keyBitHard1 0x08 // App #1
#define keyBitHard2 0x10 // App #2
#define keyBitHard3 0x20 // App #3
#define keyBitHard4 0x40 // App #4
#define keyBitCradle 0x80 // Button on cradle

#define keyBitsAll 0xFFFFFFFF // all keys

: my-handler ( &event. -- &event. )
callback 2dup @a
dup appStopEvent = if \ if exiting,
(hex) ffffffff. KeySetMask 2drop \ restore default key mask
(bye) drop 1 handled \ and call exit routine
else drop 0 handled then end-callback ;

: go
(hex) ffffff87. KeySetMask 2drop \ mask off hard round keys
begin \ event loop
ekey
\ Find if a hard key was pressed.
drop
again ;
```

Re: KeySetMask and EKEY

Posted by [Neal Bridges](#) on February 03, 1999 at 13:44:35:

In Reply to: *KeySetMask and EKEY* posted by Ron Doerfler on February 03, 1999 at 13:10:56:

> Hi Neal,

> My question concerns EKEY. You mentioned before that it can pass
> hard key events if you mask off the keys so they don't produce
> a KeyDownEvent (which would be intercepted by the system to jump
> to the Address Book, etc.).

> I have found the bits to set in the KeySetMask API (I have
> appended them below so others don't have to go find them in
> KeyMgr.h). I have masked them out in my "go" word as I have
> also shown below (simplified). (I have also restored them
> when I exit, as shown in the excerpt below of my simple-handler).

> It is true now that no KeyDownEvent is generated by the hard keys.
> However, I'm not sure what to expect from EKEY. It certainly
> doesn't generate a KeyDownEvent itself at all. Does it just
> return an eventtype of NilEvent? Does it time out? If so, do

> I use (EKEY) with a small timeout value and then poll the keys
> after each return from (EKEY) using KeyCurrentState? At worst,
> I guess I could not mask the bits and just catch the KeyDownEvent in
> my simple-handler (as I do for other events I intercept) and I can
> search through the header files for the offset of the event address
> that will give the keycode (haven't done that yet--looking
> through header files is a pain, but I also will be using the
> soft keys, and they have some sort of virtual keycode).

Interesting! You're right, the keyDown events for masked hardkeys don't appear as EKEY events. I'll fix that.

Neal

FORMS/RESOURCES

Posted by [JOE WALDNER](#) on February 03, 1999 at 10:57:36:

I WORK ALMOST EXCLUCIVLY IN Forth AND I HAVE NO TROUBLE UNDERSTANDING MOST OF THE CODE, BUT I DON'T QUITE INDRSTAND HOW TO BUILD THE FORMS FOR USE IN APPLICATIONS I MIGHT WRITE. HOW WOULD YOU SUGGEST I START WITH SAY, DISPLAYNGING A SIMPLE FORM WITH A BUTTON?

NOTE: I UNDERSTAND INPUT.TXT AS FAR AS ACTUALLY SHOWING THE FORM AND PUTTING IN THE TITLE FIELD WHAT I WANT TO PUT THERE. WHAT I DONT UNDERSTAND IS WHERE THE FORM CAME FROM. (IS THIS MAKING ANY SENSE ??

THANKS,

Re: FORMS/RESOURCES

Posted by [Neal Bridges](#) on February 03, 1999 at 11:34:37:

In Reply to: *FORMS/RESOURCES* posted by JOE WALDNER on February 03, 1999 at 10:57:36:

> I WORK ALMOST EXCLUCIVLY IN Forth AND I HAVE NO TROUBLE UNDERSTANDING MOST OF
> THE CODE, BUT I DON'T QUITE INDRSTAND HOW TO BUILD THE FORMS FOR USE IN
> APPLICATIONS I MIGHT WRITE. HOW WOULD YOU SUGGEST I START WITH SAY,
> DISPLAYNGING A SIMPLE FORM WITH A BUTTON?

> NOTE: I UNDERSTAND INPUT.TXT AS FAR AS ACTUALLY SHOWING THE FORM AND PUTTING

IN

> THE TITLE FIELD WHAT I WANT TO PUT THERE. WHAT I DONT UNDERSTAND IS WHERE THE

> FORM CAME FROM. (IS THIS MAKING ANY SENSE ??

You're making sense. Resources (forms, buttons, etc.) can be generated in a couple of ways. One way is with a program called PilRC (available from the Online Resources page); it runs on the desktop and creates resources using a simple scripting language. See the sample programs Year and Duco in the manual

for an example of how to use PilRC to generate resources.

Another way is to use RsrcEdit; it runs on-board the Palm and directly creates resources from the parameters you specify. It's also available from the Online Resource Page.

Neal

Size of stand alone PRC?

Posted by [Branko Znuderl](#) on February 03, 1999 at 03:02:36:

My question is what influences size of stand alone PRC?

Sub-questions:

If I include (or needs) some standart part of code, but actually NOT NEEDS every word in this stanard code in my stand alone PRC - does this not needed words get compilet in stand alone PRC and so makes it bigger by size?

Branko

Re: Size of stand alone PRC?

Posted by [Neal Bridges](#) on February 03, 1999 at 03:07:06:

In Reply to: *Size of stand alone PRC?* posted by Branko Znuderl on February 03, 1999 at 03:02:36:

> My question is what influences size of stand alone PRC?

> Sub-questions:

> If I include (or needs) some standart part of code,
> but actualy NOT NEEDS every word in this stanard code
> in my stand alone PRC - does this not needed words
> get compilet in stand alone PRC and so makes it
> bigger by size?

> Branko

Only the words you use in your app (and the words those words use, etc.) are included in stand-alone PRCs. This keeps the resulting footprint quite small.

Neal

Re: Size of stand alone PRC?

Posted by [Branko Znuderl](#) on February 03, 1999 at 03:16:29:

In Reply to: *Re: Size of stand alone PRC?* posted by Neal Bridges on February 03, 1999 at 03:07:06:

> Only the words you use in your app (and the words those words use, etc.) are
> included in stand-alone PRCs. This keeps the resulting footprint quite small.

> Neal

Uf, that is very nice - you and your Quartus ARE indid sharp ;-)

Branko

Re: Size of stand alone PRC?

Posted by [Erwin Schomburg](#) on February 03, 1999 at 11:05:06:

In Reply to: *Re: Size of stand alone PRC?* posted by Branko Znuderl on February 03, 1999 at 03:16:29:

> > Only the words you use in your app (and the words those words use, etc.) are
> > included in stand-alone PRCs. This keeps the resulting footprint quite small.

> > Neal

> Uf, that is very nice - you and your Quartus ARE indid sharp ;-)

> Branko

One teardrop in code optimization: ALLOTted data is **not** optimized, so if you are really getting anal for resulting .prc size, it is advised to use dynamic memory for data only needed outside the resulting code (e.g. temporary helper buffers, like its done for the doc-include module).

/Erwin

VFE-IDE Resources Development

Posted by [Gary Learned](#) on February 02, 1999 at 17:40:06:

Has anyone looked at VFE-IDE
'<http://ourworld.compuserve.com/homepages/haraldwildgrube/Page201.htm>' as a tool
for resource development for Quartus? I'd be interested in any thoughts.

G

Re: VFE-IDE Resources Development

Posted by [Neal Bridges](#) on February 02, 1999 at 18:47:13:

In Reply to: *VFE-IDE Resources Development* posted by Gary Learned on February 02, 1999 at 17:40:06:

> Has anyone looked at VFE-IDE
> '<http://ourworld.compuserve.com/homepages/haraldwildgrube/Page201.htm>' as a tool
> for resource development for Quartus? I'd be interested in any thoughts.

You might also look at PilotMAG; it generates PilRC .RCP files which can be used as show in the Quartus Forth sample code to generate resources you can use from your Quartus Forth apps.

Neal

Re: VFE-IDE Resources Development

Posted by [Barry Ekstrand](#) on February 03, 1999 at 08:07:18:

In Reply to: *Re: VFE-IDE Resources Development* posted by Neal Bridges on February 02, 1999 at 18:47:13:

I can't reply to the original question, using VFD-IDE with Quartus, as I'm a true beginner with Forth. However, I did pick up a copy of VFD-IDE to use with the Pilot GCC package and can attest to several things: VFD-IDE works very well, is a solid package, is relatively inexpensive, and most importantly (to me) the developer, Ole Grossklaus, is extremely responsive to inquiries / help requests. VFD-IDE can generate the pilrc .rcp files alone or call the compiler as well as you desire. Once I get to the point of dealing with the GUI in Quartus (assuming I make it that far!) I intend to use VFD-IDE for this purpose. It has my full endorsement.

Barry Ekstrand

> > Has anyone looked at VFE-IDE
> > 'http://ourworld.compuserve.com/homepages/haraldwildgrube/Page201.htm' as
> a
> tool
> > for resource development for Quartus? I'd be interested in any thoughts.
> You might also look at PilotMAG; it generates PilRC .RCP files which can be
> used
> as show in the Quartus Forth sample code to generate resources you can use
> from
> your Quartus Forth apps.
> Neal

RsrcEdit

Posted by [Mike Will](#) on February 03, 1999 at 15:07:48:

In Reply to: *Re: VFE-IDE Resources Development* posted by Barry Ekstrand on February 03, 1999 at 08:07:18:

Here's my two cents' worth:

I really like RsrcEdit for the Palm, for the same reasons I like Quartus -- no

desktop required. I can modify and test a resource database anywhere, anytime.

Once in a while when I want hold an RCP file in my hand, I just use the PRC2pilrc java program that comes with PilRC. It generates the file format Neal

uses for demo programs such as Duco, directly from RsrcEdit files. Well worth the hour you have to spend fighting with Java to make it work :)

Mike

More beginner questions - math

Posted by [Barry Ekstrand](#) on February 02, 1999 at 14:27:19:

Hi,

I saw the posting that said Quartus uses a separate stack for floating point calculations (this means there are 3 stacks: parameter, return, and floating point?). My problem is that I can't seem to 'see' the fp stack. For an easy example, lets say I want to put a number on the stack and get the square root of it. As far as I can tell, the only word in Forth to do a square

root calculation is FSQRT, so I assume I have to use the >FLOAT word to convert

my entry to a floating point number (putting it on the fp stack??) and then do

FSQRT. My entries are:

25. OK

>float OK

FSQRT OK

Now, to see the value, I need a word to look at the fp stack. I thought this was F., but Quartus doesn't understand that. If I use .S, my stack is shown as

empty, which I assume means the entry was moved to the fp stack.

Am I understanding the mechanics of this correctly? If so, how do I look at the fp stack? Am I correct in assuming that all built-in complex math manipulation will have to be done with floating point calculations?

Once again, thanks for helping us beginners!

Barry Ekstrand

Re: More beginner questions - math

Posted by [Neal Bridges](#) on February 02, 1999 at 14:40:01:

In Reply to: *More beginner questions - math* posted by Barry Ekstrand on February 02, 1999 at 14:27:19:

> I saw the posting that said Quartus uses a separate stack for floating
> point calculations (this means there are 3 stacks: parameter, return, and
> floating point?). My problem is that I can't seem to 'see' the fp stack.
For
> an easy example, lets say I want to put a number on the stack and get the
> square root of it. As far as I can tell, the only word in Forth to do a
square
> root calculation is FSQRT, so I assume I have to use the >FLOAT word to
convert
> my entry to a floating point number (putting it on the fp stack??) and then
do
> FSQRT. My entries are:

> 25. OK
> >float OK
> FSQRT OK

Couple of problems here. You don't need >FLOAT. The Standard word >FLOAT
converts an ASCII string into a float on the floating-point stack. Here's an
example:

```
: myfloat s" 3.1415926e0" >float drop ;
```

Second, 25. is not a floating-point value; it's a double-cell (32-bit)
integer.

25e0 would be the floating-point equivalent. Floats in source have to contain
an 'e' or a 'd' and an exponent to be recognized as floating-point values.

```
25e0 FSQRT FS.
```

will do what you're looking for.

> Once again, thanks for helping us beginners!

Anytime!

Neal

Quartus Forth now listed at 3Com's site!

Posted by [Neal Bridges](#) on February 02, 1999 at 14:24:09:

3Com has posted Quartus Forth on their "Development Resources/Software Development Kits" page. It's at the link below.

Neal

- [3Com Palm Development Resources/Software Development Kits](#)

Re: Quartus Forth now listed at 3Com's site!

Posted by [Daryl Lee](#) on February 03, 1999 at 14:51:58:

In Reply to: *Quartus Forth now listed at 3Com's site!* posted by Neal Bridges on February 02, 1999 at 14:24:09:

> 3Com has posted Quartus Forth on their "Development Resources/Software Development Kits" page. It's at the link below.

Congratulations! Not only have you done yourself proud, but I believe you've also advanced the Forth world in general. Of course, now you'll never get any peace!

Daryl

Re: Quartus Forth now listed at 3Com's site!

Posted by [Neal Bridges](#) on February 04, 1999 at 15:51:02:

In Reply to: *Re: Quartus Forth now listed at 3Com's site!* posted by Daryl Lee on February 03, 1999 at 14:51:58:

> > 3Com has posted Quartus Forth on their "Development Resources/Software Development Kits" page. It's at the link below.

> Congratulations! Not only have you done yourself proud, but I believe you've
> also advanced the Forth world in general. Of course, now you'll never get any
> peace!

Thanks, Daryl. If I wanted peace, I'd be in a different line of work :)

Neal

Re: Quartus Forth now listed at 3Com's site!

Posted by [Mike Will](#) on February 02, 1999 at 14:36:00:

In Reply to: *Quartus Forth now listed at 3Com's site!* posted by Neal Bridges on February 02, 1999 at 14:24:09:

> 3Com has posted Quartus Forth on their "Development Resources/Software
> Development Kits" page. It's at the link below.

> Neal

Hmmm. That's interesting. I've been attending a few seminars conducted by 3COM,

Sybase and Oracle lately. Invariably, one of the questions from the floor is, "But we hate CodeWarrior. Why can't we develop in one of the other available tools?" - with Pendragon and Satellite forms being the main candidates.

Perhaps

now Quartus will start getting some notice from the enterprise database community, which is lapping up WorkPads faster than IBM can pack 'em.

Mike

GetObjectPtr

Posted by [Mike Will](#) on February 02, 1999 at 14:16:06:

Neal, in the source file Fields, you refer to a function called GetObjectPtr a

couple of times. I assume you mean FrmGetObjectPtr. I can't say for sure yet because my code is still pretty buggy (how's that for an oxymoron?).

Mike

Re: GetObjectPtr

Posted by [Neal Bridges](#) on February 02, 1999 at 14:21:32:

In Reply to: *GetObjectPtr* posted by Mike Will on February 02, 1999 at 14:16:06:

> Neal, in the source file *Fields*, you refer to a function called
GetObjectPtr a
> couple of times. I assume you mean *FrmGetObjectPtr*. I can't say for sure
yet
> because my code is still pretty buggy (how's that for an oxymoron?).
> Mike

I mean *GetObjectPtr* -- it's a wrapper for *FrmGetObjectPtr*, contained in
Forms.txt. *Fields.txt* should have a *needs Forms*
at the top; I'll correct that.

GetObjectPtr does a *FrmGetObjectPtr*, but first queries the active form.
Cleans
things up a bit.

Neal

Reading Records from a Database (Problem)

Posted by [Lou Solomon](#) on February 02, 1999 at 13:19:19:

Neal:

I've resumed trying to build my "isam" simulation words, and I've run into a
problem reading records.

Rather than give you all my routines, I'm hoping you can look at the
code fragments below and tell me what I'm doing wrong. Basically, when I
try to read the record, I get a FATAL EXCEPTION pilot dialog box. A hard
reset (button in back) is always needed!.

I'm pretty sure I'm creating (and populating) the file OK, as various
utilities (FILE MANGER, RESOURCE EDIT) which verifies the file information,
and both the # of records, and with RSCEDIT, I can even look at the records.
In addition the *DmNumRecords* call after the open successfully returns the
number of records I have in my file.

My guess is that I'm calling *DMQUERYRECORD* (or *DmGetRecord*) with the
wrong types or order, or I'm missing a previous call that was needed.

Thanks in advance....

Lou

```
\ needs left out for brevity
\ init variables used section
2variable file_handle
variable record_index
2variable record_handle
ID XXXX ID YYYY
0 constant card_num
\ =====
: isam_open_file \ opens file
dmModeReadWrite YYYY XXXX \the ID's I'm using temporarily
DmOpenDatabaseByTypeCreator
2dup or 0= if abort
then file_handle 2!
." FILE OPEN SUCCESS!" ;

: isam_get_record ( index fhandle)
record_index @ \ rec ind
file_handle 2@ \ handle of file
\*** THE FATAL ERROR OCCURS ON THE NEXT CALL
DmgetRecord \ return handle
2dup or 0= if abort \ check error
then record_handle 2! \ store handle
;

\ =====
\ FOLLOWING IS THE RUNTIME PART OF IT
\ =====
isam_open_file
dmnumrecords $ \verify number of records
5 record_index !
isam_get_record
```

Re: Reading Records from a Database (Problem)

Posted by [Neal Bridges](#) on February 02, 1999 at 14:03:29:

In Reply to: *Reading Records from a Database (Problem)* posted by Lou Solomon on February 02, 1999 at 13:19:19:

> Neal:

> I've resumed trying to build my "isam" simulation words, and I've run into a
> problem reading records.

> Rather than give you all my routines, I'm hoping you can you can look at the
> code fragments below and tell me what I'm doing wrong. Basically, when I
> try to read the record, I get a FATAL EXCEPTION pilot dialog box. A hard
> reset (button in back) is always needed!.

> I'm pretty sure I'm creating (and populating) the file OK, as various
> utilities (FILE MANGER, RESOURCE EDIT) which verifies the file information,
> and both the # of records, and with RSCEDIT, I can even look at the
records.

> In addition the DmNumRecords call after the open successfully returns the
> number of records I have in my file.

> My guess is that I'm calling DMQUERYRECORD (or DmGetRecord) with the
> wrong types or order, or I'm missing a previous call that was needed.

Your call to DmGetRecord looks OK. It's similar to the code in *doc.txt*. The only thing that comes to mind is that perhaps you don't have a record #5 in the database in question.

As an aside, you have a stack comment of (index fhandle) on your *isam_get_record* word -- but that word doesn't appear to take any paramters (you're passing your arguments via variables).

What model of PalmPilot do you have? I'd be happy to test against the specific ROM version.

Neal

Re: Reading Records from a Database (Problem)

Posted by [lou solomon](#) on February 02, 1999 at 22:59:05:

In Reply to: *Re: Reading Records from a Database (Problem)* posted by Neal Bridges on February 02, 1999 at 14:03:29:

Neal:

I was running the example I sent you, and I noticed that I left in the *dmnumrecords*. Sorry, that should be commented out.

Lou

Re: Reading Records from a Database (Problem)

Posted by [Lou Solomon](#) on February 02, 1999 at 15:48:56:

In Reply to: *Re: Reading Records from a Database (Problem)* posted by Neal Bridges on February 02, 1999 at 14:03:29:

Neal:

Here is the offending code (and to Forth programmers, probably offensive also).

Note that when I run the code through a second time (after creating and populating the file), I comment out that section. Of course, the code should do this for me, but I'm still in the just trying to get it working.

```
\ isamtest LS 02-Feb-1998 3:01
needs core-ext
needs toolkit
needs zstrings
needs ids
needs DataMgr

2variable file_handle
variable record_index
2variable record_handle
2variable chunk_handle
create write_string 50 chars allot
2variable string_address
ID XXX1 ID YYY1
0 constant card_num
: name_ptr z" TESTDB" ;
\ ===== create file =====
: isam_create_file ( creates a palm database )
false XXX1 YYY1
name_ptr drop >abs card_num
dmCreateDatabase
dup 0=
if ." file created ok" drop
else ." file error -> " . then ;
\ ===== open file =====
: isam_open_file ( opens file )
dmModeReadWrite YYY1 xxx1
DmOpenDatabaseByTypeCreator 2dup or 0= if
cr ." file cant be opened "
key drop abort
then
file_handle 2!
cr ." file opened success!" cr ;
```

```

\ ==== add/write record =====
: isam_add_record
30 s>d \ size of record (test) record_index >abs \ rec ind
file_handle 2@ \ handle of file
DmNewRecord \ ret handle
2dup or 0= throw
record_handle 2! \ store
record_handle 2@ \ recall
MemHandleLock \ lock chunk
chunk_handle 2!
10. \ bytes to write as double
string_address 2@ \ address of write
0. \ offset into record dbl
chunk_handle 2@
dmwrite
." stack after dmwrite " $ key drop
record_handle 2@
MemHandleUnLock ;
\ ==== get record by index =====
: isam_get_record
record_index @ \ rec ind
file_handle 2@ \ handle of file
DmgetRecord \ return handle
2dup or 0= if \ check error
." record bad " then
." record read ok"
record_handle 2! \ store handle
record_handle 2@ \ recall
MemHandleLock \ lock chunk
chunk_handle 2! \ store ptr
MemHandleUnLock
;
\ POPULATE FILE
\ add recs at beginning of file
0 record_index !
\ =====
\ create strings and write 6 recs
\ apologies for the crude code
\ =====
: s1 s" first record " ;
: s2 s" second record " ;
: s3 s" third record " ;
: s4 s" fourth record " ;
: s5 s" fifth record " ;
: s6 s" sixth record " ;
: populate
s1 drop >abs 2dup
string_address 2!
isam_add_record
s2 drop >abs 2dup

```

```
string_address 2!  
isam_add_record  
s3 drop >abs 2dup  
string_address 2!  
isam_add_record  
s4 drop >abs 2dup  
string_address 2!  
isam_add_record  
s5 drop >abs 2dup  
string_address 2!  
isam_add_record  
s6 drop >abs 2dup  
string_address 2!  
isam_add_record ;  
\ ==== end of populate ====  
\  
\ =====  
\ START OF RUNTIME CODE  
\ =====  
isam_create_file \ create file  
isam_open_file \ open file  
populate \ populate file with 6 recs  
\  
\ display number of records  
dmnumrecords  
.( number of recs ) $ key drop  
3 record_index !  
isam_get_record  
.( stack after isam ge ) $ key drop
```

Re: Reading Records from a Database (Problem)

Posted by [Lou Solomon](#) on February 02, 1999 at 14:19:30:

In Reply to: *Re: Reading Records from a Database (Problem)* posted by Neal Bridges on February 02, 1999 at 14:03:29:

Neal:

Thanks for the quick response (amazing!)

> Your call to DmGetRecord looks OK. It's similar to the code in
> *doc.txt*. The only thing that comes to mind is that perhaps you
don't have a record #5 in the database in question.

That brings up an interesting point. I definitely have 6 records in the database (as reported by DmNumRecords and the other utilities), but I'm wondering if I can truly access the 6 records by individual numbers 1 through 6. Maybe their "record number" is not relative to 0 or something like that. I'll try some other numbers.

```
> As an aside, you have a stack comment of ( index fhandle ) on your
> isam_get_record word -- but that word doesn't appear to take any paramters
> (you're passing your arguments via variables).
```

The comments are definitely in limbo. That was probably a relic of an earlier framework (or possibly a future one:)

```
> What model of PalmPilot do you have? I'd be happy to test against the
specific ROM version.
```

I'm using the Palm 3 OS, via the 2MB upgrade to a Palm Personal. As for testing it, I would love you to. I'll get all the code together (including the write routine) and send it up.

Thanks,

Lou

Registration code: possible delay

Posted by [Neal Bridges](#) on February 01, 1999 at 19:49:45:

There's been a slight delay in getting sales reports from PilotGear; if anyone has registered and wonders why I'm not getting back to them, it's because I haven't heard about it yet. I'm in discussion with them and hope to have it remedied very soon indeed.

Neal

fIdEnterEvent

Posted by [Mike Will](#) on February 01, 1999 at 17:44:59:

Neal,
Thanks for your help with conditional compilation, perfect. Not only does it work, but it brings the full power of Quartus to the process instead of the hokey stripped-down precomp in most C's.

I'm having a problem trapping the `fldEnterEvent` (15) using `ekey`. I get the `penDownEvent` and `penUpEvent`, but no `fldEnterEvent` in between as per the WinSDK docs from 3COM. I can, however, successfully trap it with a modified version of simple-handler. Is this normal?
Thanks
Mike

Re: fldEnterEvent

Posted by [Neal Bridges](#) on February 01, 1999 at 19:19:31:

In Reply to: *fldEnterEvent* posted by Mike Will on February 01, 1999 at 17:44:59:

> Neal,
> Thanks for your help with conditional compilation, perfect. Not only does it
> work, but it brings the full power of Quartus to the process instead of the
> hokey stripped-down precomp in most C's.

> I'm having a problem trapping the `fldEnterEvent` (15) using `ekey`. I get the
> `penDownEvent` and `penUpEvent`, but no `fldEnterEvent` in between as per the
WinSDK
> docs from 3COM. I can, however, successfully trap it with a modified
version
of
> simple-handler. Is this normal?

Sounds like `fldEnterEvents` will require me to make an internal mod to ensure they're exported from EKEY. I've put it on the list. Thanks!

Neal

Documentation/samples suggestions

Posted by [Dave Steele](#) on February 01, 1999 at 17:29:49:

I've just sent in for my registration. Your product represent a great value, particularly considering the excellent support you provide here.

Having said that, here is a suggestion that would have allowed me to come to that conclusion more quickly. Make a sample app that does nothing but support every GUI element you can think of. Use two forms that can be toggled

between, a couple of one and two-button dialogs, and a bitmap or two. This skeleton would be easier to build from than the apps supplied.

Show how pila is involved in the process, and how pilot-file (in the pilot-link package) tells you what pila/pilrc really did. (I have stand-alone bitmap resources. Ignorance on these two minor points cost a lot of time.)

Thanks again for implementing a great idea.

Re: Documentation/samples suggestions

Posted by [Neal Bridges](#) on February 01, 1999 at 19:38:25:

In Reply to: *Documentation/samples suggestions* posted by Dave Steele on February 01, 1999 at 17:29:49:

> I've just sent in for my registration. Your product represent a great value,

> particularly considering the excellent support you provide here.

> Having said that, here is a suggestion that would have allowed me to come to

> that conclusion more quickly. Make a sample app that does nothing but support

> every GUI element you can think of. Use two forms that can be toggled between,

a

> couple of one and two-button dialogs, and a bitmap or two. This skeleton would

> be easier to build from than the apps supplied.

> Show how pila is involved in the process, and how pilot-file (in the pilot-link

> package) tells you what pila/pilrc really did. (I have stand-alone bitmap > resources. Ignorance on these two minor points cost a lot of time.)

> Thanks again for implementing a great idea.

Thanks, that's a very good idea Dave. Be sure and pose any questions that come to mind as you go forward.

Neal

Deferred wordset

Posted by [Ingo Mathyl](#) on February 01, 1999 at 16:21:21:

Hi Neal,

have you got any plans for a deferred wordset in QUARTUS?
I like to use the DOER/MAKE words by Leo Brodie. I've never seen
an implementation for ANS-Forth. Do you know where I can find it?

Thanks Ingo

Re: Deferred wordset

Posted by [Neal Bridges](#) on February 01, 1999 at 16:58:02:

In Reply to: *Deferred wordset* posted by Ingo Mathyl on February 01, 1999 at
16:21:21:

> Hi Neal,

> have you got any plans for a deferred wordset in QUARTUS?
> I like to use the DOER/MAKE words by Leo Brodie. I've never seen
> an implementation for ANS-Forth. Do you know where I can find it?

I'm working on a DEFER/IS wordset for Quartus Forth. Coming soon!

Neal

use of MORE

Posted by [Ken Butterfield](#) on February 01, 1999 at 15:26:26:

Hi Neal

I am wondering how to use MORE for pagination. I have not found any examples
in
the file area and the documentation does not say how to use the newsetting or
oldsetting.

Thanks Ken Butterfield

Re: use of MORE

Posted by [Neal Bridges](#) on February 01, 1999 at 16:57:08:

In Reply to: *use of MORE* posted by Ken Butterfield on February 01, 1999 at 15:26:26:

> Hi Neal

> I am wondering how to use MORE for pagination. I have not found any examples

in

> the file area and the documentation does not say how to use the newsetting or

> oldsetting.

It's a boolean setting.

true more drop

will switch pagination on;

false more drop

will switch it off.

Neal

Re: use of MORE and a version of square root

Posted by [Ken Butterfield](#) on February 01, 1999 at 20:13:44:

In Reply to: *Re: use of MORE* posted by Neal Bridges on February 01, 1999 at 16:57:08:

> > Hi Neal

> > I am wondering how to use MORE for pagination. I have not found any examples

> in

> > the file area and the documentation does not say how to use the newsetting or

> > oldsetting.

> It's a boolean setting.

```
> true more drop
> will switch pagination on;
> false more drop
> will switch it off.
> Neal
```

Thanks Neal I will give this a try.

I also thought you might like to give this square root a try

```
\ SQR 99-01-31 KBB
```

```
( Square root using [ a + b ]^2 method KBB Sept 22 1990 )
```

```
: (SQR) ( LO HI RESULT ... LO HI RESULT )
```

```
8 0 DO
```

```
>R D2* D2*
```

```
R> 2* DUP >R
```

```
2* 1+
```

```
OVER SWAP -
```

```
DUP 0< IF
```

```
DROP R>
```

```
ELSE
```

```
NIP R> 1+
```

```
THEN
```

```
LOOP
```

```
;
```

```
: SQR ( N ... N1 ) ( return square root of single number )
```

```
0 0 (SQR)
```

```
NIP NIP
```

```
;
```

```
: DSQR ( D -- N ) ( return square root of double number )
```

```
0 0 (SQR)
```

```
ROT DROP (SQR)
```

```
NIP NIP
```

```
;
```

Re: use of MORE and a version of square root

Posted by [Neal Bridges](#) on February 02, 1999 at 15:10:18:

In Reply to: *Re: use of MORE and a version of square root* posted by Ken Butterfield on February 01, 1999 at 20:13:44:

> I also thought you might like to give this square root a try

Neat stuff, Ken. I've surrounded it here in PRE /PRE tags so that it displays with indentation. Thanks! Do you mind if I post it in the File Area?

```
\ SQR 99-01-31 KBB
```

```
( Square root using [ a + b ]^2 method KBB Sept 22 1990 )
```

```
: (SQR) ( LO HI RESULT ... LO HI RESULT )
```

```
8 0 DO
```

```
>R D2* D2*
```

```
R> 2* DUP >R
```

```
2* 1+
```

```
OVER SWAP -
```

```
DUP 0< IF
```

```
DROP R>
```

```
ELSE
```

```
NIP R> 1+
```

```
THEN
```

```
LOOP
```

```
;
```

```
: SQR ( N ... N1 ) ( return square root of single number )
```

```
0 0 (SQR)
```

```
NIP NIP
```

```
;
```

```
: DSQR ( D -- N ) ( return square root of double number )
```

```
0 0 (SQR)
```

```
ROT DROP (SQR)
```

```
NIP NIP
```

```
;
```

Re: use of MORE and a version of square root

Posted by Ken Butterfield on February 05, 1999 at 00:17:53:

In Reply to: *Re: use of MORE and a version of square root* posted by Neal Bridges on February 02, 1999 at 15:10:18:

> > I also thought you might like to give this square root a try

> Neat stuff, Ken. I've surrounded it here in PRE /PRE tags so that it displays

> with indentation. Thanks! Do you mind if I post it in the File Area?

I would not mind at all. I would be pleased. I believe there was a square root discussion a few years ago in the Forth Dimensions magazine that gave rise to this version. I had been using Newton's method from this same thread but found this technique is easier to translate into machine language. In fact the first version of the $(a+b)^2$ successive approximation that I saw was for the old KIM board that predated the Apple II and Comodore Pet. This technique is also directly related to the long hand method of square root extraction that I was taught in Jr. High except it is done in base 2 instead of base 10. It really screams in the 68hc11 machine code and I may be translating it for the 68000 machine language. As it stands in FORTH, it takes 7 seconds to run 10000 square roots which is probably fast enough for anything but real time signal processing.

Forth on intel platform

Posted by [Gary Learned](#) on February 01, 1999 at 15:01:15:

Now that I'm getting back into Forth, I'm finding I'd like a copy on my PC as well for prototyping, Q&D stuff and playing in general. Any suggestions on the best PD or commercial system to get?

Thanks,
Gary

Re: Forth on intel platform

Posted by [Neal Bridges](#) on February 01, 1999 at 16:56:25:

In Reply to: *Forth on intel platform* posted by Gary Learned on February 01, 1999 at 15:01:15:

> Now that I'm getting back into Forth, I'm finding I'd like a copy on my PC as well for prototyping, Q&D stuff and playing in general. Any suggestions on the best PD or commercial system to get?

Gary, I use gForth for Q&D work on the PC. You can hunt it down via www.forth.org -- I'll post a better URL later.

Neal

Re: Forth on intel platform

Posted by [Daryl Lee](#) on February 03, 1999 at 14:57:23:

In Reply to: *Re: Forth on intel platform* posted by Neal Bridges on February 01, 1999 at 16:56:25:

> > Now that I'm getting back into Forth, I'm finding I'd like a copy on my PC as well for prototyping, Q&D stuff and playing in general. Any suggestions on the best PD or commercial system to get?

I used Win32Forth for a while, but dropped it because I have to work when I'm in the office, and don't "play" when I'm at home. Try <ftp://ftp.taygeta.com/pub/forth/compilers/native/windows/Win32For/> and see if you have any luck.

Daryl

word redefinitions

Posted by [Ken Butterfield](#) on February 01, 1999 at 14:22:17:

Hi Neal

I am moving lots of old code (fig forth)into Quartus. I would find it usefull to be told if I am redefining existing words. Is there a way to get the 'not unique' message?

Thanks, Ken Butterfield

Re: word redefinitions

Posted by [Neal Bridges](#) on February 01, 1999 at 19:47:13:

In Reply to: *word redefinitions* posted by Ken Butterfield on February 01, 1999 at 14:22:17:

> Hi Neal

> I am moving lots of old code (fig forth)into Quartus. I would find it usefull to

> be told if I am redefining existing words. Is there a way to get the 'not unique' message?

> Thanks, Ken Butterfield

Ken, I've just posted *redefine.txt*, a module written by Wade Johnson originally for PilotFORTH. It's in the Quartus Forth File Area; I've tested it under Quartus Forth 1.1.0 and it does just what you're looking for.

Neal

- [File Area](#)

Conditional Assembly

Posted by [Mike Will](#) on February 01, 1999 at 11:23:37:

I'm writing larger and larger programs these days, and the need for conditional assembly (or a pre-compiler in C terms) has cropped up. I would like to do something like:

```
testing? if
  : verbose-printout ... ;
  : test-report ... ;
  : load-rsrc ... ;
else
  : normal-prinout ... ;
then
```

This would involve more than just DEFER'ing words. I need to cut out whole great chunks of code in the non-testing version. I suspect that the answer involves the criticism that I'm thinking in C, not Forth, but I'm trying.

Thanks in advance.
Mike

Re: Conditional Assembly

Posted by [Neal Bridges](#) on February 01, 1999 at 12:50:07:

In Reply to: *Conditional Assembly* posted by Mike Will on February 01, 1999 at 11:23:37:

```
> I'm writing larger and larger programs these days, and the need for
> conditional
> assembly (or a pre-compiler in C terms) has cropped up.
> I would like to do something like:
```

```
>
>
> testing? if
>   : verbose-printout ... ;
>   : test-report ... ;
>   : load-rsrc ... ;
> else
>   : normal-prinout ... ;
> then
>
```

> This would involve more than just DEFER'ing words. I need to cut out whole
> great chunks of code in the non-testing version. I suspect that the answer
> involves the criticism that I'm thinking in C, not Forth, but I'm trying.

What you want is [IF] [ELSE] [THEN], from *tools-ext.txt*.

Neal

Beginner Questions

Posted by [Barry Ekstrand](#) on January 30, 1999 at 13:27:59:

Hi,

I've just begun looking at the evaluation copy of Quartus and am intrigued. I have never programmed in Forth, but have dabbled over the years in versions of BASIC, Fortran (long ago) and C (a very little bit). I like the idea of being able to code in spare moments throughout the day, wherever you are.

I downloaded a Forth tutorial, but it appears there are some differences in Quartus vs the tutorial I have. First, and most importantly, when I tried to use the @ word to read the value of a memory address, I get a fatal reset every time. I am following what I think is ANSI Forth convention, as in:

```
300 constant b
' b
' b @
```

When I use the above code from the command line, I get an OK after the first and second entries, but a crash on the third. If I use the .S word after the second entry I see the memory address of b. Can anyone tell me how to use the @ and ! words to look at memory address values and input them?

Second question: it appears to me that in Quartus, a Boolean true is returned as -1 rather than 1. Is this correct?

Last question: looking way down the road for me, when I get to the point of trying to build a program that uses the Palm graphical interface, is there any utility to assist building a form like there is on the PC when programming in C, or do you have to figure out how to define all buttons, bitmaps, etc. from inside the program (I'm assuming this to be the case, but hoping there is a simpler approach).

Apologies in advance for what may seem very basic questions, but I will greatly appreciate any and all assistance.

Regards,

Barry Ekstrand

Re: Beginner Questions

Posted by [Neal Bridges](#) on January 30, 1999 at 15:45:43:

In Reply to: *Beginner Questions* posted by Barry Ekstrand on January 30, 1999 at 13:27:59:

> I downloaded a Forth tutorial, but it appears there are some differences in Quartus vs the tutorial I have. First, and most importantly, when I tried to use the @ word to read the value of a memory address, I get a fatal reset every time. I am following what I think is ANSI Forth convention, as in:

```
> 300 constant b
> ' b
> ' b @
```

> When I use the above code from the command line, I get an OK after the first and second entries, but a crash on the third. If I use the .S word after the second entry I see the memory address of b. Can anyone tell me how to use the @ and ! words to look at memory address values and input them?

You don't need to use '. There may be some Forth somewhere in which you can create a constant, tick (') it, and get its value, but it's not something guaranteed to work cross-platform. Fortunately there's no need to do it.

```
300 constant b
b @
```

will return the contents of memory address 300.

```
variable b
5 b !
b @ .
```

will create a variable named b, store 5 in it, and then retrieve that 5 and print it on the screen.

> Second question: it appears to me that in Quartus, a Boolean true is returned as -1 rather than 1. Is this correct?

Yes. TRUE is a cell with all bits set on. This translates to -1.

> Last question: looking way down the road for me, when I get to the point of trying to build a program that uses the Palm graphical interface, is there any utility to assist building a form like there is on the PC when programming in C,

or do you have to figure out how to define all buttons, bitmaps, etc. from inside the program (I'm assuming this to be the case, but hoping there is a simpler approach).

There's an on-board resource editor called RsrcEdit, by Roger Lawrence; it's just the tool you need to create GUI resources on the Palm itself.

> Apologies in advance for what may seem very basic questions, but I will greatly appreciate any and all assistance.

Never a problem. Don't hesitate to ask questions.

Neal

Re: Beginner Questions

Posted by [paul gilliam](#) on February 01, 1999 at 15:51:09:

In Reply to: *Re: Beginner Questions* posted by Neal Bridges on January 30, 1999 at 15:45:43:

> There's an on-board resource editor called RsrcEdit, by Roger Lawrence; it's just the tool you need to create GUI resources on the Palm itself.

Any idea were I could get RsrcEdit? This sounds like a very usefull tool A URL would be helpfull.

Ad(thanks)vance,

--# Paul #--

Re: Beginner Questions - url for RsrcEdit

Posted by [Carl Jacobsen](#) on February 01, 1999 at 16:16:07:

In Reply to: *Re: Beginner Questions* posted by paul gilliam on February 01, 1999 at 15:51:09:

> Any idea were I could get RsrcEdit? This sounds like a very usefull tool
> A URL would be helpfull.

It lives at: <http://www.individeo.net/>

It's a bit of a ways down the page, don't get all worried when you end up on a page of games, just scroll down a bit :-)

I'm sure Neal probably has a link to it on his resources or links page, but I was passing by and thought I'd answer this.

-- Carl

- [Home page RsrcEdit and a few other things](#)

Re: Beginner Questions

Posted by [Barry Ekstrand](#) on January 31, 1999 at 15:38:00:

In Reply to: *Re: Beginner Questions* posted by Neal Bridges on January 30, 1999 at 15:45:43:

Neal, thanks for the reply and info. Is there any documentation on the standard Forth words Quartus has in it and correct syntax? I noticed I can use the WORDALL word to print it on my Palm, but my eyes don't move that fast and I cant write a program to save it as a memo file yet! I saw the manual lists words specific to Quartus but I don't find a list of common words / syntax, and my tutorial obviously isn't quite right for Quartus. Can you point me in the right direction?

Many thanks,

Barry Ekstrand

> > I downloaded a Forth tutorial, but it appears there are some differences in
> Quartus vs the tutorial I have. First, and most importantly, when I tried to
> use the @ word to read the value of a memory address, I get a fatal reset every
> time. Iam following what I think is ANSI Forth convention, as in:

> > 300 constant b
> > ' b
> > ' b @

> > When I use the above code from the command line, I get an OK after the first
> and second entries, but a crash on the third. If I use the .S word after the
> second entry I see the memory address of b. Can anyone tell me how to use the @
> and ! words to look at memory address values and input them?

> You don't need to use '. There may be some Forth somewhere in which you can
> create a constant, tick (') it, and get its value, but it's not something
> guaranteed to work cross-platform. Fortunately there's no need to do it.

>

> 300 constant b

> b @

>

> will return the contents of memory address 300.

>

> variable b

> 5 b !

> b @ .

>

> will create a variable named b, store 5 in it, and then retrieve that 5 and
> print it on the screen.

> > Second question: it appears to me that in Quartus, a Boolean true is
returned

> as -1 rather than 1. Is this correct?

> Yes. TRUE is a cell with all bits set on. This translates to -1.

> > Last question: looking way down the road for me, when I get to the point
of

> trying to build a program that uses the Palm graphical interface, is there
any

> utility to assist building a form like there is on the PC when programming
in C,

> or do you have to figure out how to define all buttons, bitmaps, etc. from
> inside the program (I'm assuming this to be the case, but hoping there is a
> simpler approach).

> There's an on-board resource editor called RsrcEdit, by Roger Lawrence;
it's

> just the tool you need to create GUI resources on the Palm itself.

> > Apologies in advance for what may seem very basic questions, but I will
> greatly appreciate any and all assistance.

> Never a problem. Don't hesitate to ask questions.

> Neal



Re: Beginner Questions

Posted by [Daryl Lee](#) on February 01, 1999 at 07:58:35:

In Reply to: *Re: Beginner Questions* posted by Barry Ekstrand on January 31, 1999 at 15:38:00:

> Neal, thanks for the reply and info. Is there any documentation on the standard Forth words Quartus has in it and correct syntax? I noticed I can use the WORDALL word to print it on my Palm, but my eyes don't move that fast and I cant write a program to save it as a memo file yet! I saw the manual lists words specific to Quartus but I don't find a list of common words / syntax, and my tutorial obviously isn't quite right for Quartus. Can you point me in the right direction?

Barry,

When you get the documentation from Neal, you'll need a document reader. I've been using TealDoc (about \$20) and am very satisfied with it. I use it to read the ANS documentation on standard words, Quartus-specific words, the 828 Palm system calls, and, currently, Paradise Lost. It's worth the money.

Daryl

Re: Beginner Questions

Posted by [Neal Bridges](#) on February 01, 1999 at 10:58:57:

In Reply to: *Re: Beginner Questions* posted by Daryl Lee on February 01, 1999 at 07:58:35:

> Barry,

> When you get the documentation from Neal, you'll need a document reader. I've
> been using TealDoc (about \$20) and am very satisfied with it. I use it to read
> the ANS documentation on standard words, Quartus-specific words, the 828 Palm
> system calls, and, currently, Paradise Lost. It's worth the money.

Daryl's right about needing a reader for the Palm DOC version of the ISO/ANSI Forth Standard, and some of the other material that's available in DOC format.

However, both the Standard and all Quartus Forth documentation are available

in
HTML format for viewing online with your favourite web browser.

Personally, I'm using one of the several freeware DOC readers for on-board reading; there are a number of these available.

Neal

Re: Beginner Questions

Posted by [Neal Bridges](#) on January 31, 1999 at 17:59:52:

In Reply to: *Re: Beginner Questions* posted by Barry Ekstrand on January 31, 1999 at 15:38:00:

> Neal, thanks for the reply and info. Is there any documentation on the standard Forth words Quartus has in it and correct syntax? I noticed I can use the WORDALL word to print it on my Palm, but my eyes don't move that fast and I cant write a program to save it as a memo file yet! I saw the manual lists words specific to Quartus but I don't find a list of common words / syntax, and my tutorial obviously isn't quite right for Quartus. Can you point me in the right direction?

The manual section on ISO/ANSI Documentation lists which Standard wordsets are supported, and what exclusions pertain. You'll want to also get an electronic (free) copy of the ISO/ANSI Forth Standard, from the Online Resources section of the manual.

Steven Donahue has sent me a draft of his tutorial documentation; it looks very promising indeed.

Neal

Bug: using RECURSE in compiled programs

Posted by [Neal Bridges](#) on January 29, 1999 at 22:10:21:

If you're a registered user, avoid using RECURSE in version 1.1.0 when creating stand-alone programs -- it doesn't compile correctly.

RECURSE does however work fine in programs run inside Quartus Forth; the bug only affects stand-alone programs.

The good news is that I've fixed it; the fix will appear in the next update.

Neal

makeprc problem

Posted by [Allen Chen](#) on January 29, 1999 at 16:00:20:

There must be something I've missed. I uploaded year and make-year into the memopad and yearRsrc.prc into my palm3, go into quartus and "include make-year".

It returns with "MakePRC? invalid registration code". I checked all the databases on my palm3 and none with a creator-ID of "Year". Have I missed something? Same thing happens to Duco.

Actually I just tested a simple hello world program:

```
: go page ." hello" cr begin key drop again ;  
' go 12345. makeprc hello
```

and same thing seems to happen.

I have the 1.1.0R version of quartus.

Allen

Re: makeprc problem

Posted by [Neal Bridges](#) on January 29, 1999 at 16:24:01:

In Reply to: *makeprc problem* posted by Allen Chen on January 29, 1999 at 16:00:20:

> There must be something I've missed. I uploaded year and make-year into the
> memopad and yearRsrc.prc into my palm3, go into quartus and "include

make-year".

> It returns with "MakePRC? invalid registration code". I checked all the
> databases on my palm3 and none with a creator-ID of "Year". Have I missed
> something? Same thing happens to Duco.

> Actually I just tested a simple hello world program:

```
> : go page ." hello" cr begin key drop again ;  
> ' go 12345. makeprc hello
```

> and same thing seems to happen.

> I have the 1.1.0R version of quartus.

Hi Allen. You'll get that message if your registration code is absent or incorrect.

Do you have a 'registered' line in your startup.quartus as per the instructions in the manual for setting up the registered version?

I'll be happy to confirm your registration code; drop me a note.

Neal

Re: makeprc problem

Posted by [Allen Chen](#) on January 29, 1999 at 16:32:09:

In Reply to: *Re: makeprc problem* posted by Neal Bridges on January 29, 1999 at 16:24:01:

> Hi Allen. You'll get that message if your registration code is absent or
> incorrect.

> Do you have a 'registered' line in your startup.quartus as per the
instructions
> in the manual for setting up the registered version?

> I'll be happy to confirm your registration code; drop me a note.

> Neal

Argghg I knew there was something I forgot! :)

I had the startup.quartus setup in the previous versions. When I updated to v1.1.0 I decided to update all my library text in the memo as well. In the process of doing that all the old library memos were erased, including startup.quartus. :)

Thanks for the ultra-fast response! :)

Allen

Re: makeprc problem

Posted by [Carl Jacobsen](#) on January 29, 1999 at 19:22:48:

In Reply to: *Re: makeprc problem* posted by Allen Chen on January 29, 1999 at 16:32:09:

> I had the startup.quartus setup in the previous versions. When I updated
> to v1.1.0 I decided to update all my library text in the memo as well. In
the
> process of doing that all the old library memos were erased, including
> startup.quartus. :)

Just in case I'm not the last one to figure this out: I keep all the library
memos (basically the contents of libtxt.zip) in a memopad category called
"Quartus", and all my programs, tests, copies of samples, etc., -- and my
startup.quartus, in a category called "Forth". Makes it a lot easier to see
what's mine and what's Neal's :-)

-- Carl

Field to float?

Posted by [Steven Donahue](#) on January 29, 1999 at 10:10:12:

What is the best way to convert the text values in a Field resource
to a float, perform some calculations, and place the new float value
back into another Field?

I have seen the examples for Field>string and string>Field in the "fields"
library file. If I use these, are there any words to go from string>float
and back?

Thanks for the help.

Steve

Re: Field to float?

Posted by [Neal Bridges](#) on January 29, 1999 at 10:14:10:

In Reply to: *Field to float?* posted by Steven Donahue on January 29, 1999 at 10:10:12:

> What is the best way to convert the text values in a Field resource
> to a float, perform some calculations, and place the new float value
> back into another Field?

> I have seen the examples for Field>string and string>Field in the "fields"
> library file. If I use these, are there any words to go from string>float
> and back?

> Thanks for the help.

The Standard word >FLOAT converts a string to a float. To reverse the process (float to string) requires REPRESENT, which is coming in the next update. REPRESENT is also required for F. (displaying floats without the use of 'e' notation).

Neal

Beginner Help

Posted by [Gary Learned](#) on January 28, 1999 at 16:12:23:

I used to do some things in Forth eons ago, but it's been a long time. Is there any document that has a discussion on how Quartus handles floating point numbers? Is it using a seperate floating point stack? If so, where are the word definitions for accessing that stack? It's been a long time .

I'm also interested in a simple one field and/or one button GUI example to help me work my way back into this wonderful environment.
Thanks

Re: Beginner Help

Posted by [Gary Learned](#) on January 28, 1999 at 18:04:25:

In Reply to: *Beginner Help* posted by Gary Learned on January 28, 1999 at 16:12:23:

I can see I'm going to need to go dig up all my old forth books, and start over.

Remembering double words, I've now realized I can avoid floating for a good bit of my development. I just have to remember how to format the output...when

I was doing a bit more, I had a routine that would use something similar to cobol picture strings to format decimal places. Anyone have something similar to that written?

Re: Beginner Help

Posted by [Neal Bridges](#) on January 28, 1999 at 20:31:24:

In Reply to: *Re: Beginner Help* posted by Gary Learned on January 28, 1999 at 18:04:25:

> I can see I'm going to need to go dig up all my old forth books, and start over.

> Remembering double words, I've now realized I can avoid floating for a good bit of my development. I just have to remember how to format the output...when

> I was doing a bit more, I had a routine that would use something similar to cobol picture strings to format decimal places. Anyone have something similar

to

> that written?

You'll want to use the pictured numeric output words, <# #S #> along with HOLD. It's not hard at all to format integers with Forth.

Neal

Re: Beginner Help

Posted by [Gary Learned](#) on January 28, 1999 at 23:42:01:

In Reply to: *Re: Beginner Help* posted by Neal Bridges on January 28, 1999 at 20:31:24:

Ok, but the <# # #S #> words work great if you know how many positions the number is...for example: <# # # 46 HOLD #S #> works great if you know it's 4 digits. How about if you aren't sure how many significant digits the number is?

I dug out my old manuals and had remembered that much so far.

It will come back, It will come back!

Re: Beginner Help

Posted by [Neal Bridges](#) on January 28, 1999 at 23:44:01:

In Reply to: *Re: Beginner Help* posted by Gary Learned on January 28, 1999 at 23:42:01:

> Ok, but the <# # #S #> words work great if you know how many positions the
> number is...for example: <# # # 46 HOLD #S #> works great if you know it's
> 4
> digits. How about if you aren't sure how many significant digits the number
> is?
> I dug out my old manuals and had remembered that much so far.
> It will come back, It will come back!

If you're working with fixed-point integers, you have to know how many places you've got after the decimal point, or it's not fixed-point.

Neal

Re: Beginner Help

Posted by [Neal Bridges](#) on January 29, 1999 at 01:02:11:

In Reply to: *Re: Beginner Help* posted by Neal Bridges on January 28, 1999 at 23:44:01:

> > Ok, but the <# # #S #> words work great if you know how many positions the
> > number is...for example: <# # # 46 HOLD #S #> works great if you know it's 4
> > digits. How about if you aren't sure how many significant digits the number
> is?
> > I dug out my old manuals and had remembered that much so far.
> > It will come back, It will come back!
> If you're working with fixed-point integers, you have to know how many places
> you've got after the decimal point, or it's not fixed-point.

Further to my previous hasty response, I realize you're talking about the entire length of the number in question.

For a double number, the maximum length is 10 digits (4294967295) -- knowing that, in conjunction with the words in *numberalign.txt*, and you should be able to format and display integers to your heart's content.

Neal

Fixed Point Help

Posted by [Gary Learned](#) on January 29, 1999 at 11:09:38:

In Reply to: *Re: Beginner Help* posted by Neal Bridges on January 29, 1999 at 01:02:11:

Thanks Neal. I'll take a look at *numberalign.txt* and play with it awhile. Anythoughts on Doublewides and floating?

Re: Fixed Point Help

Posted by [Neal Bridges](#) on January 29, 1999 at 11:31:15:

In Reply to: *Fixed Point Help* posted by Gary Learned on January 29, 1999 at 11:09:38:

> Thanks Neal. I'll take a look at numberalign.txt and play with it awhile.
> Anythoughts on Doublewides and floating?

Ask away; I'm happy to address anything you come up with.

Neal

Re: Beginner Help

Posted by [Steve Gibson](#) on January 28, 1999 at 17:05:07:

In Reply to: *Beginner Help* posted by Gary Learned on January 28, 1999 at 16:12:23:

> I used to do some things in Forth eons ago, but it's been a long time. Is there
> any document that has a discussion on how Quartus handles floating point
> numbers? Is it using a seperate floating point stack? If so, where are the
> word
> definitions for accessing that stack? It's been a long time .
> I'm also interested in a simple one field and/or one button GUI example to
> help
> me work my way back into this wonderful environment.
> Thanks

I'm in a similar situation. I'm completely new to Forth, but not new to programming (C, perl, etc..). I'm intrigued by Forth but at the same time I'm frustrated. If you ask me, anything that can compile source into a PRC on the Palm is worth going all out for (can't beat coding while sitting in the john!).

However, I'm having a hard time figuring out how everything falls into place (I'm talking about the coding here...). The stack concept is not hard to understand, but there are other concepts that I am not picking up.

Namely, how does one store a string in a variable and then recall it and print it? I can store integers in variables, but I've not seen any examples of the former. Also, floating point numbers -- how? where? Just about everything I am interested in writing is going to involve extensive use of floats. Yet, all I've seen in any tutorial is integer calculations.

I guess if there were a better tutorial it would be listed in the "Links to Online Resources", but I haven't found anything that covers all the words or concepts that need to be covered. There are so many words that are used in the library files and I haven't a clue as to what most of them do, even after reading the qdocs.zip.

Like Gary, I'd also like to see a small application with a field and a button or some such...

I hate to keep blabbering, but I wanted to ask Neal if he could make it so that we could select and copy text from the console screen? That would be quite handy.

-Steve

Re: Beginner Help

Posted by [Neal Bridges](#) on January 28, 1999 at 20:41:51:

In Reply to: *Re: Beginner Help* posted by Steve Gibson on January 28, 1999 at 17:05:07:

> I'm in a similar situation. I'm completely new to Forth, but not new to
> programming (C, perl, etc..). I'm intrigued by Forth but at the same time
> I'm
> frustrated. If you ask me, anything that can compile source into a PRC on
> the
> Palm is worth going all out for (can't beat coding while sitting in the
> john!).
> However, I'm having a hard time figuring out how everything falls into
> place
> (I'm talking about the coding here...). The stack concept is not hard to
> understand, but there are other concepts that I am not picking up.
> Namely, how does one store a string in a variable and then recall it and
> print
> it? I can store integers in variables, but I've not seen any examples of
> the
> former. Also, floating point numbers -- how? where? Just about everything I
> am interested in writing is going to involve extensive use of floats. Yet,
> all
> I've seen in any tutorial is integer calculations.

A constant string:

```
: mystring S" This is my string" ;
```

A buffer in which to hold a string:

```
CREATE mybuffer 80 chars allot
```

Putting mystring in mybuffer:

```
mystring mybuffer SWAP MOVE
```

Putting mystring in mybuffer as a 'counted' string (length in the first character:)

needs toolkit

```
mystring mybuffer place
```

-- Floating point --

A floating point constant:

```
3.14159265e0 FCONSTANT pi
```

A floating point variable:

```
FVARIABLE myfloat
```

Storing a floating point value in a floating point variable:

```
1.234e1 myfloat F!
```

Displaying the contents of a floating point variable:

```
myfloat F@ FS.
```

A calculation:

```
pi 2e F* myfloat F@ F+ FS.
```

> I guess if there were a better tutorial it would be listed in the "Links to
> Online Resources", but I haven't found anything that covers all the words
or
> concepts that need to be covered. There are so many words that are used in
the
> library files and I haven't a clue as to what most of them do, even after
> reading the qdocs.zip.

Please do ask questions here as they occur to you; it's very quick and easy
for
me to answer questions, much harder to anticipate them.

> Like Gary, I'd also like to see a small application with a field and a
button
or
> some such...

In the works.

> I hate to keep blabbering, but I wanted to ask Neal if he could make it so that
> we could select and copy text from the console screen? That would be quite
> handy.

Sounds handy but would be impractical for a number of reasons. In order to make the entire display support text selection, I'd have to make the entire screen a GUI field object. This would prevent the intermixing of graphics and text, prevent positioning text at any pixel location on the screen, and would force the use of only one font for all displayed text. Also, it'd be considerably slower for both text output, and for scrolling. And I'd have to restrict text input to a specific place on the screen, say the bottom line or some such; all in all the tradeoffs would be appreciable.

Neal

Re: Beginner Help

Posted by [Branko Znuderl](#) on January 29, 1999 at 06:53:07:

In Reply to: *Re: Beginner Help* posted by Neal Bridges on January 28, 1999 at 20:41:51:

Neal,

> > Like Gary, I'd also like to see a small application with a field and a button
> or
> > some such...
> In the works.

I strongly agree that 'small simple app' example is needed. But I would add that I think little bit more that field and button should be demonstrated.

What I need is demonstation of example which have

- one or two forms
- this forms have titles
- this forms have menus and how this menus comunicate with code
- implementation of typical GUI elements on mentioned form, like:
 - bottum
 - check box or field of check box
 - up/down left/right arrows for listing
 - list box (predefined or expandeble)
 - tekst field of diferent sizes

- clear standard way how to implement cut/paste/select all/
keybort/grafiti or help/about menus (standard looking and
behaviour /so that menu hack fould work properly)

This simple app example should be well documented and
in the form that it could be easly re-used (you remember
snipets idea).

I can imagine that it is not easy to prepare such example...
and that there would be still something not covered. But....

I have seen (and maybe you can also look at) palm factory
peace of softaware for RAD of simple apps.
Quartus defenitely need some simple way how to
construct and use standard GUI elements of Pilot.

Branko

P.S. Other way is much hurder but maybe somehow better...
to learn from scrach (and from help from you) ...
just to remember myself how haw re-discovered
database usage, preference usage etc.

Re: Beginner Help

Posted by [Neal Bridges](#) on January 29, 1999 at 10:09:13:

In Reply to: *Re: Beginner Help* posted by Branko Znuderl on January 29, 1999
at 06:53:07:

> I strongly agree that 'small simple app' example is needed.
> But I would add that I think little bit more that field and button
> should be demonstrated.

[suggestions for sample app behaviour]

Good suggestions. I'm preparing a simple GUI app that has the same elements
already present in the sample sources, but in a shorter form; it can be added
to
over time. Most of the elements you name (checkboxes, lists, etc.) are in
fact
handled in the same way buttons are, so the techniques in a simple GUI app
will
be immediately applicable. Application examples showing this functionality
are
already present -- for example, Swatch is a Quartus Forth application that
has
two forms, checkboxes, lists, and scrolling arrows.

> I have seen (and maybe you can also look at) palm factory

> peace of software for RAD of simple apps.
> Quartus definitely need some simple way how to
> construct and use standard GUI elements of Pilot.

I've looked at Palm Factory. In terms of desktop-based rapid GUI interface design, the PilotMag tool is more applicable to Quartus Forth; PilotMag generates a PilRC-compatible resource file.

Having said that, if designing the user interface for an application is in fact the part of the job that needs to be speeded up, you're writing a very simple application indeed.

It's already quite straightforward to use standard GUI elements from Quartus Forth. After creating the resource (via RsrcEdit, PilRC, or a graphical tool like PilotMag), the code to handle events coming from any given control/button/field takes the form of a CASE..ENDCASE or similar conditional structure. You only need to handle the events coming from the controls on your form, as all system events, form opening/closing, etc. are handled transparently by Quartus Forth.

GUI elements look and behave exactly as they would in any built-in app -- because they're exactly the same elements; Quartus Forth works directly with standard Palm OS GUI resources.

The simple GUI app I'm preparing will help illustrate this and provide a base for further documentation.

Neal

Re: Beginner Help

Posted by [Carl Jacobsen](#) on January 29, 1999 at 19:16:31:

In Reply to: *Re: Beginner Help* posted by Neal Bridges on January 29, 1999 at 10:09:13:

> ... Application examples showing this functionality are
> already present -- for example, Swatch is a Quartus Forth application
> that has two forms, checkboxes, lists, and scrolling arrows.

As an aside, Neal, I'd love to see the source for Swatch, but last I looked, the source hadn't been released. Am I mistaken? I've learned much by reading through Duco and Year, but Swatch brings a lot more elements together (the multiple forms, etc).

> > Quartus definitely need some simple way how to

> > construct and use standard GUI elements of Pilot.
>
> It's already quite straightforward to use standard GUI elements from
Quartus
> Forth. ... You only need to handle the events coming from the controls on
> your form, as all system events, form opening/closing, etc. are handled
> transparently by Quartus Forth.
>
> GUI elements look and behave exactly as they would in any built-in app --
> because they're exactly the same elements; Quartus Forth works directly
with
> standard Palm OS GUI resources.

Sorry, reading over my response, I've rambled a bit, but bear with me...

It has been my experience that it can be very disorienting to try to learn
too
many different things at once. It can be difficult to keep straight which new
item or idea fits into which puzzle...

Successful PalmPilot programming using Quartus would appear to require a
variety
of programming skills (here progressing from most general to most specific):

1. Fundamental programming concepts
- 2a. Forth programming (general ANS Forth, stack concepts, etc.)
- 2b. PalmPilot programming (event driven, gui oriented, Pilot API)
3. Quartus programming (combining PalmPilot and Forth, Quartus's automatic handling of events, etc.)

Presumably most everyone here has point 1 pretty well covered (myself, I've
been
programming in one language or another for the past two decades, mostly on
Unix,
mostly in C and, lately, Perl -- never before in Forth).

To satisfy point 2a, I've been reading the ANS Forth 94 standard, and to a
lesser extent, Conklin & Rather's "Forth Programming Handbook".

To satisfy point 2b, I've been reading O'Reilly's wonderful "Palm
Programming"
book.

Point 3 thus far has been for me mostly a matter of reading through Neal's
example source code for Duco and Year (and I'd love to see the Swatch
source).

I agree that extensive tutorial documentation would be really nice for
Quartus
(heck, I'd love to see an O'Reilly "Learning Quartus" book :-), but there's
lots
of Forth documentation and PalmPilot documentation out there; the glue for
knitting the two together is really just the last 5% or 10% of the equation.

Er, my point being, I suppose, that if you've never done either Forth or PalmPilot programming, trying to find examples that will teach you both at the same time may make things more confusing than necessary.

Quartus's console works decently well for writing and running "plain" Forth programs that send their output to the console. And there are sources for learning PalmPilot program structure and APIs (the above mentioned book, and the developer documentation) if you have the requisite background in C. There's no need to try to do it all at once, and your first few Quartus programs really don't need to be Netscape and Quake for the PalmPilot...

Hope this makes some sense...

-- Carl

Re: Beginner Help

Posted by [Steven Donahue](#) on January 29, 1999 at 09:54:42:

In Reply to: *Re: Beginner Help* posted by Branko Znuderl on January 29, 1999 at 06:53:07:

> I strongly agree that 'small simple app' example is needed.
> But I would add that I think little bit more that field and button
> should be demonstrated.

I am currently working on just such a tutorial. I am developing this tutorial as a learning process for myself, but I hope that it will be useful to others like me who are just starting out.

Through the course of this tutorial, I will implement some basic applications to illustrate how to use the Quartus Forth development environment in conjunction with the OnBoard RsrcEdit resource editor to do on-board application development. In an effort to cover the use of several different types of resources, I will use subsequent examples to extend the functionality of these applications.

I have a version with the first two exercises almost complete. I will send a copy to Neal for his review and inclusion in his files area if appropriate. I hope to wrap the first pass up sometime this weekend.

> What I need is demonstration of example which have
> - one or two forms
> - these forms have titles
> - these forms have menus and how these menus communicate with code
> - implementation of typical GUI elements on mentioned form, like:

> - bottum
> - check box or field of check box
> - up/down left/right arrows for listing
> - list box (predefined or expandable)
> - tekst field of diferent sizes
> - clear standard way how to implement cut/paste/select all/
> keybort/grafiti or help/about menus (standard looking and
> behaveour /so that menu hack fould work properly)
>
> This simple app example should be well documented and
> in the form that it could be easly re-used (you remember
> snippets idea).

All of these concepts will be covered in this tutorial. Most of these will be covered in my next couple of exercises. Also covered will be the use of strings and floating points, another common call for help on this message board.

> I can imagine that it is not easy to prepare such example...
> and that there would be still something not covered. But....

You are correct. My first exercise simply covers a basic "Hello, World" application wiht an about menu and description alert box. Granted, I use bitmap illustrations liberally, but this single example is currently at 15 pages.

Re: Beginner Help

Posted by [Branko Znuderl](#) on January 30, 1999 at 16:09:22:

In Reply to: *Re: Beginner Help* posted by Steven Donahue on January 29, 1999 at 09:54:42:

I hardly wait to see some results of this efford.
It greate to see community to work together...

Thanks for understanding Neal and Steven

Branko

> I my currently working on just such a tutorial. I am developing this
> tutorial as a learning process for myself, but I hope that it will be
> useful to others like me who are just starting out.
> Through the course of this tutorial, I will implement some basic
> applications to illustrate how to use the Quartus Forth development

> environment in conjunction with the OnBoard RsrcEdit resource editor
> to do on-board application development. In an effort to cover the
> use of several different types of resources, I will use subsequent
> examples to extend the functionality of these applications.

> I have a version with the first two exercises almost complete. I will
> send a copy to Neal for his review and inclusion in his files area if
> appropriate. I hope to wrap the first pass up sometime this weekend.

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> > What I need is demonstration of example which have

- > > - one or two forms
- > > - these forms have titles
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- > > - implementation of typical GUI elements on mentioned form, like:
- > > - button
- > > - check box or field of check box
- > > - up/down left/right arrows for listing
- > > - list box (predefined or expandable)
- > > - text field of different sizes
- > > - clear standard way how to implement cut/paste/select all/
> > keyboard/graffiti or help/about menus (standard looking and
> > behaviour /so that menu hack would work properly)

> >

> > This simple app example should be well documented and
> > in the form that it could be easily re-used (you remember
> > snippets idea).

> All of these concepts will be covered in this tutorial. Most of these
> will be covered in my next couple of exercises. Also covered will be
> the use of strings and floating points, another common call for help
> on this message board.

>

> > I can imagine that it is not easy to prepare such example...
> > and that there would be still something not covered. But....

> You are correct. My first exercise simply covers a basic "Hello,
> World" application with an about menu and description alert box.
> Granted, I use bitmap illustrations liberally, but this single example
> is currently at 15 pages.

Re: Beginner Help

Posted by [Neal Bridges](#) on January 29, 1999 at 10:10:45:

In Reply to: *Re: Beginner Help* posted by Steven Donahue on January 29, 1999 at 09:54:42:

> > I strongly agree that 'small simple app' example is needed.
> > But I would add that I think little bit more that field and button
> > should be demonstrated.

> I my currently working on just such a tutorial. I am developing this
> tutorial as a learning process for myself, but I hope that it will be
> useful to others like me who are just starting out.

> Through the course of this tutorial, I will implement some basic
> applications to illustrate how to use the Quartus Forth development
> environment in conjunction with the OnBoard RsrcEdit resource editor
> to do on-board application development. In an effort to cover the
> use of several different types of resources, I will use subsequent
> examples to extend the functionality of these applications.

That's great, Steven. I'm looking forward to seeing that!

Neal

Re: Beginner Help

Posted by [Neal Bridges](#) on January 28, 1999 at 16:54:31:

In Reply to: *Beginner Help* posted by Gary Learned on January 28, 1999 at 16:12:23:

> I used to do some things in Forth eons ago, but it's been a long time. Is
> there
> any document that has a discussion on how Quartus handles floating point
> numbers? Is it using a seperate floating point stack? If so, where are the
> word
> definitions for accessing that stack? It's been a long time .

Quartus Forth has a separate floating point stack. The floating-point words
are
as defined in the FLOAT section of the ISO/ANSI Forth Standard, available via
the "Online Resources" page of the manual.

Also I posted a 'light year' floating-point calculation example a while
back...

the search engine should turn it up.

> I'm also interested in a simple one field and/or one button GUI example to help
> me work my way back into this wonderful environment.

Duco is a multi-button GUI example; the *input.txt* module that uses *grsrc.zip* is a simple one-field example. I'm putting together a simple 'Hello World' example that has one button -- it'll be released soon.

Neal

MakePRC crash

Posted by [Jeremy Ridgway](#) on January 27, 1999 at 20:18:48:

I seem to have a problem on a program I just "finished." If I start Quartus and include all of my files for my program and run it, the program runs fine (or it seems to run fine to me). However, when I try to create a prc, Quartus crashes. My make file is basically a copy of the example makefiles for duco or year, modified to suit my program. I include the make file when Quartus starts, the dots run across the screen (actually filling the screen and then some), then the screen goes 'wacky' (technical term) and the pilot freezes. I must reset manually to restore my pilot.

When I reset, I find that a new icon for my program is created, but when I try to run it it simply returns to the app launcher. The prc created is about 30k.

Is there some sort of maximum on program size? Or any other secrets I might be forgetting?

Thanks,
Jeremy

Re: MakePRC crash

Posted by [Neal Bridges](#) on January 27, 1999 at 21:42:08:

In Reply to: *MakePRC crash* posted by Jeremy Ridgway on January 27, 1999 at 20:18:48:

> I seem to have a problem on a program I just "finished." If I start Quartus
> and include all of my files for my program and run it, the program runs fine
> (or it seems to run fine to me). However, when I try to create a prc,

Quartus

> crashes. My make file is basically a copy of the example makefiles for duco
> or year, modified to suit my program. I include the make file when Quartus
> starts, the dots run across the screen (actually filling the screen and
then
> some), then the screen goes 'wacky' (technical term) and the pilot freezes.
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> must reset manually to restore my pilot.

> When I reset, I find that a new icon for my program is created, but when I
try
> to run it it simply returns to the app launcher. The prc created is about
30k.
> Is there some sort of maximum on program size? Or any other secrets I might
> be forgetting?

Jeremy, there is a limit on the number of words that can be exported (it's
currently set at 250). This is an arbitrary limit I can easily increase; I'll
send you an interim update that will let you test if this is the problem.

Neal

Re-directing output

Posted by [Mike Will](#) on January 27, 1999 at 09:50:31:

Is it possible to re-direct standard output to memory? That is, could TYPE,
EMIT and .S send their output to a string or other construct instead of the
screen? If not, would it be possible to send their output to an invisible
field
on a form to allow access without printing it?

Thanks.

Re: Re-directing output

Posted by [Neal Bridges](#) on January 27, 1999 at 10:37:44:

In Reply to: *Re-directing output* posted by Mike Will on January 27, 1999 at
09:50:31:

> Is it possible to re-direct standard output to memory? That is, could TYPE,
> EMIT and .S send their output to a string or other construct instead of the
> screen? If not, would it be possible to send their output to an invisible
field

> on a form to allow access without printing it?

There are two ways to go. The first is to write your own EMIT, TYPE, and .S; the second is to wait for me to implement vectors for those words. It's on the list of future enhancements.

Neal

Re: Re-directing output

Posted by [Mike Will](#) on January 27, 1999 at 10:58:31:

In Reply to: *Re: Re-directing output* posted by Neal Bridges on January 27, 1999 at 10:37:44:

> There are two ways to go. The first is to write your own EMIT, TYPE, and .S;
> the second is to wait for me to implement vectors for those words. It's on the list of future enhancements.

> Neal

Thanks, Neal. Those three are doable. Unfortunately, the word I really need to re-direct most is FS. (so that I can massage it into an F.) I'm about to start writing F. from scratch. Any tips?

Mike

Re: Re-directing output

Posted by [Neal Bridges](#) on January 27, 1999 at 11:01:11:

In Reply to: *Re: Re-directing output* posted by Mike Will on January 27, 1999 at 10:58:31:

> > There are two ways to go. The first is to write your own EMIT, TYPE, and .S;
> > the second is to wait for me to implement vectors for those words. It's on the

> > list of future enhancements.

> > Neal

> Thanks, Neal. Those three are doable. Unfortunately, the word I really need to

> re-direct most is FS. (so that I can massage it into an F.) I'm about to start

> writing F. from scratch. Any tips?

The best place to start with F. (also on my list) is by writing REPRESENT, rather than by deconstructing the output of FS.

Neal

DPL ?

Posted by [Mike Will](#) on January 28, 1999 at 16:56:19:

In Reply to: *Re: Re-directing output* posted by Neal Bridges on January 27, 1999 at 11:01:11:

> The best place to start with F. (also on my list) is by writing REPRESENT, > rather than by deconstructing the output of FS.

> Neal

Ok, thanks. One more float question: DPL. Older Forths used this system-maintained variable to track the decimal point in double numbers. I notice that

Quartus allows decimals in doubles. Is there some form of DPL anywhere? It looks to me like Quartus just accepts the decimal then throws it away.

I'm really enjoying Quartus and have one app in use already. Many thanks.

Mike

Re: DPL ?

Posted by [Neal Bridges](#) on January 28, 1999 at 17:03:23:

In Reply to: *DPL ?* posted by Mike Will on January 28, 1999 at 16:56:19:

> > The best place to start with F. (also on my list) is by writing REPRESENT,

> > rather than by deconstructing the output of FS.

> > Neal

> Ok, thanks. One more float question: DPL. Older Forths used this system-
> maintained variable to track the decimal point in double numbers. I notice
that
> Quartus allows decimals in doubles. Is there some form of DPL anywhere? It
> looks to me like Quartus just accepts the decimal then throws it away.
> I'm really enjoying Quartus and have one app in use already. Many thanks.

It's less a matter of Quartus Forth allowing decimals in double numbers than
it
is that the entry of double numbers *requires* a decimal point, as per
the DOUBLE wordset in the ISO/ANSI Forth Standard.

DPL is a non-standard word; having said that, it may be relatively easy to
add.
I've put it on the enhancement list.

Neal

Onboard Bitmap Editor?

Posted by [Daryl Lee](#) on January 27, 1999 at 07:25:37:

I do all my Quartus development onboard, because I do it everywhere. I have a
nice little app ready for beta testing (see "Golfers?" below), but it needs a
little flair in the form of a bitmap. I'm about to get a sheet of paper with
grid lines, draw on it, and manually translate the drawing to a series of hex
values for loading up with Neal's "bitmap" word. Can someone stop me from
this
madness by pointing me to an onboard bitmap editor that will produce data in
some usable form? Any other suggestions for how to go about this?

Daryl

Re: Onboard Bitmap Editor?

Posted by [Steve Gibson](#) on January 28, 1999 at 17:57:06:

In Reply to: *Onboard Bitmap Editor?* posted by Daryl Lee on January 27, 1999
at 07:25:37:

> I do all my Quartus development onboard, because I do it everywhere. I have
a
> nice little app ready for beta testing (see "Golfers?" below), but it needs
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> little flair in the form of a bitmap. I'm about to get a sheet of paper with
> grid lines, draw on it, and manually translate the drawing to a series of hex
> values for loading up with Neal's "bitmap" word. Can someone stop me from this
> madness by pointing me to an onboard bitmap editor that will produce data in
> some usable form? Any other suggestions for how to go about this?

> Daryl

I don't know if it generates the proper text bits Quartus, but there is a bitmap editor converter written for PocketC (I know, I know...don't throw things at me!) called BitmapBuddy. From what I recall it allows you to edit your bitmap graphic and when done it converts it to a bitmap string and dumps to the screen so that you can copy and paste into a memo or whatever. It requires to PocketC runtime module (blech!). But hey, maybe it would work and save someone some hassle. It can be found on pilotgear.com -- search for BitmapBuddy under PocketC Applets...

-Steve

Re: Onboard Bitmap Editor?

Posted by [Daryl Lee](#) on January 29, 1999 at 08:01:05:

In Reply to: *Re: Onboard Bitmap Editor?* posted by Steve Gibson on January 28, 1999 at 17:57:06:

> I don't know if it generates the proper text bits Quartus, but there is a bitmap
> editor converter written for PocketC (I know, I know...don't throw things at
> me!) called BitmapBuddy

I'll go take a peek.

Having made a tidy little living on C for a few years, I don't have the biases a lot of people do. I like to use the best tool for the job at hand, and if a tool exists and does what I want, I usually don't care what language it was written in.

Thanks for the pointer.

Daryl

Re: Onboard Bitmap Editor?

Posted by [Steve Gibson](#) on January 29, 1999 at 16:24:39:

In Reply to: *Re: Onboard Bitmap Editor?* posted by Daryl Lee on January 29, 1999 at 08:01:05:

>
> > I don't know if it generates the proper text bits Quartus, but there is a
> bitmap
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> Having made a tidy little living on C for a few years, I don't have the
biases
> a lot of people do.

My comments weren't meant as a slam against C. I love C. I just don't like
the
fact that the PocketC implementation requires a runtime module to execute any
code you write. Plus I didn't know how it would be taken, my mentioning such
an
application, given that this is a Forth discussion forum.

> I like to use the best tool for the job at hand, and if a
> tool exists and does what I want, I usually don't care what language it was
> written in.

Same here. That's why I'm learning Quartus Forth. Seems to be the most
complete (maybe the ONLY) development platform for generating PRC's solely on
the Palm.

- Steve

Re: Onboard Bitmap Editor?

Posted by [Neal Bridges](#) on January 29, 1999 at 16:56:12:

In Reply to: *Re: Onboard Bitmap Editor?* posted by Steve Gibson on January 29, 1999 at 16:24:39:

> >
> > > I don't know if it generates the proper text bits Quartus, but there is
a
> > bitmap
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> > I like to use the best tool for the job at hand, and if a
> > tool exists and does what I want, I usually don't care what language it
was
> > written in.
> Same here. That's why I'm learning Quartus Forth. Seems to be the most
> complete (maybe the ONLY) development platform for generating PRC's solely
on
> the Palm.

Never worry; I'm all for using (and creating) tools that work myself.

However, even if BitmapBuddy met your needs re bitmap size, the string it
generates is not useful.

Christopher Althausen's Bitmap program isn't bad actually; has anyone dropped
him a note? If not, I will.

Neal

Re: Onboard Bitmap Editor?

Posted by [Carl Jacobsen](#) on January 27, 1999 at 17:49:23:

In Reply to: *Onboard Bitmap Editor?* posted by Daryl Lee on January 27, 1999 at 07:25:37:

> ... Can someone stop me from this
> madness by pointing me to an onboard bitmap editor that will produce data
in
> some usable form? Any other suggestions for how to go about this?

It occurs to me that what we lack here is not a good program for drawing graphics on the PalmPilot (there are plenty of such available; including my favorite, TealPaint), but rather something to convert their output to a form useful to us...

So, if there's much programming involved in the task of getting a bitmap editor available, perhaps a better approach would be to write a program that can read the graphics storage format of one of the existing graphics editors, and output an image in whatever form we need. That way, you gain access to all the nifty drawing tools available in the drawing program.

Perhaps one of the graphics program authors would even be willing to detail their storage format, if asked...

Then again, maybe that's more work than just writing a little bitmap editor...

Just ignore me if it's a dumb idea... :-)
-- Carl

Re: Onboard Bitmap Editor?

Posted by [Daryl Lee](#) on January 28, 1999 at 16:07:59:

In Reply to: *Re: Onboard Bitmap Editor?* posted by Carl Jacobsen on January 27, 1999 at 17:49:23:

> > ... Can someone stop me from this
> > madness by pointing me to an onboard bitmap editor that will produce data
in
> > some usable form? Any other suggestions for how to go about this?

> It occurs to me that what we lack here is not a good program for drawing
> graphics on the PalmPilot (there are plenty of such available; including my
> favorite, TealPaint), but rather something to convert their output to a
form

> useful to us...

Thoughts along that line had occurred to me, and this is what I decided while in the sunshine at lunchtime today. (Funny thing how light usually helps...)

The Icon (tAIB) resource can be graphically edited from within RscEdit, and its data structure is just a bitmap with some flags set. If necessary, the flags can be cleared in Hex Edit mode. As it turns out, two icons displayed side-by-side will work nicely for my immediate need, so I'm headed that direction.

My next step will be to re-install TealPaint (lost when RscEdit gave me that hard reset a while back) and explore the data format. If I learn anything interesting, I'll report back.

Daryl

Re: Oh, I get it...

Posted by [Daryl Lee](#) on January 29, 1999 at 08:18:53:

In Reply to: *Re: Onboard Bitmap Editor?* posted by Daryl Lee on January 28, 1999 at 16:07:59:

I think I just discovered that PocketC code is not standalone. The BitmapBuddy code is a .PDB database entry, not a .PRC executable. Oh, well. But it turns out "Buddy" has a 40x40 limitation, anyhoo.

Back to the drawing boards.

Daryl

Re: Onboard Bitmap Editor?

Posted by [Neal Bridges](#) on January 27, 1999 at 10:42:51:

In Reply to: *Onboard Bitmap Editor?* posted by Daryl Lee on January 27, 1999 at 07:25:37:

> I do all my Quartus development onboard, because I do it everywhere. I have a
> nice little app ready for beta testing (see "Golfers?" below), but it needs a
> little flair in the form of a bitmap. I'm about to get a sheet of paper

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> grid lines, draw on it, and manually translate the drawing to a series of
hex
> values for loading up with Neal's "bitmap" word. Can someone stop me from
this
> madness by pointing me to an onboard bitmap editor that will produce data
in
> some usable form? Any other suggestions for how to go about this?

Christian Althausen (cwa@uol.com.br) wrote such a program in Quartus Forth a
few
months back. I haven't heard from him in awhile; perhaps if you drop him a
note
he'd be willing to part with his latest version.

Neal

Re: Onboard Bitmap Editor?

Posted by [Jim Hendricks](#) on January 27, 1999 at 10:26:22:

In Reply to: *Onboard Bitmap Editor?* posted by Daryl Lee on January 27, 1999
at 07:25:37:

Try Roger Lawrence's RsrcEdit tool at www.indiovideo.net

This doesn't allow creation of a dynamic bitmap the way Neal's "bitmap" word
does but it does allow creating a bitmap resource (thus a static bitmap)
using
a small bitmap editor. Hope this helps!

> I do all my Quartus development onboard, because I do it everywhere. I have
a
> nice little app ready for beta testing (see "Golfers?" below), but it needs
a
> little flair in the form of a bitmap. I'm about to get a sheet of paper
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> values for loading up with Neal's "bitmap" word. Can someone stop me from
this
> madness by pointing me to an onboard bitmap editor that will produce data
in
> some usable form? Any other suggestions for how to go about this?

> Daryl

Re: Onboard Bitmap Editor?

Posted by [Jim Hendricks](#) on January 27, 1999 at 10:28:53:

In Reply to: *Re: Onboard Bitmap Editor?* posted by Jim Hendricks on January 27, 1999 at 10:26:22:

Just another thought, RsrcEdit also allows hex editing of resources, therefore I beleive you could create the bitmap in a resource database using the supplied painter, then do a hex edit of the bitmap resource to get the hex values. This would save the time of graphing and calculating if you truely need a dynamic vs a static bitmap.

> Try Roger Lawrence's RsrcEdit tool at www.indiovideo.net

> This doesn't allow creation of a dynamic bitmap the way Neal's "bitmap" word

> does but it does allow creating a bitmap resource (thus a static bitmap) using

> a small bitmap editor. Hope this helps!

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> > madness by pointing me to an onboard bitmap editor that will produce data in

> > some usable form? Any other suggestions for how to go about this?

> > Daryl

Re: Onboard Bitmap Editor?

Posted by [Daryl Lee](#) on January 27, 1999 at 17:13:06:

In Reply to: *Re: Onboard Bitmap Editor?* posted by Jim Hendricks on January 27, 1999 at 10:28:53:

> Just another thought, RsrcEdit also allows hex editing of resources

It's the hex editing that I'm trying to avoid. The only way I can bring up a graphical editor is by editing an Icon, which appears to be limited in size (I have a 30x60 space to fill with something cute). Also, I haven't figured out how to access the icon as a bitmap. Any clues?

Daryl

Re: Onboard Bitmap Editor?

Posted by [Mike Dunker](#) on January 27, 1999 at 18:58:21:

In Reply to: *Re: Onboard Bitmap Editor?* posted by Daryl Lee on January 27, 1999 at 17:13:06:

> It's the hex editing that I'm trying to avoid. The only way I can bring up a
> graphical editor is by editing an Icon, which appears to be limited in size
> (I
> have a 30x60 space to fill with something cute). Also, I haven't figured
> out
> how to access the icon as a bitmap. Any clues?

I know you can switch the resource type between tAIB and Tbmp within RsrcEdit, so you can edit it as tAIB (using the graphical editor) and then change it to Tbmp when you are finished.

It does seem to limit you to 32x32 though, so you'd probably have to create 2 30x30 bitmaps to cover your 30x60 area.

Mike

Re: Onboard Bitmap Editor?

Posted by [Pat Beirne](#) on January 27, 1999 at 08:01:59:

In Reply to: *Onboard Bitmap Editor?* posted by Daryl Lee on January 27, 1999 at 07:25:37:

> snip.snip.snip Can someone stop me from
this
> madness by pointing me to an onboard bitmap editor that will produce data
in
> some usable form? Any other suggestions for how to go about this?

> Daryl

Daryl,

I have one in progress, but it will be about a week away; I
only get to work on it during boring meetings, and most of my meetings
these days aren't boring!

Pat

More on Profiling

Posted by [Neal Bridges](#) on January 26, 1999 at 02:25:00:

Profiling information lets you see exactly where your app is spending the
most
time.

To profile an app, you'll need a copy of the Palm OS Emulator (POSE) 2.1d23
or
later.

- 1) Compile your Forth app using the registered version of Quartus Forth
(version
1.1.0 or later) using the *generate-symbols* option.
- 2) Hotsync; start POSE and install the resulting PRC.
- 3) From the POSE menu, choose "Profile -> Initialize".
- 4) Start your application. From the POSE menu, choose "Profile -> Start".
- 5) Run your app through its paces; every routine it runs will be timed by the
profiler.
- 6) Choose "Profile -> Stop", and then "Profile -> Dump".

7) In your Palm OS Emulator directory, you'll find "Profile Results.txt"; this contains detailed human-readable timing and frequency information on every routine executed during the profiling. The names of all Forth words executed will be listed.

Neal

Quartus Forth version 1.1.0 now available!

Posted by [Neal Bridges](#) on January 25, 1999 at 23:29:39:

I've posted version 1.1.0; it can optionally generate debugging symbols in stand-alone apps. With the symbols, when profiling or debugging using the Palm OS Emulator, your Forth words (and most kernel words) appear by name in the output. Very handy.

Enjoy!

Neal

- [Quartus Forth Home Page](#)

Re: Quartus Forth version 1.1.0 now available!

Posted by [Neal Bridges](#) on January 25, 1999 at 23:34:14:

In Reply to: *Quartus Forth version 1.1.0 now available!* posted by Neal Bridges on January 25, 1999 at 23:29:39:

> I've posted version 1.1.0; it can optionally generate debugging symbols in
> stand-alone apps. With the symbols, when profiling or debugging using the
Palm
> OS Emulator, your Forth words (and most kernel words) appear by name in the
> output. Very handy.

> Enjoy!

...and the way to turn on symbol generation is:

```
true generate-symbols
```

Neal

Golfers?

Posted by [Daryl Lee](#) on January 25, 1999 at 13:52:25:

I'm looking for a few good folk who are both Quartus users and golfers. I have sent Neal an "alpha" version of a Golf Handicap calculator application I have just written in Quartus Forth. Two data entry bullet-proofing improvements from now and I'll be ready for some "beta" testers, but I would like to limit it to people who know enough about golf handicaps to test it without too much explanation from me. (I don't mind explaining things, but I want a really good test, the kind you get when people don't have any biases.)

If you'd like to test it, say so here, and I'll send you the executable ready for hot-syncing.

By way of testimonial, I want to express my compliments to our gracious host and tool-maker, Neal. Once I got over some mental hurdles, like finally realizing that all data really IS in RAM, I was able to use the existing documentation with just a few gentle nudges from Neal. This development environment is more convenient than any I've ever seen for small apps (this one takes about 8.2K), since you need not be very far from your environment. I carry my Palm III just about everywhere, and I can whip out a little test code in the doctor's office, for example.

Again, Neal, thanks for a great product.

Daryl

Re: Golfers?

Posted by [Zdenek Svaton](#) on February 08, 1999 at 12:17:48:

In Reply to: *Golfers?* posted by Daryl Lee on January 25, 1999 at 13:52:25:

Hi, I'm looking for a good "GolfScoreCardHandicapCalculator" and so. Can i be "beta" tester to? But don't forget, in the Switzerland is Winter yet.

> I'm looking for a few good folk who are both Quartus users and golfers. I have

> sent Neal an "alpha" version of a Golf Handicap calculator application I have

> just written in Quartus Forth. Two data entry bullet-proofing improvements
> from now and I'll be ready for some "beta" testers, but I would like to
limit
> it to people who know enough about golf handicaps to test it without too
much
> explanation from me. (I don't mind explaining things, but I want a really
good
> test, the kind you get when people don't have any biases.)

> If you'd like to test it, say so here, and I'll send you the executable
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> for hot-syncing.

> By way of testimonial, I want to express my compliments to our gracious
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> and tool-maker, Neal. Once I got over some mental hurdles, like finally
> realizing that all data really IS in RAM, I was able to use the existing
> documentation with just a few gentle nudges from Neal. This development
> environment is more convenient than any I've ever seen for small apps (this
one
> takes about 8.2K), since you need not be very far from your environment. I
> carry my Palm III just about everywhere, and I can whip out a little test
code
> in the doctor's office, for example.

> Again, Neal, thanks for a great product.

> Daryl

Re: Golfers?

Posted by [Ken Butterfield](#) on January 31, 1999 at 19:48:24:

In Reply to: *Golfers?* posted by Daryl Lee on January 25, 1999 at 13:52:25:

I am also a golfer and would volunteer to beta test if you need a victim!
Ken B

> I'm looking for a few good folk who are both Quartus users and golfers. I
have
> sent Neal an "alpha" version of a Golf Handicap calculator application I
have
> just written in Quartus Forth. Two data entry bullet-proofing improvements
> from now and I'll be ready for some "beta" testers, but I would like to
limit
> it to people who know enough about golf handicaps to test it without too
much

> explanation from me. (I don't mind explaining things, but I want a really good
> test, the kind you get when people don't have any biases.)
> If you'd like to test it, say so here, and I'll send you the executable ready
> for hot-syncing.
> By way of testimonial, I want to express my compliments to our gracious host
> and tool-maker, Neal. Once I got over some mental hurdles, like finally
> realizing that all data really IS in RAM, I was able to use the existing
> documentation with just a few gentle nudges from Neal. This development
> environment is more convenient than any I've ever seen for small apps (this one
> takes about 8.2K), since you need not be very far from your environment. I
> carry my Palm III just about everywhere, and I can whip out a little test code
> in the doctor's office, for example.
> Again, Neal, thanks for a great product.
> Daryl

char storage

Posted by [Mike Will](#) on January 24, 1999 at 10:52:57:

I have a small conundrum here. I'm playing around with strings, and I've hit a wall:

```
: c-str ( size -- ) \ build a little char string
  create here , allot ;      \ 1st cell is addr of last char
: c-append ( c addr -- )
  1 over +! ( inc addr of last char ) @ c! ;

5 c-str a      \ create a new 5 char string
48 a c-append  \ add a '0'
a .           \ addr of addr of 1st char
a @ .        \ addr of 1st char
```

Quartus displays 624 and 560.

Why aren't the results 624 and 625 ? Does it have something to do with char vs.

cell alignment?

Your thoughts are appreciated.

Mike

Re: char storage

Posted by [Neal Bridges](#) on January 24, 1999 at 12:45:22:

In Reply to: *char storage* posted by Mike Will on January 24, 1999 at 10:52:57:

> I have a small conundrum here. I'm playing around with strings, and I've hit a

> wall:

>

```
> : c-str ( size -- ) \ build a little char string
>   create here , allot ;      \ 1st cell is addr of last char
> : c-append ( c addr -- )
>   1 over +! ( inc addr of last char ) @ c! ;
```

```
> 5 c-str a      \ create a new 5 char string
> 48 a c-append  \ add a '0'
> a .           \ addr of addr of 1st char
> a @ .        \ addr of 1st char
```

> Quartus displays 624 and 560.

>

> Why aren't the results 624 and 625 ? Does it have something to do with char vs.

> cell alignment?

> Your thoughts are appreciated.

There's a bug in the code. In `c-str`, when you `CREATE` your word, you're using `,` to store the location of the start of the data area, but should really be storing the start of the data *after* the first cell. Otherwise the first character you append overwrites the first cell.

Here's a fix:

```
: c-str ( size -- ) \ build a little char string
  create here cell+ , allot ;      \ 1st cell is addr of last char
```

Neal

Re: char storage

Posted by [Mike Will](#) on January 24, 1999 at 13:06:43:

In Reply to: *Re: char storage* posted by Neal Bridges on January 24, 1999 at 12:45:22:

> There's a bug in the code. In c-str, when you CREATE your word, you're using ,
> to store the location of the start of the data area, but should really be
> storing the start of the data *after* the first cell. Otherwise the
> first character you append overwrites the first cell.

> Here's a fix:

>

```
> : c-str ( size -- ) \ build a little char string  
>   create here cell+ , allot ;      \ 1st cell is addr of last char  
>
```

> Neal

Thanks, Neal. I got this code from a similar thing for integers, and its code for i-append started with a 2 +! which got it over the first cell safely.

With
chars, a similar 1 +! dumps you right in the middle of the first cell. I must be getting senile.

Mike

MathLib

Posted by [Ingo Mathyl](#) on January 21, 1999 at 18:03:32:

Hi Neal,

congratulations for your final release of QUARTUS!

I did some test and compiled your applications and than my own code.

It is amazing to see how compact the standalone-apps are!

I have a strong need for floating point functions and that's why I started to access MathLib.

Now I've got the problem with the different fpl-format in Quartus and MathLib and I need your help.

I would like use your flp-wordset and your flp-stack and will not redefine

it.

Is that the right way?

Thank you Ingo

Here are my first experiments

```
\ mathlib IM 12.1.99
```

```
needs ids
```

```
needs zstrings
```

```
1 constant MLver \ version
```

```
variable #apps \ #apps uses ML
```

```
variable MLrefnum
```

```
0 MLrefnum !
```

```
ID MthL
```

```
ID libr
```

```
: MathLibFind ( -- Err)
```

```
MLrefnum >abs
```

```
z" MathLib"drop >abs
```

```
SysLibFind ;
```

```
: MathLibLoad ( -- Err )
```

```
MLrefnum >abs MthL libr
```

```
SysLibLoad ;
```

```
: MathLibTblEntry
```

```
( -- &MathLibTblEntryPtr )
```

```
MLrefnum @ SysLibTblEntry ;
```

```
: MathLibRemove ( -- Err )
```

```
MLrefnum @ SysLibRemove ;
```

```
: MLsystrap ( trap# -- )
```

```
MLrefnum @ swap systrap drop ;
```

```
hex
```

```
: MathLibOpen ( - error)
```

```
MLver 0a801 mlsystrap
```

```
drop d0 drop ;
```

```
: MathLibClose ( - error )
```

```
#apps >abs 0a802 mlsystrap
```

```
2drop d0 drop ;
```

```
: MathLibInit ( - ) \ opens ML for use
```

```
MathLibFind
```

```
if MathLibLoad
```

```
if abort" Can't find MathLib"
```

```
then
```

```
then
```

```
MathLibOpen
```

```
if abort" Can't open MathLib"
```

then ;
decimal

Re: MathLib

Posted by [Neal Bridges](#) on January 21, 1999 at 18:31:17:

In Reply to: *MathLib* posted by Ingo Mathyl on January 21, 1999 at 18:03:32:

> congratulations for your final release of QUARTUS!

Thanks!

> I did some test and compiled your
> applications and than my own code.
> It is amazing to see how compact the
> standalone-apps are!

With continued efforts in optimization, I hope to make them smaller yet.

> I have a strong need for floating point functions and that's
> why I started to access MathLib.
> Now I've got the problem with the different fpl-format in Quartus and
> MathLib and I need your help.
> I would like use your flp-wordset and your flp-stack and will not redefine
it.
> Is that the right way?

Aside from the code you posted (which at a glance looks good), you'll need
words
to translate Quartus Forth floats to MathLib floats and back.

Neal

Re: MathLib

Posted by [Ingo Mathyl](#) on January 23, 1999 at 17:40:57:

In Reply to: *Re: MathLib* posted by Neal Bridges on January 21, 1999 at
18:31:17:

Hi Neal,

Thank you for your answer!

> Aside from the code you posted (which at a glance looks good), you'll need

words
> to translate Quartus Forth floats to MathLib floats and back.
To do that , I need a better access to your fp-stack.
I think I need access to some of your words like
fp
: >fp (-- r)(F: -- r)
: fp> (F: r --)(-- r)

This could make the work easier.

Bye Ingo.

Re: MathLib

Posted by [Neal Bridges](#) on January 23, 1999 at 19:37:26:

In Reply to: *Re: MathLib* posted by Ingo Mathyl on January 23, 1999 at 17:40:57:

> > Aside from the code you posted (which at a glance looks good), you'll need words
> > to translate Quartus Forth floats to MathLib floats and back.
> To do that , I need a better access to your fp-stack.
> I think I need access to some of your words like
> fp
> : >fp (-- r)(F: -- r)
> : fp> (F: r --)(-- r)

```
2variable ftemp
: >fp ( -- r. ) ( F: -- r )
  ftemp 2! ftemp f@ ;
: fp> ( F: r -- ) ( -- r. )
  ftemp dup f! 2@ ;
```

Neal

Re: MathLib

Posted by [Ingo Mathyl](#) on January 23, 1999 at 17:28:10:

In Reply to: *Re: MathLib* posted by Neal Bridges on January 21, 1999 at 18:31:17:

> > congratulations for your final release of QUARTUS!
> Thanks!
> > I did some test and compiled your
> > applications and than my own code.
> > It is amazing to see how compact the
> > standalone-apps are!
> With continued efforts in optimization, I hope to make them smaller yet.
>
> > I have a strong need for floating point functions and that's
> > why I started to access MathLib.
> > Now I've got the problem with the different fpl-format in Quartus and
> > MathLib and I need your help.
> > I would like use your flp-wordset and your flp-stack and will not
redefine it.
> > Is that the right way?

> Aside from the code you posted (which at a glance looks good), you'll need
words
> to translate Quartus Forth floats to MathLib floats and back.
> Neal

Status Update

Posted by [Neal Bridges](#) on January 21, 1999 at 17:36:01:

Hi folks.

Here's what's happening:

- Generation of Debugging Symbols:

It's working very well indeed; it's in testing now and will appear in the next update. When you generate stand-alone apps with debugging symbols, and then profile your apps using the Palm OS Emulator, the profiling information will show the time spent in each Forth word, by name. Also, when using a debugger

in
conjunction with the Palm OS Emulator, you'll be able to tell (by name)
exactly what word was running when an exception/breakpoint occurred.

- Disassembler/decompiler:

Nearing completion. As a disassembler it's in good shape; I'm working to make
it
translate as many code sequences as possible back into Forth words.

Let me know what you're working on!

Neal

Re: Status Update

Posted by [Ken Butterfield](#) on January 24, 1999 at 16:54:49:

In Reply to: *Status Update* posted by Neal Bridges on January 21, 1999 at
17:36:01:

> Hi folks.

> Here's what's happening:

> - Generation of Debugging Symbols:

> It's working very well indeed; it's in testing now and will appear in the
next

> update. When you generate stand-alone apps with debugging symbols, and then
> profile your apps using the Palm OS Emulator, the profiling information
will

> show the time spent in each Forth word, by name. Also, when using a
debugger in

> conjunction with the Palm OS Emulator, you'll be able to tell (by name)

> exactly what word was running when an exception/breakpoint occurred.

This sounds like it will be really usefull in profiling code.

> - Disassembler/decompiler:

> Nearing completion. As a disassembler it's in good shape; I'm working to
make it

> translate as many code sequences as possible back into Forth words.

I like the idea of a disassembler as well. I am glad you are working on this
aspect

of forth. I have always used the decompiler extensively even when working on
my own code.

>
> Let me know what you're working on!

I am still working on learning how to use more of the UI associated with the palm OS. I like the help Quartus has given to this effort. I plan on using Quartus in embedded applications. The architecture is not fully defined yet. We may use a two processor system or try to use the palm III for the only processor. The UI is very attractive but there is so little in the way of connecting to outside hardware. Our hardware requirements include 2 to 4 channels that would create interrupts in the kHz to 100 kHz range. we have extensive analysis that we would perform on the data and we would like to have real time graphics indicating status and analysis results.

Thanks again for a wonderful version of FORTH!

Re: Status Update

Posted by [Neal Bridges](#) on January 24, 1999 at 19:27:06:

In Reply to: *Re: Status Update* posted by Ken Butterfield on January 24, 1999 at 16:54:49:

> > It's working very well indeed; it's in testing now and will appear in the next update. When you generate stand-alone apps with debugging symbols, and then profile your apps using the Palm OS Emulator, the profiling information will show the time spent in each Forth word, by name. Also, when using a debugger in conjunction with the Palm OS Emulator, you'll be able to tell (by name) exactly what word was running when an exception/breakpoint occurred.

> This sounds like it will be really usefull in profiling code.

It sure is. The Emulator produces profiling code in both human-readable and CodeWarrior-specific formats; it's handy to see how long & how often each word is used. Even kernel words called by an app are profiled.

> > Let me know what you're working on!

> I am still working on learning how to use more of the UI associated with the palm OS. I like the help Quartus has given to this effort. I plan on using Quartus in embedded applications. The architecture is not fully defined yet. We may use a two processor system or try to use the palm III for the only

processor. The UI is very attractive but there is so little in the way of connecting to outside hardware. Our hardware requirements include 2 to 4 channels that would create interrupts in the kHz to 100 kHz range. we have extensive analysis that we would perform on the data and we would like to have real time graphics indicating status and analysis results.

Sounds like you'd ideally have an external device processing the data, feeding info into the Palm via the serial port.

> Thanks again for a wonderful version of FORTH!

Thank you!

Neal

App/DA Launcher

Posted by [Dan Hughes](#) on January 21, 1999 at 10:34:25:

Neal,

First I want to thank you for Quartus. It has got me looking into Forth again since I stop using it around the time F83 standard came out.

I found a Hack on the Pilot HQ page called App/DA Launcher which works real slick. The reason I mention it here is because there is a DA (Desk Accessary), similar to a Dos TSR but for the PalmPilot, that allows selecting and editing memos without leaving Quartus.

Dan

Re: App/DA Launcher

Posted by [Neal Bridges](#) on January 21, 1999 at 22:00:52:

In Reply to: *App/DA Launcher* posted by Dan Hughes on January 21, 1999 at 10:34:25:

> Neal,

> First I want to thank you for Quartus. It has got me looking into Forth
> again since I stop using it around the time F83 standard came out.

> I found a Hack on the Pilot HQ page called App/DA Launcher which works
> real slick. The reason I mention it here is because there is a DA
> (Desk Accessary), similar to a Dos TSR but for the PalmPilot, that allows

> selecting and editing memos without leaving Quartus.

Dan, have you found a DA launcher that doesn't make the Palm OS Emulator go into fits? I've tried three; two write to low memory, the third tries to open a form that's already open. Before I recommend it as a solution, I'd like to find one that doesn't freak out the debug ROM.

Neal

Re: App/DA Launcher

Posted by [Neal Bridges](#) on January 21, 1999 at 11:04:12:

In Reply to: *App/DA Launcher* posted by Dan Hughes on January 21, 1999 at 10:34:25:

> I found a Hack on the Pilot HQ page called App/DA Launcher which works
> real slick. The reason I mention it here is because there is a DA
> (Desk Accessary), similar to a Dos TSR but for the PalmPilot, that allows
> selecting and editing memos without leaving Quartus.

This sounds like what PopUp Note does; is the App/DA also shareware?

Neal

Re: App/DA Launcher

Posted by [Dan Hughes](#) on January 21, 1999 at 12:08:02:

In Reply to: *Re: App/DA Launcher* posted by Neal Bridges on January 21, 1999 at 11:04:12:

Neal,

Both App/DA Launcher and daMemoPad are freeware.

The major difference between daMemoPad and PopUp Note is that with PopUp Note you can only create new notes where with daMemoPad you can select any memo to edit from a list or create new ones. It supports almost everything the built-in MemoPad does.

Dan

> > I found a Hack on the Pilot HQ page called App/DA Launcher which works

> > real slick. The reason I mention it here is because there is a DA
> > (Desk Accessary), similar to a Dos TSR but for the PalmPilot, that allows
> > selecting and editing memos without leaving Quartus.
> This sounds like what PopUp Note does; is the App/DA also shareware?
> Neal

Re: App/DA Launcher

Posted by [Neal Bridges](#) on January 21, 1999 at 12:48:13:

In Reply to: *Re: App/DA Launcher* posted by Dan Hughes on January 21, 1999 at 12:08:02:

> Neal,
> Both App/DA Launcher and daMemoPad are freeware.
> The major difference between daMemoPad and PopUp Note is that with
> PopUp Note you can only create new notes where with daMemoPad you
> can select any memo to edit from a list or create new ones. It supports
> almost everything the built-in MemoPad does.

Actually PopUp Note lets you edit existing notes; just use the PgUp/PgDown buttons. I'll have to try this alternate solution, though.

> Dan
> > > I found a Hack on the Pilot HQ page called App/DA Launcher which works
> > > real slick. The reason I mention it here is because there is a DA
> > > (Desk Accessary), similar to a Dos TSR but for the PalmPilot, that allows
> > > selecting and editing memos without leaving Quartus.
> > This sounds like what PopUp Note does; is the App/DA also shareware?
> > Neal

Re: App/DA Launcher

Posted by [Dan Hughes](#) on January 21, 1999 at 12:01:51:

In Reply to: *Re: App/DA Launcher* posted by Neal Bridges on January 21, 1999 at 11:04:12:

Neal,

The App/DA Launcher Hack and the DA daMemoPad are both freeware.

The major difference between daMemoPad and PopUp Note, besides price, is that with PopUp Note you can only create a new note where with daMemoPad you can get a list of all memo to edit or create new ones. It even supports categories. It has most of the features of the built-in MemoPad app.

Dan

> > I found a Hack on the Pilot HQ page called App/DA Launcher which works
> > real slick. The reason I mention it here is because there is a DA
> > (Desk Accessary), similar to a Dos TSR but for the PalmPilot, that allows
> > selecting and editing memos without leaving Quartus.

> This sounds like what PopUp Note does; is the App/DA also shareware?

> Neal

A new game written using Quartus Forth!

Posted by [Neal Bridges](#) on January 21, 1999 at 00:17:41:

At the link below you'll find Ishido, a game coded by Jürgen Bermann using Quartus Forth. It's quite addictive; I recommend it.

Neal

- [Jürgen Bermann's Home Page](#)

struct.txt available in the File Area

Posted by [Neal Bridges](#) on January 20, 1999 at 21:03:15:

I've put *struct.txt* in the Quartus File Area, after having it pointed out to me that despite discussing it several times, it wasn't there :)

Neal

Re: struct.txt available in the File Area

Posted by [Carl Jacobsen](#) on January 22, 1999 at 00:28:20:

In Reply to: *struct.txt available in the File Area* posted by Neal Bridges on January 20, 1999 at 21:03:15:

> I've put *struct.txt* in the Quartus File Area, after having it pointed
> out to me that despite discussing it several times, it wasn't there :)

Glad to see it there, but when I do a "include struct" in Quartus,
I get: "0allot? undefined word" -- is this a typo, or do you have
a 0allot word you haven't shared with us yet? :-)

-- Carl

Re: struct.txt available in the File Area

Posted by [Neal Bridges](#) on January 22, 1999 at 13:36:30:

In Reply to: *Re: struct.txt available in the File Area* posted by Carl
Jacobsen on January 22, 1999 at 00:28:20:

> > I've put *struct.txt* in the Quartus File Area, after having it
pointed
> > out to me that despite discussing it several times, it wasn't there :)

> Glad to see it there, but when I do a "include struct" in Quartus,
> I get: "0allot? undefined word" -- is this a typo, or do you have
> a 0allot word you haven't shared with us yet? :-)

Ah, so it is. I'll have to update *toolkit.txt*. In the meantime:

```
: 0allot ( chars -- )  
  here over allot swap 0 fill ;
```

Neal

Emulator Memo Extractor now available

Posted by [Neal Bridges](#) on January 20, 1999 at 19:04:51:

eme.zip is now available in the Quartus Forth File Area. It's a program (written and contributed by Mike Will) that extracts memos from Palm OS

Emulator .RAM files. With this, you can develop & test in the emulator and then

extract your work back to .TXT files for HotSyncing onto your real Palm device.

Thanks, Mike!

Neal

Null Terminated Strings

Posted by [Daniel E. Jarman](#) on January 20, 1999 at 13:09:59:

Here are some words I wrote to facilitate working with 0 terminated strings. Let me know what you think, and if they are useful.

Great product Neal!

Daniel E. Jarman
Crash Master Systems
crashmstr@aol.com

```
\ zbuf 01201999 DeJ
needs core-ext \ 2>r 2r>

: cmove> ( c-addrS c-addrD u -- )
for
2dup swap i tuck
+ c@ rot rot + c!
next 2drop ;

\ create zbuf with name & u+2 size
\ [size][size+1 chars]
\ allows for size chars with 0 @ end
: zbuf ( u "name" -- )
here swap dup create
2 + chars allot swap c!
does> 1 chars + ;

: zbuf-size ( zb-addr -- )
```

```

1 chars - c@ ;

\ make zbuf at zb-addr all 0's
: zbuf-blank ( zb-addr -- )
dup zbuf-size 1+ for
dup i + 0 swap c!
next drop ;

\ zbuf initialized to 0's
: zbuf0 ( u "name" -- )
here swap zbuf 1 chars +
zbuf-blank ;

\ copies c-addr u to zb-addr
\ if zbuf-size < u, only zbuf-size is copied
: string>zbuf ( c-addr u zb-addr -- )
over over zbuf-size min
rot drop 2dup
2>r cmove> 2r> + 0 swap c! ;

\ puts count on stack above zb-addr
\ to be used as c-addr u
: zbuf>string ( zb-addr -- zb-addr u )
0 begin
2dup 2dup
swap zbuf-size 1+ <
rot rot
+ c@ 0= 0= and
while 1+ repeat ;

\ zbuf to zbuf copy
: zbuf>zbuf ( zb-addrS zb-addrD -- )
swap zbuf>string rot
string>zbuf ;

\ returns count of zb-addr
: zbuf-count ( zb-addr -- u )
zbuf>string nip ;

: zbuf-type ( zb-addr -- )
zbuf>string type ;

```

Re: Null Terminated Strings

Posted by [Neal Bridges](#) on January 20, 1999 at 15:07:29:

In Reply to: *Null Terminated Strings* posted by Daniel E. Jarman on January 20, 1999 at 13:09:59:

```
> Here are some words I wrote to facilitate working with 0 terminated
strings.
> Let me know what you think, and if they are useful.
> Great product Neal!
```

Thanks!

```
> \ zbuf 01201999 DeJ
> needs core-ext \ 2>r 2r>
> : cmove> ( c-addrS c-addrD u -- )
> for
> 2dup swap i tuck
> + c@ rot rot + c!
> next 2drop ;
```

Here you could just use MOVE for simplicity.

```
> \ create zbuf with name & u+2 size
> \ [size][size+1 chars]
> \ allows for size chars with 0 @ end
> : zbuf ( u "name" -- )
> here swap dup create
> 2 + chars allot swap c!
> does> 1 chars + ;
```

CHAR+ is available; it is equivalent to "1 CHARS +".

```
> : zbuf-size ( zb-addr -- )
> 1 chars - c@ ;
> \ make zbuf at zb-addr all 0's
> : zbuf-blank ( zb-addr -- )
> dup zbuf-size 1+ for
> dup i + 0 swap c!
> next drop ;
```

Here, ERASE (or 0 FILL) would be a good choice.

```
> \ zbuf initialized to 0's
> : zbuf0 ( u "name" -- )
> here swap zbuf 1 chars +
> zbuf-blank ;
```

Again, ERASE or FILL.

```
> \ copies c-addr u to zb-addr
> \ if zbuf-size < u, only zbuf-size is copied
> : string>zbuf ( c-addr u zb-addr -- )
> over over zbuf-size min
> rot drop 2dup
> 2>r cmove> 2r> + 0 swap c! ;

> \ puts count on stack above zb-addr
> \ to be used as c-addr u
> : zbuf>string ( zb-addr -- zb-addr u )
> 0 begin
> 2dup 2dup
> swap zbuf-size 1+ <
> rot rot
> + c@ 0= 0= and
> while 1+ repeat ;

> \ zbuf to zbuf copy
> : zbuf>zbuf ( zb-addrS zb-addrD -- )
> swap zbuf>string rot
> string>zbuf ;

> \ returns count of zb-addr
> : zbuf-count ( zb-addr -- u )
> zbuf>string nip ;

> : zbuf-type ( zb-addr -- )
> zbuf>string type ;
```

Neal

Re: Null Terminated Strings (oops, sorry re: extra post)

Posted by [Daniel E. Jarman](#) on January 20, 1999 at 13:14:09:

In Reply to: *Null Terminated Strings* posted by Daniel E. Jarman on January 20, 1999 at 13:09:59:

Oops, sorry about the second post.

Daniel E. Jarman
Crash Master Systems
crashmstr@aol.com

Null Terminated Strings

Posted by [Daniel E. Jarman](#) on January 20, 1999 at 12:57:34:

I have written some words to work with 0 terminated strings. I thought that these might be useful for working with the PalmOS routines. I started writing these when I started work on converting an app from gcc to Quartus, as I had a call to StrIToA. Let me know what you think (are they good/useful etc.)

Daniel E. Jarman

P.S. Great product Neal

```
\ zbuf 01201999 DeJ
needs core-ext \ 2>r 2r>

: cmove> ( c-addrS c-addrD u -- )
for
2dup swap i tuck
+ c@ rot rot + c!
next 2drop ;

\ create zbuf with name & u+2 size
\ [size][size+1 chars]
\ allows for size chars with 0 @ end
: zbuf ( u "name" -- )
here swap dup create
2 + chars allot swap c!
does> 1 chars + ;

: zbuf-size ( zb-addr -- )
1 chars - c@ ;

\ make zbuf at zb-addr all 0's
: zbuf-blank ( zb-addr -- )
dup zbuf-size 1+ for
dup i + 0 swap c!
next drop ;

\ zbuf initialized to 0's
: zbuf0 ( u "name" -- )
here swap zbuf 1 chars +
zbuf-blank ;

\ copies c-addr u to zb-addr
\ if zbuf-size < u, only zbuf-size is copied
: string>zbuf ( c-addr u zb-addr -- )
over over zbuf-size min
rot drop 2dup
2>r cmove> 2r> + 0 swap c! ;

\ puts count on stack above zb-addr
```

```
\ to be used as c-addr u
: zbuf>string ( zb-addr -- zb-addr u )
0 begin
2dup 2dup
swap zbuf-size 1+ <
rot rot
+ c@ 0= 0= and
while 1+ repeat ;

\ zbuf to zbuf copy
: zbuf>zbuf ( zb-addrS zb-addrD -- )
swap zbuf>string rot
string>zbuf ;

\ returns count of zb-addr
: zbuf-count ( zb-addr -- u )
zbuf>string nip ;

: zbuf-type ( zb-addr -- )
zbuf>string type ;
```

Tip for Testing

Posted by [Erwin Schomburg](#) on January 20, 1999 at 12:14:13:

Hi, the new BackupBuddyNG allows to file the conduit databases like MemoPadDB to be stored as .pdb files. These files you can install to the Emulator directly, without the need to utilize the notoriously unreliable Hotsync with Emulator to get them from the .dat files. Now you can have your memo-ed sources on the Emulator for testruns without much pain.

/Erwin

Re: Tip for Testing

Posted by [Mike Will](#) on January 20, 1999 at 14:01:07:

In Reply to: *Tip for Testing* posted by Erwin Schomburg on January 20, 1999 at 12:14:13:

> Hi, the new BackupBuddyNG allows to file the conduit databases like MemoPadDB

to
> be stored as .pdb files. These files you can install to the Emulator
directly,
> without the need to utilize the notoriously unreliable Hotsync with
Emulator
to
> get them from the .dat files. Now you can have your memo-ed sources on the
> Emulator for testruns without much pain.

> /Erwin

Wow. That works beautifully. Now I don't need to keep checking the Emulator
newsgroup everyday hoping in vain that cable-less hotsync becomes available.
danke schön!

Re: Tip for Testing

Posted by [Neal Bridges](#) on January 20, 1999 at 12:52:49:

In Reply to: *Tip for Testing* posted by Erwin Schomburg on January 20, 1999 at
12:14:13:

> Hi, the new BackupBuddyNG allows to file the conduit databases like
MemoPadDB
to
> be stored as .pdb files. These files you can install to the Emulator
directly,
> without the need to utilize the notoriously unreliable Hotsync with
Emulator
to
> get them from the .dat files. Now you can have your memo-ed sources on the
> Emulator for testruns without much pain.

Penguin Backup (which is free) also allows the MemoDB to be saved as a .pdb
--

my early tests (a month ago) at trying to load these into the Emulator were
unsuccessful. I'll have to try again with the new version of the Emulator.

Neal

Re: Tip for Testing

Posted by Erwin on January 21, 1999 at 03:13:05:

In Reply to: *Re: Tip for Testing* posted by Neal Bridges on January 20, 1999 at 12:52:49:

> > Hi, the new BackupBuddyNG allows to file the conduit databases like MemoPadDB
> to
> > be stored as .pdb files. These files you can install to the Emulator directly,
> > without the need to utilize the notoriously unreliable Hotsync with Emulator
> to
> > get them from the .dat files. Now you can have your memo-ed sources on the
> > Emulator for testruns without much pain.
> Penguin Backup (which is free) also allows the MemoDB to be saved as a .pdb
--
> my early tests (a month ago) at trying to load these into the Emulator were
> unsuccessful. I'll have to try again with the new version of the Emulator.
> Neal

pdb's generated by BB do work plus the advantage that I do not have to (re-) boot a Linux filesystem. Admitted that Penguin has its merits if moving between machines where no Desktop SW is available, but thats where you don't have Emulator either.

/Erwin

Re: Tip for Testing

Posted by [Neal Bridges](#) on January 21, 1999 at 12:50:16:

In Reply to: *Re: Tip for Testing* posted by Erwin on January 21, 1999 at 03:13:05:

> pdb's generated by BB do work plus the advantage that I do not have to (re-)
> boot a Linux filesystem. Admitted that Penguin has its merits if moving between
> machines where no Desktop SW is available, but thats where you don't have
> Emulator either.

The new Penguin Backup is quite nice; a single diskette, menu-driven, very fast.

It does, as you say, require rebooting to the diskette.

Neal

Re: Tip for Testing

Posted by [Mike Will](#) on January 20, 1999 at 18:39:05:

In Reply to: *Re: Tip for Testing* posted by Neal Bridges on January 20, 1999 at 12:52:49:

> > Now you can have your memo-ed sources on the
> > Emulator for testruns without much pain.

> > / Erwin

Now you can also save your Emulator sources back to a text file !
I've written a little DOS utility called EME (Emulator Memo Extractor) that digs into your .RAM file in your emulator directory and extracts (copies) any specified memo to disk.

eg.

EME core-ext

will extract core-ext memo to CORE-EXT.TXT in the same directory.

From there, you can hotsync it back to your palmtop, if you like. It's not perfect, but it's a good workaround for now. I don't have any web space, but I've e-mailed the file to Neal, and he can make it available if he sees fit.

The only preparation you have to do is to copy your .RAM file to a new one called EME.RAM (you can use the 2k, 4k, or 8k, wherever your memos are). EME.EXE, EME.RAM, and the outputfile, such as CORE-EXT.TXT will all be in the same directory.

Mike

Re: Tip for Testing

Posted by [Jim Thompson](#) on January 27, 1999 at 07:02:56:

In Reply to: *Re: Tip for Testing* posted by Mike Will on January 20, 1999 at 18:39:05:

> Now you can also save your Emulator sources back to a text file !
> I've written a little DOS utility called EME (Emulator Memo Extractor) that
> digs into your .RAM file in your emulator directory and extracts (copies)
> any specified memo to disk.
> I've e-mailed the file to Neal, and he can make it available if he sees
fit.

Did EME get posted somewhere? Thanks.

Jim

Re: Tip for Testing

Posted by [Jim Thompson](#) on January 27, 1999 at 07:08:01:

In Reply to: *Re: Tip for Testing* posted by Jim Thompson on January 27, 1999 at 07:02:56:

> Did EME get posted somewhere? Thanks.

Found it:

<http://www.interlog.com/~nbridges/search/list.cgi?dir=dist/quartus&i=.quartus>

Jim

Re: Tip for Testing

Posted by Erwin on January 21, 1999 at 10:10:59:

In Reply to: *Re: Tip for Testing* posted by Mike Will on January 20, 1999 at 18:39:05:

> > > Now you can have your memo-ed sources on the
> > > Emulator for testruns without much pain.

> > > / Erwin

> Now you can also save your Emulator sources back to a text file !
> I've written a little DOS utility called EME (Emulator Memo Extractor) that

> digs into your .RAM file in your emulator directory and extracts (copies)
> any specified memo to disk.

> eg.
> EME core-ext

> will extract core-ext memo to CORE-EXT.TXT in the same directory.

Who is still using versions of Emulator producing .RAM files? Working EME on .psf files renamed to EME.RAM produce a "Processing error". Nice try though, but...

/Erwin

> From there, you can hotsync it back to your palmtop, if you like. It's not
> perfect, but it's a good workaround for now. I don't have any web space,
but
> I've e-mailed the file to Neal, and he can make it available if he sees
fit.

> The only preparation you have to do is to copy your .RAM file to a new one
> called EME.RAM (you can use the 2k, 4k, or 8k, wherever your memos are).
> EME.EXE, EME.RAM, and the outputfile, such as CORE-EXT.TXT will all be in
> the same directory.

> Mike

Re: Tip for Testing

Posted by [Kip DeGraaf](#) on January 21, 1999 at 12:45:18:

In Reply to: *Re: Tip for Testing* posted by Erwin on January 21, 1999 at 10:10:59:

> Who is still using versions of Emulator producing .RAM files? Working EME
on
> .psf files renamed to EME.RAM produce a "Processing error". Nice try
though,
> but...

I'm still using the Windows version 2.0b3, which according to 3COM is the current official release. Are you using 2.1d23?

Re: Tip for Testing

Posted by [Mike Will](#) on January 21, 1999 at 13:21:55:

In Reply to: *Re: Tip for Testing* posted by Kip DeGraaf on January 21, 1999 at 12:45:18:

> > Who is still using versions of Emulator producing .RAM files? Working EME on
> > .psf files renamed to EME.RAM produce a "Processing error". Nice try though,
> > but...

> I'm still using the Windows version 2.0b3, which according to 3COM is the
> current official release. Are you using 2.1d23?

The 3-COM development site is still serving 2.0b3. I dug around a bit and found 2.1d23 on one of the PalmIII sites. Anyway, I've updated EME to work with both .RAM and .PSF files.

A few notes:

- 1) the "processing error" usually indicates that the memo wasn't found, which is often cause by specifying "\ sourceFileName" instead of the proper "sourceFileName"
- 2) EME only works with Quartus Forth memos, no others because it depends on the "\ " beginning of a Quartus file.
- 3) for the same reason, EME might return an erroneous memo if the sequence "\ sourceFileName" occurs somewhere else in a memo
- 4) for that reason, I can't easily make EME extract all Quartus memos at once

Mike

Re: Tip for Testing

Posted by Erwin on January 21, 1999 at 13:50:30:

In Reply to: *Re: Tip for Testing* posted by Mike Will on January 21, 1999 at 13:21:55:

> > > Who is still using versions of Emulator producing .RAM files? Working EME
> on
> > > .psf files renamed to EME.RAM produce a "Processing error". Nice try though,

> > > but...

> > I'm still using the Windows version 2.0b3, which according to 3COM is the
> > current official release. Are you using 2.1d23?

>

> The 3-COM development site is still serving 2.0b3. I dug around a bit and
found

> 2.1d23 on one of the PalmIII sites. Anyway, I've updated EME to work with
> both .RAM and .PSF files.

> A few notes:

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> is often cause by specifying "\ sourceFileName" instead of the proper
> "sourceFileName"

> 2) EME only works with Quartus Forth memos, no others because it depends on
the

> "\ " beginning of a Quartus file.

> 3) for the same reason, EME might return an erroneous memo if the sequence

> "\ sourceFileName" occurs somewhere else in a memo

> 4) for that reason, I can't easily make EME extract all Quartus memos at
once

> Mike

Yep I'm using the 2.1.. series Emulators ever since I found that I can load
OS

patches without getting permanent naggers about direct
memory/globals/registers
access out of it.

One memo at a time is fine with me, and the new EME version does what is
promised, thanks for another use-able/ful tool.

/Erwin

Newbie's question: what is p4ap?

Posted by [Philippe de Rochembeau](#) on January 20, 1999 at 09:47:49:

Could someone explain what the following line means:

```
(ID) p4ap (ID) util use-resources
```

What is p4ap? What is (ID), the resource's ID?

Many thanks.

Re: Newbie's question: what is p4ap?

Posted by [Neal Bridges](#) on January 20, 1999 at 10:16:23:

In Reply to: *Newbie's question: what is p4ap?* posted by Philippe de Rochambeau on January 20, 1999 at 09:47:49:

> Could someone explain what the following line means:

> (ID) p4ap (ID) util use-resources

> What is p4ap? What is (ID), the resource's ID?

If you have a look at *use-resources*, you'll see:

```
: use-resources
( creator-id. type. -- )
...
```

use-resources opens a resource database for use; in your example, (ID) p4ap is the creator-id, (ID) util is the type.

Any general-purpose resource databases for Quartus Forth that I create (such as the one in *qrsrc.zip*) will have a creator ID of "(ID) p4ap".

When you use GUI resources in your own applications, it's good practice to make the resource database for your app have the same creator ID as your app, with a type of "(ID) rsrc".

Neal

News flash: Debugging and profiling support

Posted by [Neal Bridges](#) on January 19, 1999 at 22:45:15:

I'm building debugging symbol support into the registered version; this will let you profile your stand-alone apps with the Palm OS Emulator (profile version), and display the names of Forth words in the debugger.

Life is good!

Neal

Reversing the order of the stack [flipstack]

Posted by [Todd Manning](#) on January 19, 1999 at 21:53:51:

All-

Just thought I'd publicize two words I've written:

```
flipstack ( xu...x0 -- x0...xu )
nflipTstack ( xu...x0 n -- xu..x0-n..x0..x0-n-1 )
```

flipstack reverses the entire stack.

nflipTstack reverses the top n items on the stack.

These are my first Forth words. Any criticism/pointers welcome. Perhaps someone out there even **needs** a word like this. Perhaps someone already wrote this. I hadn't seen it.

<http://www.developmental.net/>

Re: Reversing the order of the stack [flipstack]

Posted by [Neal Bridges](#) on January 19, 1999 at 22:39:42:

In Reply to: *Reversing the order of the stack [flipstack]* posted by Todd Manning on January 19, 1999 at 21:53:51:

> All-

> Just thought I'd publicize two words I've written:

```
> flipstack ( xu...x0 -- x0...xu )
> nflipTstack ( xu...x0 n -- xu..x0-n..x0..x0-n-1 )
```

> flipstack reverses the entire stack.

> nflipTstack reverses the top n items on the stack.

> These are my first Forth words. Any criticism/pointers
> welcome. Perhaps someone out there even **needs** a word
> like this. Perhaps someone already wrote this. I hadn't
> seen it.

> <http://www.developmental.net/>

Thanks, Todd. It triggered a memory of something I saw Wil Baden write on comp.lang.forth awhile ago:

```
: reverse-data ( x0..xn n -- xn..x0 )  
  ?dup if dup roll >r 1- recurse r> then ;
```

This is functionally equivalent to your 'nFlipStack'. 'FlipStack' would then be

```
: FlipStack ( x0..xn -- xn..x0 ) depth reverse-data ;
```

Although I normally discourage all use of the PICK and ROLL words (they encourage stack clutter), this is one instance for which ROLL is particularly suited.

I can't think of too many occasions where I'd need to reverse the whole stack, but it's an interesting exercise nonetheless.

Neal

Floating Point Format

Posted by [Mike Will](#) on January 19, 1999 at 17:46:07:

Neal, in the Floating Point Format, there's an equation:

$$(-1)^S * m * 2^{e-88}$$

Are you sure about the 88? Shouldn't it be more like 65?

Also, when you get a chance, could you check this word that fetches a float from the float stack to the parameter stack for me?

```
: F> ( F: r -- d )  
  FDEPTH IF FP0 @ DUP 2@ ROT 1 FLOATS + FP0 ! THEN ;
```

Thanks.

Re: Floating Point Format

Posted by [Mike Will](#) on January 19, 1999 at 20:37:41:

In Reply to: *Floating Point Format* posted by Mike Will on January 19, 1999 at 17:46:07:

> Are you sure about the 88? Shouldn't it be more like 65?

Oh-oh. I'm very sorry, Neal. I was so focussed on the exponent that I completely ignored the fact that the mantissa is shifted 24 bits left of the decimal point ! 88 is the correct number.

All this is for my FEXP function which I'll post shortly.

Apologies

Mike

Re: Floating Point Format

Posted by [Neal Bridges](#) on January 19, 1999 at 20:44:07:

In Reply to: *Re: Floating Point Format* posted by Mike Will on January 19, 1999 at 20:37:41:

> > Are you sure about the 88? Should'nt it be more like 65?

> Oh-oh. I'm very sorry, Neal. I was so focussed on the exponent that I
> completely ignored the fact that the mantissa is shifted 24 bits left of
> the
> decimal point ! 88 is the correct number.

> All this is for my FEXP function which I'll post shortly.

> Apologies

> Mike

Not to worry, though it did have me scratching my head for a moment.

> Also, when you get a chance, could you check this word that fetches a float
> from the float stack to the parameter stack for me?

> : F> (F: r -- d)

> FDEPTH IF FP0 @ DUP 2@ ROT 1 FLOATS + FP0 ! THEN ;

>

I think I see what you're after there -- this is a simpler way:

FVARIABLE temp

: F> (F: r --) (-- r.) temp dup f! 2@ ;

Neal

FEXP

Posted by [Mike Will](#) on January 19, 1999 at 21:32:29:

In Reply to: *Re: Floating Point Format* posted by Neal Bridges on January 19, 1999 at 20:44:07:

```
> > : F> ( F: r -- d )
> > FDEPTH IF FP0 @ DUP 2@ ROT 1 FLOATS + FP0 ! THEN ;
> >
```

> I think I see what you're after there -- this is a simpler way:

```
> FVARIABLE temp
> : F> ( F: r -- ) ( -- r. ) temp dup f! 2@ ;
```

Right, I was just trying to avoid the need for a variable, but yours is much cleaner. In FEXP, it's necessary to directly write an exponent part to a float, which necessitates all this stuff. People who want to do this can make their choice, I guess.

So, here is my version of FEXP. It's good for about 7 digits of accuracy over a range of $\exp(0 \text{ to } +/-40)$.

Now, I'm pretty good at math (I've noticed several other number theorists on this discussion list), but not so hot at Forth (Just ask Neal). So, before you go building any parts for the space station with this function, please test it thoroughly.

```
\ FEXP exponential function
\ public domain
```

```
\ some preliminary words for direct manipulation of floats
```

```
FVARIABLE temp
: F> ( F: r -- ) ( -- r. ) temp dup F! 2@ ;
: >F ( r. -- ) ( F: -- r ) temp 2! temp F@ ;

: F1/X ( F: r -- F: r ) 1E0 FSWAP F/ ;
```

```
\ a primitive for normalized FEXP (don't use directly)
```

```
: (FEXP)   FDUP
           -0.1413161E-3 F*
           1.329882E-3 F+ FOVER F*
           -0.830136E-2 F+ FOVER F*
           0.41657347E-1 F+ FOVER F*
           -0.1666653E0 F+ FOVER F*
           0.5E0 F+ FOVER F*
           -1E0 F+ F*
```

```
1E0 F+ F1/X ;
```

```
\ the final word, which handles exponent scaling
: FEXP ( F: r -- F: r )
  FDUP F0< ABS FABS
  FDUP 40E0 FSWAP F< ABORT" EXP overflow"
  FDUP 1.44269504E0 F*
  FDUP F>D DROP >R
  FLOOR 0.6931472E0 F* F- (FEXP)
R> 65 + 32768 >F F* ( Here's the 65 I was talking about, Neal)
IF F1/X THEN ;
```

\ examples:

```
1E0 FEXP FS. 0.27182817E1
1E1 FEXP FS. 0.22026464E5
-3.456E0 FEXP FS. 0.31555700E-1
```

I started with an algorithm from FIG France, who borrowed it from some American engineering group (name escapes me at the moment). It was originally written for a 48-bit float package on a 32-bit Forth. Maybe we can hammer this into a bullet-proof piece of code that can be used in the 'good stuff' like neural networks and complexity.

Mike

Re: FEXP

Posted by [Neal Bridges](#) on January 19, 1999 at 22:23:09:

In Reply to: *FEXP* posted by Mike Will on January 19, 1999 at 21:32:29:

```
> > > : F> ( F: r -- d )
> > > FDEPTH IF FP0 @ DUP 2@ ROT 1 FLOATS + FP0 ! THEN ;
> > >
```

> > I think I see what you're after there -- this is a simpler way:

```
> > FVARIABLE temp
> > : F> ( F: r -- ) ( -- r. ) temp dup f! 2@ ;
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> Right, I was just trying to avoid the need for a variable, but yours is much

> cleaner. In FEXP, it's necessary to directly write an exponent part to a float,

> which necessitates all this stuff. People who want to do this can make their

```

> choice, I guess.

> So, here is my version of FEXP. It's good for about 7 digits of accuracy
over
a
> range of exp( 0 to +/-40 ).

> Now, I'm pretty good at math (I've noticed several other number theorists
on
> this discussion list), but not so hot at Forth (Just ask Neal). So, before
you
> go building any parts for the space station with this function, please test
it
> thoroughly.

>

> \ FEXP exponential function
> \ public domain

> \ some preliminary words for direct manipulation of floats
> FVARIABLE temp
> : F> ( F: r -- ) ( -- r. ) temp dup F! 2@ ;
> : >F ( r. -- ) ( F: -- r ) temp 2! temp F@ ;

> : F1/X ( F: r -- F: r ) 1E0 FSWAP F/ ;

> \ a primitive for normalized FEXP (don't use directly)
> : (FEXP)  FDUP
>           -0.1413161E-3 F*
>           1.329882E-3 F+ FOVER F*
>           -0.830136E-2 F+ FOVER F*
>           0.41657347E-1 F+ FOVER F*
>           -0.1666653E0 F+ FOVER F*
>           0.5E0 F+ FOVER F*
>           -1E0 F+ F*
>           1E0 F+ F1/X ;

> \ the final word, which handles exponent scaling
> : FEXP ( F: r -- F: r )
>   FDUP F0< ABS FABS
>   FDUP 40E0 FSWAP F< ABORT" EXP overflow"
>   FDUP 1.44269504E0 F*
>   FDUP F>D DROP >R
>   FLOOR 0.6931472E0 F* F- (FEXP)
>   R> 65 + 32768 >F F* ( Here's the 65 I was talking about, Neal)
>   IF F1/X THEN ;

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>   1E0 FEXP FS. 0.27182817E1
>   1E1 FEXP FS. 0.22026464E5
>  -3.456E0 FEXP FS. 0.31555700E-1

```

>

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> engineering group (name escapes me at the moment). It was originally written
> for a 48-bit float package on a 32-bit Forth. Maybe we can hammer this into a
> bullet-proof piece of code that can be used in the 'good stuff' like neural
> networks and complexity.

Thanks Mike, that's good stuff. I have an FEXP I haven't yet built into the kernel; this gives me a reference implementation for sanity-checking.

Neal

Re: FEXP, Mathlib ?

Posted by [Mark Beckman](#) on January 19, 1999 at 21:59:22:

In Reply to: *FEXP* posted by Mike Will on January 19, 1999 at 21:32:29:

```
> > > : F> ( F: r -- d )  
> > > FDEPTH IF FP0 @ DUP 2@ ROT 1 FLOATS + FP0 ! THEN ;  
> > >
```

> > I think I see what you're after there -- this is a simpler way:

```
> > FVARIABLE temp  
> > : F> ( F: r -- ) ( -- r. ) temp dup f! 2@ ;
```

> Right, I was just trying to avoid the need for a variable, but yours is much
> cleaner. In FEXP, it's necessary to directly write an exponent part to a float,
> which necessitates all this stuff. People who want to do this can make their
> choice, I guess.

> So, here is my version of FEXP. It's good for about 7 digits of accuracy over

a
> range of `exp(0 to +/-40)`.

> Now, I'm pretty good at math (I've noticed several other number theorists on
> this discussion list), but not so hot at Forth (Just ask Neal). So, before you
> go building any parts for the space station with this function, please test

```

it
> thoroughly.
>
> \ FEXP exponential function
> \ public domain
> \ some preliminary words for direct manipulation of floats
> FVARIABLE temp
> : F> ( F: r -- ) ( -- r. ) temp dup F! 2@ ;
> : >F ( r. -- ) ( F: -- r ) temp 2! temp F@ ;
> : F1/X ( F: r -- F: r ) 1E0 FSWAP F/ ;
> \ a primitive for normalized FEXP (don't use directly)
> : (FEXP)  FDUP
>         -0.1413161E-3 F*
>         1.329882E-3 F+ FOVER F*
>         -0.830136E-2 F+ FOVER F*
>         0.41657347E-1 F+ FOVER F*
>         -0.1666653E0 F+ FOVER F*
>         0.5E0 F+ FOVER F*
>         -1E0 F+ F*
>         1E0 F+ F1/X ;
> \ the final word, which handles exponent scaling
> : FEXP ( F: r -- F: r )
>   FDUP F0< ABS FABS
>   FDUP 40E0 FSWAP F< ABORT" EXP overflow"
>   FDUP 1.44269504E0 F*
>   FDUP F>D DROP >R
>   FLOOR 0.6931472E0 F* F- (FEXP)
>   R> 65 + 32768 >F F* ( Here's the 65 I was talking about, Neal)
>   IF F1/X THEN ;
> \ examples:
>   1E0 FEXP FS. 0.27182817E1
>   1E1 FEXP FS. 0.22026464E5
>  -3.456E0 FEXP FS. 0.31555700E-1
>
> I started with an algorithm from FIG France, who borrowed it from some
American
> engineering group (name escapes me at the moment). It was originally
written
> for a 48-bit float package on a 32-bit Forth. Maybe we can hammer this into
a
> bullet-proof piece of code that can be used in the 'good stuff' like neural
> networks and complexity.
> Mike

```

Re: FEXP, Mathlib ? (oops)

Posted by [Mark Beckman](#) on January 19, 1999 at 22:03:20:

In Reply to: *Re: FEXP, Mathlib ?* posted by Mark Beckman on January 19, 1999 at 21:59:22:

(oops I was a little too fast on the submit button)

The subject of Mathlib and Quartus has come up in the past but always been deferred. I have not pressing need for Mathlib myself, but it does sound like it would fit in here.

```
> > > > : F> ( F: r -- d )
> > > > FDEPTH IF FP0 @ DUP 2@ ROT 1 FLOATS + FP0 ! THEN ;
> > > >
```

> > > I think I see what you're after there -- this is a simpler way:

```
> > > FVARIABLE temp
> > > : F> ( F: r -- ) ( -- r. ) temp dup f! 2@ ;
```

> > Right, I was just trying to avoid the need for a variable, but yours is much

> > cleaner. In FEXP, it's necessary to directly write an exponent part to a float,

> > which necessitates all this stuff. People who want to do this can make their

> > choice, I guess.

> > So, here is my version of FEXP. It's good for about 7 digits of accuracy over

```
> > a
> > range of exp( 0 to +/-40 ).
```

> > Now, I'm pretty good at math (I've noticed several other number theorists on

> > this discussion list), but not so hot at Forth (Just ask Neal). So, before

> > you go building any parts for the space station with this function, please test

> > it

> > thoroughly.

> >

```

> > \ FEXP exponential function
> > \ public domain

> > \ some preliminary words for direct manipulation of floats
> > FVARIABLE temp
> > : F> ( F: r -- ) ( -- r. ) temp dup F! 2@ ;
> > : >F ( r. -- ) ( F: -- r ) temp 2! temp F@ ;

> > : F1/X ( F: r -- F: r ) 1E0 FSWAP F/ ;

> > \ a primitive for normalized FEXP (don't use directly)
> > : (FEXP)   FDUP
> >           -0.1413161E-3 F*
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> >           0.41657347E-1 F+ FOVER F*
> >           -0.1666653E0 F+ FOVER F*
> >           0.5E0 F+ FOVER F*
> >           -1E0 F+ F*
> >           1E0 F+ F1/X ;

> > \ the final word, which handles exponent scaling
> > : FEXP ( F: r -- F: r )
> >   FDUP F0< ABS FABS
> >   FDUP 40E0 FSWAP F< ABORT" EXP overflow"
> >   FDUP 1.44269504E0 F*
> >   FDUP F>D DROP >R
> >   FLOOR 0.6931472E0 F* F- (FEXP)
> >   R> 65 + 32768 >F F* ( Here's the 65 I was talking about, Neal)
> >   IF F1/X THEN ;

> > \ examples:

> >   1E0 FEXP FS. 0.27182817E1
> >   1E1 FEXP FS. 0.22026464E5
> >  -3.456E0 FEXP FS. 0.31555700E-1
> >

> > I started with an algorithm from FIG France, who borrowed it from some
> > American
> > engineering group (name escapes me at the moment). It was originally
written
> > for a 48-bit float package on a 32-bit Forth. Maybe we can hammer this
into
a
> > bullet-proof piece of code that can be used in the 'good stuff' like
neural
> > networks and complexity.
> > Mike

```

Re: FEXP, Mathlib ? (oops)

Posted by [Neal Bridges](#) on January 19, 1999 at 22:26:20:

In Reply to: *Re: FEXP, Mathlib ? (oops)* posted by Mark Beckman on January 19, 1999 at 22:03:20:

> The subject of Mathlib and Quartus has come up in the past but always been
> deferred. I have not pressing need for Mathlib myself, but it does sound
like
> it would fit in here.

I've put off integrating MathLib for two reasons:

- 1) the Quartus Forth internal floating-point format isn't the same as the one(s) used by the Palm OS, and
- 2) further to 1), the Palm ROM has floating point bugs going back to version 1 of the ROM; which is why Quartus Forth has its own internal floating-point format.

I'm big on compatibility across the entire line of PalmPilots, all the way back to the Pilot 1000.

There's no reason that MathLib can't be worked in, though; if I were tackling it now I'd start with a conversion word between Palm floats and Quartus Forth floats.

Neal

An exercise that turned out to be a benchmark

Posted by [Rick Francis](#) on January 19, 1999 at 00:01:01:

In one of his books Douglas Hofstadter presents an interesting little piece of number theory as part of an introduction to recursion in Lisp. The algorithm, applied to any positive integer, is this: if it's even you halve it, but if it's odd you triple it and add one. The conjecture is that, no matter what positive integer you start with, iterating this algorithm will lead to the cycle 4-2-1-4-2-1 etc. It has not been proven but no counterexample is known.

```
\ hotpotato 99.1.14 rwf
: hotpo dup 2 mod 0 = if 2 / else 3 * 1 + then ;
: tato (n -- trips)
0 swap
begin dup 1 >
while hotpo swap 1 + swap repeat
drop . ;
```

Hotpo is, of course, Half Or Triple Plus One. Tato can be thought of as That And That Only; it keeps count and halts the process when (if?) the value reaches one. While I am sure that this is relatively churlish beginner's Forth,

the count of iterations returned by Tato can pose some surprises. Try it for some relatively small integers; 27 tato will surprise you in two ways.

The second way is how fast this result is returned: Quartus is Quick.

I put this together for my own amusement last Thursday night in a hotel room in Scottsdale, Arizona; much more satisfactory than pay-per-view would have been.

Rick

910107 yields 475 iterations :)

Posted by [Tony Sanders](#) on January 21, 1999 at 18:15:22:

In Reply to: *An exercise that turned out to be a benchmark* posted by Rick Francis on January 19, 1999 at 00:01:01:

ok, so I was using a 32-bit forth on a super-fast machine :)

```
: hotpo dup 2 mod 0= if 2 / else 3 * 1 + then ;
: tato 0 swap begin dup 1 > while hotpo swap 1+ swap repeat drop ;

0 value maxi
: findmax
  1 begin
    1+ dup tato
    dup maxi > if dup to maxi ." GOT: " . dup . cr else drop then
  again
;
```

But if you wanted to do some more benchmarking you could find all the tato's from 2 to 10000 and tune the code that way (e.g., is a bit test faster than doing the mod?).

it's upto 164767201 with 697 iterations

Posted by [Tony Sanders](#) on January 22, 1999 at 11:37:47:

In Reply to: *910107 yields 475 iterations :)* posted by Tony Sanders on January 21, 1999 at 18:15:22:

Maybe it's time to write a parallel/distributed version.

Re: it's upto 164767201 with 697 iterations

Posted by [Neal Bridges](#) on January 24, 1999 at 22:44:37:

In Reply to: *it's upto 164767201 with 697 iterations* posted by Tony Sanders on January 22, 1999 at 11:37:47:

> Maybe it's time to write a parallel/distributed version.

No matter how parallel the system, it may well never complete. And whenever you decide to stop checking, you'll always wonder if the next number was the one that would prove the conjecture false.

On a 32-bit Forth, you'll top out at 4.2 billion or so, and have to go to double

-cell numbers; those'll last you out for awhile :)

Neal

one point on "Forth-style"

Posted by [Tony Sanders](#) on January 21, 1999 at 17:46:52:

In Reply to: *An exercise that turned out to be a benchmark* posted by Rick Francis on January 19, 1999 at 00:01:01:

Seperate computation from I/O -- when you expand on this program (e.g. to find the largest number of iterations in a range) you'll find that printing the result inside tato prevents it. I know this was just a quicky program -- not faulting you for anything, just pointing out this general principle.

And there are places in Forth itself where Forth doesn't do this and they are always causing people problems :)

Re: one point on "Forth-style"

Posted by [Rick Francis](#) on January 22, 1999 at 19:29:06:

In Reply to: *one point on "Forth-style"* posted by Tony Sanders on January 21, 1999 at 17:46:52:

> Separate computation from I/O -- when you expand on this program
> (e.g. to find the largest number of iterations in a range) you'll
> find that printing the result inside tato prevents it. I know this
> was just a quicky program -- not faulting you for anything, just
> pointing out this general principle.

> And there are places in Forth itself where Forth doesn't do this
> and they are always causing people problems :)

Your point is very well taken, and I thank you for it. "Just a quicky program is a semantic null; too many of my quickies have ended up as components in something subsequent and larger. Should have left that sucker on the stack...

Rick

Re: An exercise that turned out to be a benchmark

Posted by [Derek Bell](#) on January 19, 1999 at 17:59:14:

In Reply to: *An exercise that turned out to be a benchmark* posted by Rick Francis on January 19, 1999 at 00:01:01:

> In one of his books Douglas Hofstadter presents an interesting little piece of
> of

> number theory as part of an introduction to recursion in Lisp. The
> algorithm,

> applied to any positive integer, is this: if it's even you halve it, but if
> it's odd you triple it and add one. The conjecture is that, no matter what
> positive integer you start with, iterating this algorithm will lead to the
> cycle 4-2-1-4-2-1 etc. It has not been proven but no counterexample is
> known.

The Collatz Conjecture, AKA the $3n+1$ problem.

Neat piece of coding!

An example of a similar but solved problem is the one where $3n+1$ in the above rules is replaced by $3n-1$. There's at least one cycle (5-14-7-20-10-5) that doesn't lead to the 4-2-1 cycle.

Re: An exercise that turned out to be a benchmark

Posted by [Neal Bridges](#) on January 19, 1999 at 00:19:43:

In Reply to: *An exercise that turned out to be a benchmark* posted by Rick Francis on January 19, 1999 at 00:01:01:

> In one of his books Douglas Hofstadter presents an interesting little piece of
> number theory as part of an introduction to recursion in Lisp. The algorithm,
> applied to any positive integer, is this: if it's even you halve it, but if
> it's odd you triple it and add one. The conjecture is that, no matter what
> positive integer you start with, iterating this algorithm will lead to the
> cycle 4-2-1-4-2-1 etc. It has not been proven but no counterexample is known.

That's quite neat, Rick. I just spent 15 minutes playing with it.

[code snipped]

> The second way is how fast this result is returned: Quartus is Quick.

It gets faster yet if you use $0=$ instead of $0 =$ and $1+$ instead of $1 +$. Minor optimizations, but good to know about.

> I put this together for my own amusement last Thursday night in a hotel room
in

> Scottsdale, Arizona; much more satisfactory than pay-per-view would have been.

Agreed -- much better than "Earth vs. the Flying Saucers", also.

Neal

Re: An exercise that turned out to be a benchmark

Posted by [Rick Francis](#) on January 19, 1999 at 23:46:26:

In Reply to: *Re: An exercise that turned out to be a benchmark* posted by Neal Bridges on January 19, 1999 at 00:19:43:

> That's quite neat, Rick. I just spent 15 minutes playing with it.

Thanks, Neal. Another correspondent has obliged us with the proper name of the conjecture -- which Hofstadter didn't mention and I never knew -- so if there is anything interesting in the literature, I can now turn it up. Fifteen minutes? If I keep distracting you, some of my fellow customers are probably going to run me out of here altogether.

> [code snipped]

> > The second way is how fast this result is returned: Quartus is Quick.

> It gets faster yet if you use 0= instead of 0 = and 1+ instead of 1 +.

Minor

> optimizations, but good to know about.

Thanks again, and glad of the pointers. Useful info -- although hardly necessary in this case; I couldn't perceive a difference in run time between 1 tato, which returns after zero iterations, and 27 tato, which returns after 111 iterations.

Next project: a clock application which, after prompting you for your longitude and your time zone and taking account of the system date, shows continually updated local sidereal time (a handy thing to have if you've a telescope with a right ascension setting circle). Algorithm is from Peter Duffett-Smith's book on mathematical astronomy for pocket calculators. (This book has some wonderful calendar algorithms, including one like yours for Easter and derived feasts.)

If all works out well, I'll zip the whole dingus up and send it to you.

Rick

Re: An exercise that turned out to be a benchmark

Posted by [Neal Bridges](#) on January 20, 1999 at 02:05:34:

In Reply to: *Re: An exercise that turned out to be a benchmark* posted by Rick Francis on January 19, 1999 at 23:46:26:

> Fifteen
> minutes? If I keep distracting you, some of my fellow customers are probably
> going to run me out of here altogether.

Not to worry. Seeing Quartus Forth being used to write such things is very motivating.

> Next project: a clock application which, after prompting you for your
> longitude and your time zone and taking account of the system date, shows
> continually updated local sidereal time (a handy thing to have if you've a
> telescope with a right ascension setting circle). Algorithm is from Peter
> Duffett-Smith's book on mathematical astronomy for pocket calculators.
(This
> book has some wonderful calendar algorithms, including one like yours for
> Easter and derived feasts.)

I'll look for the book!

> If all works out well, I'll zip the whole dingus up and send it to you.

I see there's an existing Sidereal Time app -- not to suggest it isn't a worthwhile project; I'd certainly like to see how the calculation is done. Consider it a reference implementation :)

Neal

- [Sidereal Time shareware app](#)

Modified Julian Date (was An exercise...)

Posted by Rick Francis on January 22, 1999 at 19:24:26:

In Reply to: *Re: An exercise that turned out to be a benchmark* posted by Neal Bridges on January 20, 1999 at 02:05:34:

Herewith the first fruits of the local sidereal time effort: a Forth implementation of the astronomical Julian date algorithm, again from the Duffett-Smith book. (I have the 1981 second edition and it's worn to tatters; I see on amazon.com that a third edition is out -- may pick it up.)

Challenges seem to come along in roughly the right order here: getting this right was a good way of getting comfortable with handling doubles, and learning how the scaler, $M^*/$, can be used to make integer math do floating-point jobs. This implementation differs from Duffett-Smith's in two particulars: First, it returns the modified Julian date, which is astronomical Julian - 2,400,000.5. (Yes, AJ days start at noon, presumably because astronomers work nights.) Second, it doesn't switch from Gregorian to Julian calendar for dates before 1582 October 15. Thus dates before that point (or later ones identified as "Old Style") will be wrong, and dates before 1858 November 17 will be correct but negative.

Nonetheless, the thing has its uses: dates in this form make date-difference calculations and day-of-the-week determinations a snap.

I'm not happy with the use of PICK, which Neal says is conducive to stack clutter -- looks like he's right -- but if the depth goes much beyond six I'm beyond MY depth. So suggestions for improvement are most welcome.

--Rick

```
\ mjd 99.01.22 rwf
\ Modified Julian date
```

```
needs dblmath
```

```
: ymd>mjd ( y m d -- mjd. )
```

```
swap dup 3 < negate tuck
```

```
12 * +
```

```
rot 2swap -
```

```
dup 100 /
```

```
dup 4 / - negate 2 +
```

```
swap s>d
```

```
1461 4 m*/
```

```
4 pick 1+
```

```
s>d 306001. 2swap d>s
```

```
10000 m*/
```

```
5 pick s>d
```

```
6 pick s>d
```

```
d+ d+ d+
```

```
679006. d-
```

```
2swap 2drop rot drop
```

```
;
```

```
> > ...Algorithm is from Peter
```

```
> > Duffett-Smith's book on mathematical astronomy for pocket calculators.
```

```
(This
```

```
> > book has some wonderful calendar algorithms, including one like yours for
```

```
> > Easter and derived feasts.)
```

> I'll look for the book!

> > If all works out well, I'll zip the whole dingus up and send it to you.

> I see there's an existing Sidereal Time app -- not to suggest it isn't a
> worthwhile project; I'd certainly like to see how the calculation is done.
> Consider it a reference implementation :)

> Neal

Re: Modified Julian Date (was An exercise...)

Posted by [Neal Bridges](#) on January 22, 1999 at 23:28:27:

In Reply to: *Modified Julian Date (was An exercise...)* posted by Rick Francis
on January 22, 1999 at 19:24:26:

> This implementation differs from Duffett-Smith's in two particulars: First,
it
> returns the modified Julian date, which is astronomical Julian -
2,400,000.5.
> (Yes, AJ days start at noon, presumably because astronomers work nights.)
> Second, it doesn't switch from Gregorian to Julian calendar for dates
before
> 1582 October 15. Thus dates before that point (or later ones identified as
"Old
> Style") will be wrong, and dates before 1858 November 17 will be correct
but
> negative.

> Nonetheless, the thing has its uses: dates in this form make
date-difference
> calculations and day-of-the-week determinations a snap.

> I'm not happy with the use of PICK, which Neal says is conducive to stack
> clutter -- looks like he's right -- but if the depth goes much beyond six
I'm
> beyond MY depth. So suggestions for improvement are most welcome.

Hi Rick. I'm pleased to see you working so diligently at this!

First I must point you at the Quartus Forth File Library; this functionality
is
already in *calendar.txt*, and can give you some code to compare against
for technique, etc.

I also recommend you annotate your code with stack diagrams; this will help
you

keep track of what you're doing with such a complex calculation, and will help

you see where you can simplify.

Also, comments within the code might help clarify the function of different sections. I find that when a section of code requires a comment, it's a very likely candidate to be factored into its own word.

```
> \ mjd 99.01.22 rwf
> \ Modified Julian date

> needs dblmath

> : ymd>mjd ( y m d -- mjd. )

> swap
> dup 3 < negate tuck
```

This code checks that the month is less than March, but it isn't clear that that's what it's doing. Two things here: first, I'd define a constant named March and use it instead of 3; second, although the flag returned from < is either -1 or 0, it's unwise to treat a boolean flag as an integer value, as you

do with NEGATE. Rather, you should (in this case) use 1 AND to turn the flag into a 0 or 1 value; by so doing you're treating the flag as a bit-pattern (no-bits-set or all-bits-set), which is fine.

```
> 12 * +
```

This is evidently a correction for the month value, but I'm not sure how it works.

```
> rot 2swap -
```

This is evidently a correction for the year depending on whether the month was

January or February; again I'm not sure about it.

```
> dup 100 /
> dup 4 /
> - negate 2 +
```

This is a leap-year check; I'd factor this into its own word (as I've done in *calendar.txt*). Again, see above regarding the use of NEGATE on a boolean. You're dividing by 100 to exclude centuries, and then re-including every 4th century, which so far is correct, but I'm not sure how the NEGATE 2 +

comes into it.

```
> swap s>d
```

Here's where I begin to lose track of the stack myself. That's a warning sign that factoring is required. Factoring serves two purposes; the first, to clarify the code; the second, it identifies potentially reusable code snippets.

> 1461 4 m*/

And this would be the every-fourth-year leap-year calculation, I presume.

> 4 pick 1+

The evil PICK. This is a red flag that you need to factor; you have a lot of interim results on the stack you haven't consumed. Here I lose track completely; I'm not sure what value you're bringing to the top of the stack.

Have a look at the calculations and factoring *calendar.txt*, particularly *dmy>date*; let me know what you think.

Neal

Re: Modified Julian Date (was An exercise...)

Posted by [Rick Francis](#) on January 23, 1999 at 00:42:53:

In Reply to: *Re: Modified Julian Date (was An exercise...)* posted by Neal Bridges on January 22, 1999 at 23:28:27:

> Have a look at the calculations and factoring *calendar.txt*,
> particularly *dmy>date*; let me know what you think.

> Neal

Many thanks for putting so much effort into reviewing this admittedly gnarly piece of Forth. I hardly expected to get the benefit of a critique at this level, and it's good stuff and much appreciated.

Your suggestion to look at *calendar*, and particularly *dmy>date*, was certainly on target; in fact it occurred to me today that I had seen it -- at least there was some word that turned the ordinary date components into some scalar representation of a date or other. So I had another look -- boy, is my face red! Thus:

```
: dmy>mjd  
dmy>date 678576. d+ ;
```

-- but the point is that one is sometimes not equipped to recognize a wheel without first having reinvented it...

Anyway, here's the original I worked from -- *m*, *d*, *y* given, and temporary variables identified by capital letters. The intended platform is the "cheapie" pocket scientific calculator.

If $m < 3$, add 12 to *m* and subtract 1 from *y*.

$A = y/100$, truncate to integer.

$B = 2 - A + A/4$, truncate to integer.

```
C = 365.25 * y, truncate to integer.  
D = 30.6001 * (m + 1), truncate to integer.  
Julian date = B + C + D + d + 1720994.5  
Modified Julian date = B + C + D + d - 679006
```

Thanks again,
Rick

Quartus Forth version 1.0.7 now available

Posted by [Neal Bridges](#) on January 18, 1999 at 21:33:57:

The new version of Quartus Forth, version 1.0.7, is now available in the File Area.

New in this update:

- fixed a bug affecting CREATE words
- added infrastructure support for the upcoming disassembler/decompiler
- added a new module, *serial*, that allows easy serial-port access.

Enjoy!

Neal

- [File Area](#)

Now available: a module for serial-port access

Posted by [Neal Bridges](#) on January 18, 1999 at 21:20:11:

serial.txt is now available in the Quartus Forth File Area. It provides words for sending and receiving data through the Palm's built-in serial port.

It's based on Wade Johnson's work with PilotFORTH. Documentation to follow. Enjoy!

Neal

- [File Area](#)

serial-port access??

Posted by [Frank Cappelle](#) on February 09, 1999 at 10:19:50:

In Reply to: *Now available: a module for serial-port access* posted by Neal Bridges on January 18, 1999 at 21:20:11:

I tried to load serial.txt and had a few problems. 0array, 4dup, 6dup were all unrecognized words. Is there another "need" file??

Quartus Forth-specific words docs in various formats

Posted by [Neal Bridges](#) on January 18, 1999 at 20:58:26:

In the File Area: *qdocs.zip*:

1) specific.txt

Is a TealInfo folio layout file.

2) qffolio.pdb

Which is a database for TealInfo. This is a neat interactive means of describing the QF specific words online. If you don't have TealInfo, you can get a demo at www.tealpoint.com

3) dspecific.prc

Which is a standard DOC file which describes the Quartus Forth specific words.

4) tdspecific.prc

Which is a TealDoc 'DOC' file which contains a neater presentation of #3 for the TealDoc reader (you can get a demo at www.tealpoint.com).

Neal

Data storage and presentation.

Posted by [Daryl Lee](#) on January 18, 1999 at 08:38:37:

I need a bit of help in finding what subset of the 828 OS calls and other programming resources I have to make progress on an app I'm working on.

I need to store data, to be retained and modified. The data COULD be stored as

ASCII text, but would be more compact in binary. The data is 320 bytes in length, and, eventually, I'd like to retain multiple "records". It appears that

I could do that in a resource DB, but creating, reading, writing, are not obvious to me.

The second thing I need to do is display that data on the screen. I could (I guess) write the screen directly, using AT and the NUMERALIGN words I gave Neal last week. But I would rather write them into a button or field that I could then select. And I haven't figured out how to write to a field on the screen.

The application is a golf handicap calculator. In operation, up to 20 scores will be displayed. The user will be able to add a new score or edit or delete an existing one. The edit/delete options are why I need to be able to select a

score, hence the anticipated need for a control of some sort.

Any help would be appreciated.

Daryl

Re: Data storage and presentation.

Posted by [Neal Bridges](#) on January 18, 1999 at 16:44:49:

In Reply to: *Data storage and presentation.* posted by Daryl Lee on January 18, 1999 at 08:38:37:

> I need a bit of help in finding what subset of the 828 OS calls and other
> programming resources I have to make progress on an app I'm working on.

> I need to store data, to be retained and modified. The data COULD be stored
as

> ASCII text, but would be more compact in binary. The data is 320 bytes in
> length, and, eventually, I'd like to retain multiple "records". It appears
that

> I could do that in a resource DB, but creating, reading, writing, are not
> obvious to me.

For storing data, I recommend use a regular database (rather than a resource database). Start with DataMgr (OpenDB, CloseDB) and also look into DmNewRecord and DmWrite (and of course the handle locking/unlocking systeps).

> The second thing I need to do is display that data on the screen. I could (I guess) write the screen directly, using AT and the NUMBERALIGN words I gave Neal last week. But I would rather write them into a button or field that I could then select. And I haven't figured out how to write to a field on the screen.

Field.txt has words for setting the text of a field; setting the label of a button is done with SetLabel from *Forms.txt*.

> The application is a golf handicap calculator. In operation, up to 20 scores will be displayed. The user will be able to add a new score or edit or delete an existing one. The edit/delete options are why I need to be able to select a score, hence the anticipated need for a control of some sort.

Let me know how it goes!

Neal

Re: Data storage and presentation.

Posted by [Daryl Lee](#) on January 18, 1999 at 16:54:02:

In Reply to: *Re: Data storage and presentation.* posted by Neal Bridges on January 18, 1999 at 16:44:49:

> Let me know how it goes!

That'll be easy! You'll probably be coaching me all the way! Thanks for the tips; I'll be running a few little experiments to see how this works.

Daryl

My first program :-)

Posted by [Carl Jacobsen](#) on January 17, 1999 at 23:11:56:

Well, here 'tis, my first real Forth program, translated from C this afternoon. Not much to look at, and no Pilot-specific features (it runs in the Quartus console -- I figured, write the first one to acclimatize myself to Forth, and the next one to play with the Pilot APIs).

The indenting is a holdover from years of C and Perl programming, and I know the algorithm could be tweaked up somewhat (but then, I'm not writing this out of a desperate need to compute prime numbers :-), but I'd be quite interested to hear any critique about how to make the program, er, more Forth-like.

I did a little timing test, and after compilation, the Pocket C version took 2 minutes and 56 seconds to run, while the Quartus version runs in about 1.15 seconds -- about 150 times faster!

And PopUp Notes works great for editing source code from inside Quartus -- though I'd still like to see a menu command/dialog box for {including|docincluding} "most recently included" files.

When I first ran across Quartus, I thought "Neat, but how about a more modern language?" -- well, the past week or so of reading, and now starting to write some code, has given me a much healthier respect for Forth, and it now seems uniquely suited to the tiny world that is the Palm Pilot...

Thanks for building us such a terrific tool, Neal!
-- Carl Jacobsen

[Hope this formats reasonably on the Forum:]

```
\ primes - print primes up to 500.  
\   by Carl Jacobsen.  Versions:  
\   Fortran: '80, Pascal: '81,  
\   C: '83, Sh: 3/17/86, Perl:  
\   8/9/93, PocketC: 4/20/98,  
\   Forth: 1/16/99
```

needs core-ext

```
500 CONSTANT upper  
CREATE ptable  
  upper 2 / CELLS ALLOT  
VARIABLE plast  
  \ last used cell of ptable  
  
\ empty out ptable array  
: noprimes ( -- ) -1 plast ! ;
```

```
\ append n to ptable array
: addprime ( n -- )
  plast @ 1+ DUP plast !
  CELLS ptable + ! ;

\ return TRUE if n is prime
: isprime ( n -- flag )
  plast @ 1+ 0 DO
    DUP ptable I CELLS + @
    MOD 0= IF
      DROP FALSE
      UNLOOP EXIT
    THEN
  LOOP
  DROP TRUE ;

\ print primes from 2 to upper
: primes ( -- )
  noprimes
  2 DUP addprime 1 .R
  upper 3 DO
    I isprime IF
      [CHAR] , EMIT SPACE
      I DUP addprime 1 .R
    THEN
  2 +LOOP ;

primes
```

Hmm...

Posted by [Carl Jacobsen](#) on January 18, 1999 at 02:01:48:

In Reply to: *My first program :-)* posted by Carl Jacobsen on January 17, 1999 at 23:11:56:

> Well, here 'tis, my first real Forth program, translated from
> C this afternoon. ...

Well, just for fun, while following along with the "QuickStart" documentation in the manual, I decided to try generating a standalone executable for the above listed primes program. I used a "make-primes" memo like this:

```
\ make-primes
needs primes
```

```
: go
  PAGE
  ." Prime numbers below 500: " CR
    primes CR
  BEGIN KEY DROP AGAIN ;

' go 12345. MakePRC Primes
```

Instead of the expected "..... ok", I got a dialog box titled "Exception Report", containing a circle with an X in it, the message "Exception 537 raised.", and a button with the unusual label of "hmm". Clicking the button gets me back to the interpreter prompt, with an error message saying "Exception in file: make-primes". Am I doing something obviously wrong? The error message is leaving me a little in the dark about what's going on...

I thought perhaps my registration info wasn't entered properly in startup.quartus, but I tried building the "Hello" executable from the manual, and that works just fine.

Additionally, if I "include" the memo listed above, but with the last ("MakePRC") line commented out, and then type "go", the word runs just fine...

Any ideas?
-- Carl Jacobsen

Re: Hmm...

Posted by [Neal Bridges](#) on January 18, 1999 at 02:30:30:

In Reply to: *Hmm...* posted by Carl Jacobsen on January 18, 1999 at 02:01:48:

> > Well, here 'tis, my first real Forth program, translated from
> > C this afternoon. ...

> Well, just for fun, while following along with the "QuickStart"
> documentation in the manual, I decided to try generating a
> standalone executable for the above listed primes program.
> I used a "make-primes" memo like this:

>

> \ make-primes
> needs primes

```
> : go
> PAGE
> ." Prime numbers below 500: " CR
> primes CR
> BEGIN KEY DROP AGAIN ;
> ' go 12345. MakePRC Primes
>
```

```
> Instead of the expected "..... ok", I got a dialog
> box titled "Exception Report", containing a circle with an
> X in it, the message "Exception 537 raised.", and a button
> with the unusual label of "hmm". Clicking the button gets
> me back to the interpreter prompt, with an error message
> saying "Exception in file: make-primes". Am I doing
> something obviously wrong? The error message is leaving
> me a little in the dark about what's going on...
```

You can look 537 up in the "Palm OS Errors" doc -- it's "dmErrAlreadyExists".
It's the '12345.' -- every created program needs a different creator ID, and the
"Hello World" program is using 12345.

Try

```
needs ids
' go (ID) Prim MakePRC Primes
```

Now, bear in mind this is only for your own testing -- if you want a real
registered creator ID you need to drop by 3Com's page and register a unique
one;
it's free and takes only a moment to do so.

Re: Hmm...

Posted by [Carl Jacobsen](#) on January 18, 1999 at 03:26:04:

In Reply to: *Re: Hmm...* posted by Neal Bridges on January 18, 1999 at
02:30:30:

```
> > > Well, here 'tis, my first real Forth program, translated from
> > > C this afternoon. ...
> >
> > Instead of the expected "..... ok", I got a dialog
> > box titled "Exception Report", containing a circle with an
> > X in it, the message "Exception 537 raised.", ...
>
```

> You can look 537 up in the "Palm OS Errors" doc -- it's "dmErrAlreadyExists".

Ah, okay... Thanks.

> It's the '12345.' -- every created program needs a different creator ID, > and the "Hello World" program is using 12345.

Hmm, close but not quite -- but your help pointed me in the right direction. I'd tried the "make-primes" thing before "Hello", so 12345. wasn't in use yet. But I *did* have a Pocket C "compiled" file (er, PRC?) sitting around named "Primes", from my timing tests. Telling Pocket C to delete the compiled version of the program made (namespace) room for the Quartus version to be born :-)

Now this is *cool*! Even before digesting the Pilot API's, I can build standalone hot-syncable console-oriented apps with just a couple dozen lines of code :-)

(I know this might not sound like much to some, but I've a looong history with command-line systems (Unix), so this is a quite comfortable way for me to get quick answers to various ad-hoc programming questions.)

> Now, bear in mind this is only for your own testing -- if you want a real > registered creator ID you need to drop by 3Com's page and register a unique > one; it's free and takes only a moment to do so.

Understood. This is just for screwing-around purposes, for testing things]that won't be shared. I expect to register anything that I come up with that makes it off of my Palm III.

Thanks for the quick response,
-- Carl

Re: My first program :-)

Posted by [Neal Bridges](#) on January 18, 1999 at 01:09:10:

In Reply to: *My first program :-)* posted by Carl Jacobsen on January 17, 1999 at 23:11:56:

> The indenting is a holdover from years of C and Perl programming, > and I know the algorithm could be tweaked up somewhat (but then, > I'm not writing this out of a desperate need to compute prime > numbers :-), but I'd be quite interested to hear any critique > about how to make the program, er, more Forth-like.

First thought I had is that I'd make primes take a parameter from the stack; so you could request 5, 50, 500 primes, as you wish.

> I did a little timing test, and after compilation, the Pocket C

> version took 2 minutes and 56 seconds to run, while the Quartus
> version runs in about 1.15 seconds -- about 150 times faster!

And it'll get faster as I continue to optimize.

> And PopUp Notes works great for editing source code from inside
> Quartus -- though I'd still like to see a menu command/dialog
> box for {including|docincluding} "most recently included" files.

That's on my list!

> When I first ran across Quartus, I thought "Neat, but how about
> a more modern language?" -- well, the past week or so of reading,
> and now starting to write some code, has given me a much healthier
> respect for Forth, and it now seems uniquely suited to the tiny
> world that is the Palm Pilot...

> Thanks for building us such a terrific tool, Neal!
> -- Carl Jacobsen

You're welcome, Carl. I'm glad it's going so well!

Neal

Re: My first program :-)

Posted by [Mike Dunker](#) on January 18, 1999 at 00:07:40:

In Reply to: *My first program :-)* posted by Carl Jacobsen on January 17, 1999
at 23:11:56:

> I did a little timing test, and after compilation, the Pocket C
> version took 2 minutes and 56 seconds to run, while the Quartus
> version runs in about 1.15 seconds -- about 150 times faster!

I know. I was a previous user of PocketC, and I was frustrated with the
performance in my graphics programs.

C is second nature to me, Forth is a foreign language. Still, I think I'm
going to struggle through learning Forth. The benefits are apparent very
early
on.

PAGE

Posted by [Mike Dunker](#) on January 17, 1999 at 17:13:18:

Hi,

Is there a reason that PAGE does not seem to clear the bottom several pixel lines of the page?

Mike

Re: PAGE

Posted by [Neal Bridges](#) on January 17, 1999 at 18:13:25:

In Reply to: *PAGE* posted by Mike Dunker on January 17, 1999 at 17:13:18:

> Hi,

> Is there a reason that PAGE does not seem to clear the bottom several pixel
> lines of the page?

Yes; PAGE clears the scrollable area of the screen as defined by the rectangle at WINDOW-BOUNDS. If you want to clear the entire screen, Graffiti shift-state indicator and all, use WinEraseWindow.

If you switch to the alternate form via BlankFormID ShowForm, you'll find PAGE clears the entire screen.

Neal

Examples of simple applications developed with QForth

Posted by [Philippe de Rochembeau](#) on January 17, 1999 at 04:03:20:

Could someone please provide me with examples of simple applications developed with QForth (e.g., a GUI Hello World application with a frame and a button)? Year and Duco are a bit too complicated for me.

Many thanks.

Philippe de Rochambeau

Re: Examples of simple applications developed with QForth

Posted by [Neal Bridges](#) on January 17, 1999 at 12:29:25:

In Reply to: *Examples of simple applications developed with QForth* posted by Philippe de Rochambeau on January 17, 1999 at 04:03:20:

> Could someone please provide me with examples of simple applications developed

> with QForth (e.g., a GUI Hello World application with a frame and a button)?

> Year and Duco are a bit too complicated for me.

> Many thanks.

I have just such an example here (One form, one button) waiting to be documented

and posted. I'll post it very soon.

Neal

Re: Examples of simple applications developed with QForth

Posted by [Erwin Schomburg](#) on January 17, 1999 at 05:05:49:

In Reply to: *Examples of simple applications developed with QForth* posted by Philippe de Rochambeau on January 17, 1999 at 04:03:20:

> Could someone please provide me with examples of simple applications developed

> with QForth (e.g., a GUI Hello World application with a frame and a button)?

> Year and Duco are a bit too complicated for me.

> Many thanks.

> Philippe de Rochambeau

The sample attached to the INPUT module is a simple app in your line of question, and if its not already too sophisticated, look at my "Eisbär", its using only basic I/O and no resource linking and usage. Both in Neal's file

area.

/Erwin

Questions about Quartus

Posted by [Derek Bell](#) on January 16, 1999 at 17:14:37:

First of all, I'd like to congratulate Neal on his work with Quartus; but I'm a

bit puzzled:

Is Quartus 16-bit because of the DragonBall processor or other reasons?

(I'm not up to speed on the 68328 architecture, though I did 68K assembly a while ago.)

Re: Questions about Quartus

Posted by [Neal Bridges](#) on January 16, 1999 at 18:28:50:

In Reply to: *Questions about Quartus* posted by Derek Bell on January 16, 1999 at 17:14:37:

> First of all, I'd like to congratulate Neal on his work with Quartus; but I'm

a

> bit puzzled:

> Is Quartus 16-bit because of the DragonBall processor or other reasons?

> (I'm not up to speed on the 68328 architecture, though I did 68K assembly a
> while ago.)

Quartus is 16-bit because:

- a) The Palm OS system calls require 16-bit granularity for parameter passing;
- b) The resulting generated machine code is smaller.

(a) is the most important consideration. Had I chosen a 32-bit stack width, every Palm OS system call would have to have its parameters pre-massaged.

With

a 16-bit stack width, the interface to the Palm OS is extremely clean; the system runs much closer to the metal.

From a developer's perspective, this means the occasional use of the DOUBLE wordset, which is fully provided, along with some additional words (*dblmath*) I've found useful.

Neal

Re: Questions about Quartus

Posted by [Derek Bell](#) on January 18, 1999 at 19:26:27:

In Reply to: *Re: Questions about Quartus* posted by Neal Bridges on January 16, 1999 at 18:28:50:

> Quartus is 16-bit because:

> a) The Palm OS system calls require 16-bit granularity for parameter passing;

> b) The resulting generated machine code is smaller.

Thanks for your explanation, Neal, it's made things much clearer.

Now I remembered some questions I forgot to add to the original posting:

Is there a general introduction to the Palm OS from a programmers' point of view?

Does the notation $i*n$ in stack notation mean 0 or more numbers on the stack?

Are there any resources besides the draft standard on the draft ANSI Forth? (I dabbled with Forth in the early-mid 80s and things have changed a bit; I have some texts, but they are 80s vintage.)

Re: Questions about Quartus

Posted by [Neal Bridges](#) on January 18, 1999 at 20:29:23:

In Reply to: *Re: Questions about Quartus* posted by Derek Bell on January 18, 1999 at 19:26:27:

> Now I remembered some questions I forgot to add to the original posting:

> Is there a general introduction to the Palm OS from a programmers' point of view?

3Com has tutorial documentation in .PDF format; it's C-oriented but might help.

Also, the three SDK books have good overview material as relates to the various PalmOS system calls.

> Does the notation $i*n$ in stack notation mean 0 or more numbers on the

stack?

Yes, `i*n` would mean 0 or more signed cells.

> Are there any resources besides the draft standard on the draft ANSI Forth?
> (I dabbled with Forth in the early-mid 80s and things have changed a bit; I
have
> some texts, but they are 80s vintage.)

If you download the 30-day trial of SwiftForth, a Win32-based Forth from
www.forth.com, it comes with "The Forth Programmers' Handbook" in Adobe
Acrobat
(.pdf) format. It's worth a look.

Neal

p4ap?

Posted by [Dave Steele](#) on January 15, 1999 at 17:07:51:

I'm trying to compile the Duco sample, and am having some trouble. Launcher
on
my Pilot barfed after loading `DucoRsrc.prc`, I assume because there were no
code
resources (`xcopilot` reported something like "bad chunk"). So I loaded
`Duco.prc`
instead. But now, the line:

```
(ID) p4ap (ID) Duco use-resources
```

is still failing to open the database.

I assume that 'p4ac' identifies a program prc file, and that it doesn't
matter
if I use `Duco.prc` or `DucoRsrc.prc`. I even made sure that I had not yet
Launched
Duco before attempting the open.

Any ideas what I am doing wrong here?

Re: p4ap?

Posted by [Neal Bridges](#) on January 15, 1999 at 17:16:40:

In Reply to: *p4ap?* posted by Dave Steele on January 15, 1999 at 17:07:51:

> I'm trying to compile the Duco sample, and am having some trouble. Launcher
on
> my Pilot barfed after loading DucoRsrc.prc, I assume because there were no
code
> resources (xcopilot reported something like "bad chunk"). So I loaded
Duco.prc
> instead. But now, the line:

Your Pilot shouldn't complain about installing DucoRsrc.PRC; let me know what
model, etc. you've got so I can try and replicate your problem. The presence
or
absence of code resources in a PRC doesn't affect the installation process.

> (ID) p4ap (ID) Duco use-resources
> is still failing to open the database.
> I assume that 'p4ac' identifies a program prc file, and that it doesn't
matter
> if I use Duco.prc or DucoRsrc.prc. I even made sure that I had not yet
Launched
> Duco before attempting the open.
> Any ideas what I am doing wrong here?

Your assumption is a reasonable one, but false -- 'p4ap' is just a creator ID
like any other. I suspect you're using an older version of the sources;
DucoRsrc.PRC has a creator ID of 'Duco' and a type of 'rsrc' in the current
sources shipped with Quartus Forth 1.0.6.

Duco.PRC is the finished app, and has a creator ID of 'Duco' and a type of
'appl'.

If you were to try to use the finished app, Duco.PRC, as the resource
database
for building another copy of Duco, MakePRC will try to create a new Duco.PRC
while the existing one is still in use, which won't work. You'd need to use
RsrcEdit to change the name and type of Duco.PRC before it'd work.

Write me and I'll work with you to figure out why DucoRSRC.PRC won't install
on
your Pilot.

Neal

Re: p4ap?

Posted by [Mike Will](#) on January 16, 1999 at 15:57:22:

In Reply to: *Re: p4ap?* posted by Neal Bridges on January 15, 1999 at 17:16:40:

I'm posting to this thread because I have an unrelated problem, but it also crops up in Duco. How do you gracefully exit an ekey loop such as in Duco? If you just switch apps, everything is ok (I assume either Quartus or Palm/OS cleans up for you before exiting). However, if you just exit the Begin...Again

loop, you wind up in the toilet with a fatal error something like:
"Form.c Line:1281, Object not found in form"

I've tried FrmCloseAllForms, which changes the fatal error to
"Fatal Error"

Obviously, there's more I must do before I can re-enter the Quartus interpreter.

Thanks.

Required field for interpreter (was Re: p4ap?)

Posted by [Neal Bridges](#) on January 16, 1999 at 16:55:09:

In Reply to: *Re: p4ap?* posted by Mike Will on January 16, 1999 at 15:57:22:

> I'm posting to this thread because I have an unrelated problem, but it also
> crops up in Duco. How do you gracefully exit an ekey loop such as in Duco?
If
> you just switch apps, everything is ok (I assume either Quartus or Palm/OS
> cleans up for you before exiting). However, if you just exit the
Begin...Again

Yes, cleanup is handled on BYE (starting another app).

> loop, you wind up in the toilet with a fatal error something like:
> "Form.c Line:1281, Object not found in form"

> I've tried FrmCloseAllForms, which changes the fatal error to
> "Fatal Error"

FrmCloseAllForms doesn't do anything useful. You can

a) switch back to a Quartus Forth form via MainForm or
BlankFormID ShowForm

b) Make sure the form you're experimenting with in your app has a field with

these attributes:

FIELD ID 1103 AT (0 80 160 11) LEFTALIGN SINGLELINE MAXCHARS 80 NONUSABLE

This is the field used by ACCEPT, and when it's not there and you drop into the interpreter, you get the 'Object not found in form' error.

Neal

Re: Required field for interpreter (was Re: p4ap?)

Posted by [Mike Will](#) on January 17, 1999 at 16:54:01:

In Reply to: *Required field for interpreter (was Re: p4ap?)* posted by Neal Bridges on January 16, 1999 at 16:55:09:

> BlankFormID ShowForm

> Neal

Ok. That works fine. Thanks, Neal.

Now, my next question: (not profound enough to warrant a new thread)

```
: TRY CREATE 0 , DOES> ;
```

```
TRY A
```

```
A
```

Why does this cause a fatal exception?

Shouldn't it put the address of A on the stack?

Thanks

Bug in DOES>

Posted by [Neal Bridges](#) on January 17, 1999 at 18:41:43:

In Reply to: *Re: Required field for interpreter (was Re: p4ap?)* posted by Mike Will on January 17, 1999 at 16:54:01:

> Now, my next question: (not profound enough to warrant a new thread)

>

```
> : TRY CREATE 0 , DOES> ;  
> TRY A  
> A  
>
```

```
> Why does this cause a fatal exception?  
> Shouldn't it put the address of A on the stack?
```

By Jove, you've found a bug. Under certain circumstances the EXIT after the DOES> is optimized away. I've fixed it; I'll post 1.0.7 tonight.

Thanks!

Neal

Re: Bug in DOES>

Posted by [Mike Will](#) on January 18, 1999 at 11:41:13:

In Reply to: *Bug in DOES>* posted by Neal Bridges on January 17, 1999 at 18:41:43:

```
> I've fixed it; I'll post 1.0.7 tonight.
```

```
> Thanks!
```

```
> Neal
```

Neal, I didn't get this fix. Did you send it to me?

Re: Bug in DOES>

Posted by [Neal Bridges](#) on January 18, 1999 at 13:52:27:

In Reply to: *Re: Bug in DOES>* posted by Mike Will on January 18, 1999 at 11:41:13:

```
> > I've fixed it; I'll post 1.0.7 tonight.
```

```
> > Thanks!
```

```
> > Neal
```

```
> Neal, I didn't get this fix. Did you send it to me?
```

```
Not yet; incurred a slight delay. It'll go out tonight.
```

Neal

Stand-alone question

Posted by [Mike Dunker](#) on January 15, 1999 at 13:11:28:

Hi Neal,

I was wondering what the speed difference would be for running an app within the interpreter, versus compiled as a standalone program. Is it true that when a file is "include"d in the interpreter, that the code is immediately compiled?

Therefore, is there any noticeable speed difference when running a compiled, stand-alone program? Or once the code is loaded, does it run at the same speed in either situation?

Just wondering if graphical programs I run on the evaluation version will accurately show the speed of the compiled version.

I apologize if this has already been asked, as I haven't yet had the time to completely read both of the sets of archived messages.

Thanks,
Mike

Re: Stand-alone question

Posted by [Erwin Schomburg](#) on January 15, 1999 at 13:20:11:

In Reply to: *Stand-alone question* posted by Mike Dunker on January 15, 1999 at 13:11:28:

> Hi Neal,

> I was wondering what the speed difference would be for running an app within

> the interpreter, versus compiled as a standalone program. Is it true that when

> a file is "include"d in the interpreter, that the code is immediately compiled?

> Therefore, is there any noticeable speed difference when running a compiled,

> stand-alone program? Or once the code is loaded, does it run at the same speed
> in either situation?

> Just wondering if graphical programs I run on the evaluation version will
> accurately show the speed of the compiled version.

> I apologize if this has already been asked, as I haven't yet had the time to
> completely read both of the sets of archived messages.

> Thanks,
> Mike

I assume there is no speed penalty to run an app from the interpreter, the compiler just removes the unneeded words and adapts the jump addresses (easy to say and all the {price} difference between the r and e versions), the executed code is the same, and it does not matter how far a relative jump is.

/erwin

Re: Stand-alone question

Posted by [Neal Bridges](#) on January 15, 1999 at 13:19:21:

In Reply to: *Stand-alone question* posted by Mike Dunker on January 15, 1999 at 13:11:28:

> I was wondering what the speed difference would be for running an app within
> the interpreter, versus compiled as a standalone program. Is it true that when
> a file is "include"d in the interpreter, that the code is immediately compiled?

That's right; compiled code is translated immediately into native machine code.

> Therefore, is there any noticeable speed difference when running a compiled,
> stand-alone program? Or once the code is loaded, does it run at the same speed
> in either situation?

> Just wondering if graphical programs I run on the evaluation version will
> accurately show the speed of the compiled version.

They will run at exactly the same speed. The generation of a stand-alone executable doesn't alter the compiled code, but rather separates the

application-specific code from the unused part of the system, resulting in a small-footprint executable.

Neal

I made a mistake and got a Fatal exception...

Posted by [Yaakov Shlafman](#) on January 15, 1999 at 12:18:55:

I don't know if there is anything wrong with this, but if I miss the word LITERAL in the following source code (which I did because I have been learning the Forth language for just 3 days so far), I get the FATAL EXCEPTION dialog and have to reset the Pilot (warm reset, no harm).

Here is the file:

```
-----  
\ example  
needs trig  
: 5side ( radius -- side )  
[ 360 5 / sin ] LITERAL 10000 */ 2 *;  
80 5side  
-----
```

Is the Quartus environment supposed to be invulnerable to such ignorant programmers' attacks?

Thanks for the nice system anyway!

-- Yaakov.

Re: I made a mistake and got a Fatal exception...

Posted by [Neal Bridges](#) on January 15, 1999 at 12:59:55:

In Reply to: *I made a mistake and got a Fatal exception...* posted by Yaakov Shlafman on January 15, 1999 at 12:18:55:

> I don't know if there is anything wrong with this, but if I miss the word
> LITERAL in the following source code (which I did because I have been
learning

```
> the Forth language for just 3 days so far), I get the FATAL EXCEPTION
dialog
and
> have to reset the Pilot (warm reset, no harm).

> Here is the file:

> -----
> \ example
> needs trig
> : 5side ( radius -- side )
> [ 360 5 / sin ] LITERAL 10000 */ 2 *;
> 80 5side
> -----

> Is the Quartus environment supposed to be invulnerable to such ignorant
> programmers' attacks?
```

By default there's not much safety checking in Quartus Forth; this keeps the kernel small and fast. During development, if you want checking, include the *safe.txt* module available in the File Area; it protects you against the error you describe, and many others.

> Thanks for the nice system anyway!

You're welcome!

Neal

- [File Area](#)

Update 1.0.6 now available

Posted by [Neal Bridges](#) on January 14, 1999 at 20:43:15:

Quartus Forth version 1.0.6 is now available.

Key changes in this update:

- now works with PopUp Note!
- added **enough?** for stack depth assertions
- added stack-depth safety checks to MakePRC, CopyRsrc, etc.

The registered version has been sent out to all registered users. If you haven't received it and should have, let me know.

Enjoy!

Neal

Fvalue, Fto

Posted by [Mike Will](#) on January 13, 1999 at 18:34:35:

A couple of FP words that I've found useful -- I cribbed them from core-ext (maybe Neal could check them for correctness)

```
: Fvalue ( r "name" -- ) create here 4 Allot F! does> F@ ;
: Fto ( r "name" -- ) ' >body state @
if postpone Fliteral postpone F!
else F! then ; immediate
```

Mike

Re: Fvalue, Fto

Posted by [Neal Bridges](#) on January 13, 1999 at 18:38:39:

In Reply to: *Fvalue, Fto* posted by Mike Will on January 13, 1999 at 18:34:35:

> A couple of FP words that I've found useful -- I cribbed them from core-ext
> (maybe Neal could check them for correctness)

```
> : Fvalue ( r "name" -- ) create here 4 Allot F! does> F@ ;
> : Fto ( r "name" -- ) ' >body state @
> if postpone Fliteral postpone F!
> else F! then ; immediate
```

> Mike

I'd use FLOATS in FVALUE to make the code portable:

```
: FVALUE ( "name" -- F: r -- ) create here 1 floats allot f! does> f@ ;
: FTO ( "name" -- F: r -- )
' >body state @ if
  if postpone fliteral postpone f!
  else f! then
; immediate
```

Otherwise, looks good to me. I've been meaning to add F. -- didn't know anyone

was making heavy use of the floating point facilities. How is it going?

Neal

Re: Fvalue, Fto

Posted by [Mike Will](#) on January 14, 1999 at 10:49:48:

In Reply to: *Re: Fvalue, Fto* posted by Neal Bridges on January 13, 1999 at 18:38:39:

>

```
> : FVALUE ( "name" -- F: r -- ) create here 1 floats allot f! does> f@ ;
> : FTO ( "name" -- F: r -- )
>   ' >body state @ if
>     if postpone fliteral postpone f!
>     else f! then
> ; immediate
>
```

Actually, I think we both made a mistake. You added an extra if in FTO and I erroneously changed literal to fliteral in the same word. Sorry, hope it's ok now.

```
: FTO ( "name" -- F: r -- )
  ' >body state @
  if postpone literal postpone f!
  else f! then
; immediate
```

Mike

Re: Fvalue, Fto

Posted by [Neal Bridges](#) on January 14, 1999 at 11:13:10:

In Reply to: *Re: Fvalue, Fto* posted by Mike Will on January 14, 1999 at 10:49:48:

> >

```
> > : FVALUE ( "name" -- F: r -- ) create here 1 floats allot f! does> f@ ;
> > : FTO ( "name" -- F: r -- )
> >   ' >body state @ if
> >     if postpone fliteral postpone f!
> >     else f! then
> > ; immediate
> >
```

```
> Actually, I think we both made a mistake. You added an extra if in FTO and  
> I  
> erroneously changed literal to fliteral in the same word. Sorry, hope it's  
> ok  
> now.  
>
```

```
> : FTO ( "name" -- F: r -- )  
>   ' >body state @  
>   if postpone literal postpone f!  
>   else f! then  
> ; immediate  
>
```

Glad you caught that, Mike. Next time I'll make a note to HotSync and cut&paste the tested version into the message, rather than transcribing it from the Palm.

Neal

Re: Fvalue, Fto

Posted by [Mike Will](#) on January 13, 1999 at 20:06:11:

In Reply to: *Re: Fvalue, Fto* posted by Neal Bridges on January 13, 1999 at 18:38:39:

```
> I'd use FLOATS in FVALUE to make the code portable:  
> Otherwise, looks good to me. I've been meaning to add F. -- didn't know  
> anyone  
> was making heavy use of the floating point facilities. How is it going?  
> Neal
```

Great, and thanks for cleaning up the stack diagrams; I'm used to a system that didn't have a separate float stack. Like most people who've ever been exposed to Forth, I was using it for embedded systems (15 years ago). Since then, I've gone over to the dark side (I teach Microsoft programming and database courses). I'm learning Quartus by working on a few engineering apps. Forth is much quicker to code in than that CodeWarrior (well named) stuff, and a lot more fun.

Mike

Struct Usage

Posted by [Daryl Lee](#) on January 13, 1999 at 12:39:38:

I can not find it anywhere now, but I once found this memo, presumably for creating "structs". Can someone supply some examples of how to use it? Or is there a better way to build and access structs?

Daryl

```
-----  
\ struct 98.1.10 1:43 am NAB  
  
0 constant struct  
  
: field ( n "fieldname" -- )  
over create , +  
does> ( o -- o+n) @ + ;  
  
: end-struct ( s "structname" --)  
create ,  
does> ( "name" --) @ create allot ;  
  
: sizeof ( "structname" -- s)  
' >body @ ;  
  
: Word 1 cells field ;  
: Ptr 2 cells field ;
```

Re: Struct Usage

Posted by [Neal Bridges](#) on January 13, 1999 at 12:45:45:

In Reply to: *Struct Usage* posted by Daryl Lee on January 13, 1999 at 12:39:38:

```
> I can not find it anywhere now, but I once found this memo, presumably for  
> creating "structs". Can someone supply some examples of how to use it? Or  
is  
> there a better way to build and access structs?  
  
> Daryl
```

I've recently updated this file, and will post the new version soon.

Here's an example struct:

needs struct

```
struct
1 cells field topX
1 cells field topY
1 cells field extentX
1 cells field extentY
end-struct rectangle:

rectangle: MyRectangle

10 MyRectangle topX !
20 MyRectangle topY !
40 MyRectangle extentX !
50 MyRectangle extentY !
```

Re: Struct Usage

Posted by [Daryl Lee](#) on January 14, 1999 at 10:58:15:

In Reply to: *Re: Struct Usage* posted by Neal Bridges on January 13, 1999 at 12:45:45:

> Here's an example struct:

> needs struct

```
> struct
> 1 cells field topX
> 1 cells field topY
> 1 cells field extentX
> 1 cells field extentY
> end-struct rectangle:
```

> rectangle: MyRectangle

```
> 10 MyRectangle topX !
> 20 MyRectangle topY !
> 40 MyRectangle extentX !
> 50 MyRectangle extentY !
```

As it turns out, this struct format can't be used to pass a rectangle (or pointer to it) to the Palm OS, because the data is not compact. I believe the following URL will provide more robust structs and arrays:

http://www.taygeta.com/fsl/docs/fsl_structs.html

Of course, with robustness comes size and loss of speed; pick the problem you

want to live with.

Daryl

Re: Struct Usage

Posted by [Neal Bridges](#) on January 14, 1999 at 11:24:56:

In Reply to: *Re: Struct Usage* posted by Daryl Lee on January 14, 1999 at 10:58:15:

> As it turns out, this struct format can't be used to pass a rectangle (or
> pointer to it) to the Palm OS, because the data is not compact. I believe
the
> following URL will provide more robust structs and arrays:

Daryl, the Palm OS rectangle structure is 4 cells in a row, just like this
struct; there's no reason it can't be passed to the Palm OS. The struct
module
I provided isn't large, but it's certainly robust.

The issue of packed data only comes in when you have fields in a struct that
aren't cells or double-cells. Both GCC and CodeWarrior have different ways of
packing data; the Quartus Forth struct module can be modified to emulate
either
one.

Neal

Re: Struct Usage

Posted by [Daryl Lee](#) on January 15, 1999 at 08:16:54:

In Reply to: *Re: Struct Usage* posted by Neal Bridges on January 14, 1999 at 11:24:56:

> > As it turns out, this struct format can't be used to pass a rectangle (or
> > pointer to it) to the Palm OS, because the data is not compact. I believe
the
> > following URL will provide more robust structs and arrays:

> Daryl, the Palm OS rectangle structure is 4 cells in a row, just like this
> struct; there's no reason it can't be passed to the Palm OS. The struct
module
> I provided isn't large, but it's certainly robust.

Okay, I guess I'll have to get into it in more detail. I loaded the sample "rectangle" you gave, then typed "sizeof MyRectangle" and got 10. I expected 8. I guess I'll have to play with it some more. It would sure be better than stripping down Skip's 21K source module!

Daryl

Re: Struct Usage

Posted by [Daryl Lee](#) on January 15, 1999 at 10:13:44:

In Reply to: *Re: Struct Usage* posted by Daryl Lee on January 15, 1999 at 08:16:54:

This seems to be a classic case of not warming up brain before engaging "mouth". I've done some deeper investigation, and am now entirely happy with the struct implementation presented. And it's A LOT simpler than the FSL's!

Part of my confusion arose from the fact that "sizeof" works on the struct TYPE word, not the INSTANCE word. In the example, "sizeof rectangle:" returns the correct value of 8.

Now, back to work on my app.

Daryl

Re: Struct Usage

Posted by [Neal Bridges](#) on January 15, 1999 at 10:28:53:

In Reply to: *Re: Struct Usage* posted by Daryl Lee on January 15, 1999 at 10:13:44:

> This seems to be a classic case of not warming up brain before engaging
> "mouth". I've done some deeper investigation, and am now entirely happy
with
> the struct implementation presented. And it's A LOT simpler than the FSL's!
> Part of my confusion arose from the fact that "sizeof" works on the struct
TYPE
> word, not the INSTANCE word. In the example, "sizeof rectangle:" returns
the
> correct value of 8.

That's correct; the size of the struct isn't stored in each instance, or there

would be problems with the data representation.

> Now, back to work on my app.

BTW what are you working on?

Neal

Re: Struct Usage

Posted by [Daryl Lee](#) on January 18, 1999 at 08:28:11:

In Reply to: *Re: Struct Usage* posted by Neal Bridges on January 15, 1999 at 10:28:53:

> BTW what are you working on?

I'm glad you asked. Check the new thread that I'm about to start, because I have a couple of technical questions.

Daryl

Re: Struct Usage

Posted by [Mike Dunker](#) on January 13, 1999 at 16:33:19:

In Reply to: *Re: Struct Usage* posted by Neal Bridges on January 13, 1999 at 12:45:45:

> I've recently updated this file, and will post the new version soon.

> Here's an example struct:

> needs struct

> struct

> 1 cells field topX

> 1 cells field topY

> 1 cells field extentX

> 1 cells field extentY

> end-struct rectangle:

> rectangle: MyRectangle

> 10 MyRectangle topX !

> 20 MyRectangle topY !

```
> 40 MyRectangle extentX !  
> 50 MyRectangle extentY !
```

This type of information is very useful to me, as most of the documentation available on the web talks very little about structures.

Another major question I have is: how are arrays implemented in Forth? Also, can arrays of structures be reasonably implemented?

Re: Struct Usage

Posted by [Daryl Lee](#) on January 13, 1999 at 17:34:54:

In Reply to: *Re: Struct Usage* posted by Mike Dunker on January 13, 1999 at 16:33:19:

```
> Another major question I have is: how are arrays implemented in Forth?  
Also,  
> can arrays of structures be reasonably implemented?
```

"Scientific Forth" (Noble) has a good discussion on one-and two-dimensional array words with index checking. The basic idea is to use CREATE/DOES> to allot the space and then do the math to pick out the desired cell. I make no promises, but I may be able to post something useful soon.

Now that I've seen Neal's example, I think I can predict how I would implement a single-dimension array of structures: the "sizeof" word should allow one to "allot" enough space for the array, and then an array of pointers would be easy to build.

Daryl

Re: Struct Usage

Posted by [Neal Bridges](#) on January 13, 1999 at 17:27:54:

In Reply to: *Re: Struct Usage* posted by Mike Dunker on January 13, 1999 at 16:33:19:

```
> > I've recently updated this file, and will post the new version soon.  
> > Here's an example struct:  
> > needs struct
```

```
> > struct
> > 1 cells field topX
> > 1 cells field topY
> > 1 cells field extentX
> > 1 cells field extentY
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> > rectangle: MyRectangle

> > 10 MyRectangle topX !
> > 20 MyRectangle topY !
> > 40 MyRectangle extentX !
> > 50 MyRectangle extentY !
```

> This type of information is very useful to me, as most of the documentation
> available on the web talks very little about structures.

> Another major question I have is: how are arrays implemented in Forth?

Also,

> can arrays of structures be reasonably implemented?

Arrays are trivial (note there is no bounds checking in this example):

```
: array: ( #cells "name" -- )
create cells allot
does> ( index -- &item )
swap cells + ;

\ A 5-cell array (indexes 0..4)
5 array: MyArray

32 0 MyArray !
42 1 MyArray !

0 MyArray @ . 32 ok
```

By an array of structures, I assume you mean an array of pointers to
structures

(a pointer is simply the address of a data item in memory).

Using the rectangle structure from above:

```
rectangle: Rect1
rectangle: Rect2

rect1 0 MyArray !
rect2 1 MyArray !
```

Neal

numberalign.txt available in the File Area

Posted by [Neal Bridges](#) on January 13, 1999 at 10:47:01:

Daryl Lee has contributed *numberalign*, a module providing words for the left, right, and centre-alignment of displayed numbers.

It's in the Quartus Forth File Area.

Neal

- [File Area](#)
-

"Debuffer" -- a Palm OS Emulator debugger

Posted by [Neal Bridges](#) on January 12, 1999 at 22:34:25:

Have a look at <http://www.pagesz.net/~sessoms/debuffer/> for a neat debugger add-on to the Palm OS emulator. One thing that really caught my eye -- the scripting language in the debugger is Forth!

Neal

- ["Debuffer"](#)
-

How about a "recent memos" menu choice?

Posted by [Carl Jacobsen](#) on January 12, 1999 at 22:27:46:

I'd be interested in seeing Quartus have a new menu choice (or a new section on one of the existing menus) that would list the names of the (say) five memos most recently INCLUDED by hand from the, er, console interface. The idea being that this would obviate the need to scrawl in "include foobar" every time you switch back to Quartus from the memopad -- you'd just tap menu, tap program, and tap the "foobar" choice, and Quartus would "type" the line "include foobar" for you.

For extra points, you could monitor the hand-entered DocInclude commands in a similar manner and then list the most recent previous five or ten source files,

regardless of whether they are DOCs or memos, with Quartus issuing an "include foobar" or "DocInclude foobar" as appropriate.

Seems to me like this'd be a cheap way to alleviate much of the pain associated with having to switch away from Quartus to edit source code.

Or, should I go read the manual as I'm missing something terribly obvious that everyone else already knows? :-)

-- Carl

Re: How about a "recent memos" menu choice?

Posted by [Neal Bridges](#) on January 12, 1999 at 22:59:56:

In Reply to: *How about a "recent memos" menu choice?* posted by Carl Jacobsen on January 12, 1999 at 22:27:46:

[menu of recently included files]

> Seems to me like this'd be a cheap way to alleviate much of the pain associated

> with having to switch away from Quartus to edit source code.

> Or, should I go read the manual as I'm missing something terribly obvious that

> everyone else already knows? :-)

I have a shortcut defined called 'i' that types 'include' followed by a space;

that saves me a great deal of time when editing source. I like your idea, but dynamically modifying the menu presents problems. The other solution, presenting a list of all memos and allowing a selection, is easy in the simple

case -- a few memos -- but becomes more complex when the number of memos is very large, as it is on my Palm.

I'm open to suggestions, and I appreciate your feedback -- if you have any thoughts re the above I'd be delighted to discuss them.

Neal

Re: How about a "recent memos" menu choice?

Posted by [Carl Jacobsen](#) on January 13, 1999 at 06:12:01:

In Reply to: *Re: How about a "recent memos" menu choice?* posted by Neal Bridges on January 12, 1999 at 22:59:56:

> [menu of recently included files]

> > Seems to me like this'd be a cheap way to alleviate much of the pain
> > associated with having to switch away from Quartus to edit source code.

> I have a shortcut defined called 'i' that types 'include' followed by a space;

> that saves me a great deal of time when editing source. ...

Actually, I've started using Pop hack, which I nearly forgot I had installed, to

send "include foobar", where foobar is the name of the memo I'm hacking on at the moment, but that's probably not a good general solution for everyone else...

> ... I like your idea,

> but dynamically modifying the menu presents problems. ...

I see (I've been reading a bit in O'Reilly's Palm Programming book), hmm, how about this: add a menu choice to the "Program" menu, called "Include", with a shortcut of "command i", that brings up a form with a list object containing the

names of the 5 (6? 10?) most recently included docs/memos. It looks like you can

specify the contents of a list object at runtime (I'm looking at p113 in the O'Reilly book, and my apologies if I'm covering well travelled territory -- I've

yet to do any real Pilot programming), using the LstSetArrayChoices or LstSetDrawFunction functions. If you can get it to finish off the form on the first pen tap on a filename, great; if the pen tap only chooses a list item, then have an "include" button at the bottom of the form.

With this, you could do "command, i, tap_on_a_memo_name" to repeat a recent include or docinclude...

> ... The other solution,

> presenting a list of all memos and allowing a selection, is easy in the
> simple case -- a few memos -- but becomes more complex when the number of
> memos is very large, as it is on my Palm.

Agreed, I've over 150 memos on my Palm III; and a key part of the original idea

was to present the user with only the names of the last handful of memos (and

possibly docs) used, so that the one you wanted was likely to be "right there",
to ease the compile/test/edit loop.

> I'm open to suggestions, and I appreciate your feedback -- if you have any
> thoughts re the above I'd be delighted to discuss them.

Glad to hear it; that's something that has impressed me about the Pilot software field in general, and you in particular (many other Pilot developers answer email, but few go to the effort of running a forum).

One other (possibly stupid) idea there's obviously a standard, if minimal, mostly-full-screen text editor "widget" in the Pilot -- I'm thinking now of, for example, the editor "window" you get dropped into when attaching a note to a ToDo entry -- would it be horribly complicated to coerce that editor into working on a memo? So you could do, say, "edit memoname" directly from inside Quartus? It doesn't have to have all the bells and whistles of memopad (categories and "new" buttons and menus and such), if you could just use it to tweak bugs out of an existing memo (heh, and then, clone the "include memo" stuff above to make a short list for editing memos).

Quartus can already read the text of a memo... if you could feed the text through the, er, text editor widget (have no idea of its real name), and then write the result back on top of the existing memo, without ever leaving Quartus, that'd be really cool :-)

Thanks for listening, and keep up the great work,
-- Carl

Re: How about a "recent memos" menu choice?

Posted by [Neal Bridges](#) on January 13, 1999 at 10:56:15:

In Reply to: *Re: How about a "recent memos" menu choice?* posted by Carl Jacobsen on January 13, 1999 at 06:12:01:

> > ... I like your idea,
> > but dynamically modifying the menu presents problems. ...

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> about this: add a menu choice to the "Program" menu, called "Include", with a

> shortcut of "command i", that brings up a form with a list object containing the names of the 5 (6? 10?) most recently included docs/memos. It looks like you can specify the contents of a list object at runtime (I'm looking at pl13 in the O'Reilly book, and my apologies if I'm covering well travelled territory -- I've yet to do any real Pilot programming), using the LstSetArrayChoices or LstSetDrawFunction functions. If you can get it to finish off the form on the first pen tap on a filename, great; if the pen tap only chooses a list item, then have an "include" button at the bottom of the form.

It's a good idea; I'll see what I can do.

> One other (possibly stupid) idea there's obviously a standard, if minimal, mostly-full-screen text editor "widget" in the Pilot -- I'm thinking now of, for example, the editor "window" you get dropped into when attaching a note to a ToDo entry -- would it be horribly complicated to coerce that editor into working on a memo? So you could do, say, "edit memoname" directly from inside Quartus? It doesn't have to have all the bells and whistles of memopad (categories and "new" buttons and menus and such), if you could just use it to tweak bugs out of an existing memo (heh, and then, clone the "include memo" stuff above to make a short list for editing memos).

Sadly the text-editor 'widget' is not so neatly encapsulated by the system; or rather, if it is so encapsulated in the ROM, there's no direct interface to it.

Multi-line fields are available, yes; but if you want a scroll-bar, for instance, it's necessary to lay down supporting code for it, at which point the code becomes Palm OS 2.0-and-later specific.

I'm against the notion of reproducing functionality already present in the device, as that way leads to code bloat. Ideally I'd like to be able to call the MemoPad as a sub-program, but it doesn't appear to be structured to allow it.

> Quartus can already read the text of a memo... if you could feed the text through the, er, text editor widget (have no idea of its real name), and then write the result back on top of the existing memo, without ever leaving

Quartus,
> that'd be really cool :-)

It might be useful. Speaking for myself, I bounce back and forth between Quartus Forth, the MemoPad, RsrcEdit, and several other utilities when developing; even if Quartus Forth and the MemoPad were a closed loop, I'd still find myself leaving and re-entering Quartus Forth regularly. I think your notion of a 'most recently included' popup is the best route for rapid application design.

> Thanks for listening, and keep up the great work,

No problem. I appreciate the feedback!

Neal

Re: How about a "recent memos" menu choice?

Posted by [Daryl Lee](#) on January 13, 1999 at 11:12:40:

In Reply to: *Re: How about a "recent memos" menu choice?* posted by Neal Bridges on January 13, 1999 at 10:56:15:

I tend to work on one application at a time (which may "need" other memos). After a few iterations of "include foobar" I type it into the bottom of startup.quartus. It works for me.

Daryl

Re: How about a "recent memos" menu choice?

Posted by [Lou Solomon](#) on January 13, 1999 at 12:23:43:

In Reply to: *Re: How about a "recent memos" menu choice?* posted by Daryl Lee on January 13, 1999 at 11:12:40:

All:

For my 2 cents: I can think of lots of things that would improve the Quartus programming environment, but I believe that virtually NONE of the things should be 'included' into the Quartus Kernel.

Basically, these programming tools should be optional wordsets that can be included in startup.quartus I think that those who don't need the tools shouldn't have to have their 'resource' requirements (ie: dynamic ram, etc.) increased, if they don't need to. And, I'm not sure how increasing the kernel would affect the size of compiled apps.

For example: I'm kind of hoping that in the future, someone (I'd love it to be myself, but my free time is becoming scarce) writes a 'better' command line for Quartus, ie: multiple command line recall, write commands to memo, etc. but I would think this needs to be in the kernel.

Just my thoughts...

Lou

Re: How about a "recent memos" menu choice?

Posted by [Neal Bridges](#) on January 13, 1999 at 12:35:47:

In Reply to: *Re: How about a "recent memos" menu choice?* posted by Lou Solomon on January 13, 1999 at 12:23:43:

> For my 2 cents: I can think of lots of things that would improve the Quartus programming environment, but I believe that virtually NONE of the things should be 'included' into the Quartus Kernel.

> Basically, these programming tools should be optional wordsets that can be included in startup.quartus I think that those who don't need the tools shouldn't have to have their 'resource' requirements (ie: dynamic ram, etc.) increased, if they don't need to. And, I'm not sure how increasing the kernel would affect the size of compiled apps.

I agree with your philosophy, Lou. Fortunately adding features to the kernel will not usually affect the size of compiled stand-alone apps at all; stand-alone apps contain only the parts of the kernel code they require to run.

> For example: I'm kind of hoping that in the future, someone (I'd love it to be myself, but my free time is becoming scarce) writes a 'better' command line

for
> Quartus, ie: multiple command line recall, write commands to memo, etc. but
I
> would think this needs to be in the kernel.
Command history is on my list; it will have to be integrated into ACCEPT.
Neal

Re: How about a "recent memos" menu choice?

Posted by Mike Dunker on January 13, 1999 at 15:07:47:

In Reply to: *Re: How about a "recent memos" menu choice?* posted by Neal Bridges on January 13, 1999 at 12:35:47:

There is an interesting hack called "PopUp Note" that allows access to the memo pad from within another application. Unfortunately, when used within QForth, it pops up an error saying "MemoPad database is already in use!" (even when no forth app is running). I assume that QForth grabs and locks the memopad database for the duration, but this would be an easy/cheap way to have access to the memopad without leaving forth if these apps could learn to coexist. The hack is only \$5, and would be well worth it to avoid the delay inherent in starting forth every time I wanted to pop over to the memopad.

Re: How about a "recent memos" menu choice?

Posted by [Neal Bridges](#) on January 13, 1999 at 16:13:45:

In Reply to: *Re: How about a "recent memos" menu choice?* posted by Mike Dunker on January 13, 1999 at 15:07:47:

> There is an interesting hack called "PopUp Note" that allows access to the memo
> pad from within another application. Unfortunately, when used within
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> database for the duration, but this would be an easy/cheap way to have
access
> to the memopad without leaving forth if these apps could learn to coexist.
> The hack is only \$5, and would be well worth it to avoid the delay inherent
in
> starting forth every time I wanted to pop over to the memopad.

Just checked it out; looks very interesting. I can fix that 'already in use'
message without too much trouble. Thanks for bringing this to my attention!

Neal

Re: How about a "recent memos" menu choice?

Posted by [Neal Bridges](#) on January 13, 1999 at 19:16:00:

In Reply to: *Re: How about a "recent memos" menu choice?* posted by Neal
Bridges on January 13, 1999 at 16:13:45:

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in
> > starting forth every time I wanted to pop over to the memopad.
> Just checked it out; looks very interesting. I can fix that 'already in
use'
> message without too much trouble. Thanks for bringing this to my attention!

Further to this, I've been working on it tonight and have PopUp note
functioning
within Quartus Forth. The changes will be in 1.0.6.

Neal

"A Beginner's Tutorial" -- errata

Posted by [Neal Bridges](#) on January 12, 1999 at 22:17:07:

A few of you have been looking at the "Beginner's Forth Tutorial" that has a link on the "Online Resources" page. That tutorial is fairly dated, and written

for a different Forth, so a few things in it do not apply exactly:

.s displays the top of the stack on the right in Quartus Forth; the examples in that tutorial show the top of the stack on the left.

The example showing 300 constant mutliplier ' multiplier @@ . isn't Standard code, and won't work under Quartus Forth.

I'm working on a Quartus Forth tutorial myself; in the meantime, if you have any questions that arise when viewing Forth material elsewhere on the web, I'm happy to address them.

Neal

QForth capabilities

Posted by Mike Dunker on January 12, 1999 at 14:52:40:

Hi,

Like many here, this is my first attempt at Forth programming, and I am struggling through learning the language. (You can't just go down to the local bookstore and pick up a book on Forth. They all seem to think the language is dead.)

Anyway, I was wondering if it is possible to use QForth to create Hackmaster hacks? (Are any of your hacks written in Forth, Neal?)

Also, is it possible to use 2 bit grayscale graphics?

It seems like packages to help with these would be nice to have. Also, the word lists in the file area tend to have zero documentation. I noticed that the file area doesn't really have a placeholder for one to put documentation--

am I the only one who would like to see a list of the words in a file that are meant to be used externally, and their usage in English?

If I continue to have the interest that I am having right now, my registration will be on its way, Neal.

Thanks,
Mike

Re: QForth capabilities

Posted by [Neal Bridges](#) on January 12, 1999 at 15:07:08:

In Reply to: *QForth capabilities* posted by Mike Dunker on January 12, 1999 at 14:52:40:

> Like many here, this is my first attempt at Forth programming, and I am
> struggling through learning the language. (You can't just go down to the
local
> bookstore and pick up a book on Forth. They all seem to think the language
is
> dead.)

> Anyway, I was wondering if it is possible to use QForth to create
Hackmaster
> hacks? (Are any of your hacks written in Forth, Neal?)

It would certainly be possible to write them in assembler, using asm68k. I've never written a hack using Quartus Forth for the simple reason that I write hacks in assembler, so as to be certain they're as non-intrusive as possible, and asm68k (the Quartus Forth assembler) wasn't available until relatively recently in my hack-writing career. I'll put a sample hack on my list of things to do.

Hacks are tricky to write. Within a hack, there's no globals area available, and you have to be very careful about using system stack space.

> Also, is it possible to use 2 bit grayscale graphics?

There are PalmOS calls for grayscale in the Palm III; there's no obstacle to using them.

> It seems like packages to help with these would be nice to have. Also, the
> word lists in the file area tend to have zero documentation. I noticed that
> the file area doesn't really have a placeholder for one to put
documentation--
> am I the only one who would like to see a list of the words in a file that
are
> meant to be used externally, and their usage in English?

I'm not sure what you mean by a placeholder, but certainly the library code could use further documentation. I'm working on it.

> If I continue to have the interest that I am having right now, my registration
> will be on its way, Neal.

Then I hope I can help maintain your interest! :)

Neal

The better mousetrap...

Posted by [Rick Francis](#) on January 11, 1999 at 16:32:49:

I'm not a Forth maven yet -- that will take awhile -- but, although my spare time for the past three weeks has been sparse indeed, I'm finding that nothing seems so much worth doing as fooling around with Quartus. The word that comes to mind is "beguiling." While working up the nerve to try more things involving systraps, resources, etc. I've been firming up my basic understanding by playing with odds and ends of recreational mathematics; it's addictive.

Anyway, I'm old enough to be reminded of what the emergence of "people's compilers" from Borland and others did for the IBM PC platform back in the early eighties. Then as now, they weren't the "official" development systems, and they came from vendors whose names we didn't know; but like Quartus they were beguiling and addictive, and so thousands woke up at some later point to discover that they were, in fact, developers. How that has worked out since is a matter of record; I needn't belabor it.

Mark Twain once remarked that, while history doesn't repeat itself, it sure does rhyme.

Rick Francis

Re: The better mousetrap...

Posted by [William Tanksley](#) on January 15, 1999 at 18:09:39:

In Reply to: *The better mousetrap...* posted by Rick Francis on January 11, 1999 at 16:32:49:

I agree with your post entirely; just wanted to comment on this...

> involving systraps, resources, etc. I've been firming up my basic understanding

> by playing with odds and ends of recreational mathematics; it's addictive.

Interesting. What topics have you explored? My math professor wrote a group theory package called "groups32" which allows you to explore the properties of

abstract groups up to order 32. You can also build groups using permutations, although if they're bigger than order 32 you can't import them back into the system.

I'm trying to convince him to let me port it to Quartus... :-)

> Rick Francis

-Billy

Re: The better mousetrap...

Posted by [Rick Francis](#) on January 20, 1999 at 00:00:43:

In Reply to: *Re: The better mousetrap...* posted by William Tanksley on January 15, 1999 at 18:09:39:

> Interesting. What topics have you explored? My math professor wrote a group theory package called "groups32" which allows you to explore the properties of

> abstract groups up to order 32. You can also build groups using permutations,

> although if they're bigger than order 32 you can't import them back into the

> system.

> I'm trying to convince him to let me port it to Quartus... :-)

I'd better make it clear that I'm not a mathematician -- have a tiny smattering

of group theory only. My degree, earned back in the lower Tertiary, was in anthropology; prior to that, in the upper Cretaceous, I was a piano tuner(!)

I
earn my living these days doing Windows development, client/server stuff
mostly. Much more abstruse than Martin Gardner, I ain't.

But see subsequent posting "... that turned out to be a benchmark" -- a
demonstration of the 3n+1 conjecture that I tinkered together while stuck in
a
hotel room one evening last week.

Rick

cmdPBP pointer and SysAppLaunch

Posted by [Dave Steele](#) on January 11, 1999 at 12:21:06:

I am trying to launch the memo app as a subprocess, and am having some
trouble.

Here is my first stab at the call:

```
variable result 2 allot  
result >abs 2dup 0 0 1845 1855 0 SysAppLaunch
```

i.e. set up a variable to hold results

- use that variable as both the result area and the pointer to cmdPBP
- launch code and flags are both zero (OK according to O'Reilly)
- 1845 and 1855 are my attempt to put the creator id 'memo' (It's been a long
time since I wrote any FORTH code)
- card number 0

This crashes the Pilot hard. It looks like I need to pass the cmdPBP that I
received in PilotMain. So how do I get that pointer?

Re: cmdPBP pointer and SysAppLaunch

Posted by [Neal Bridges](#) on January 11, 1999 at 12:49:06:

In Reply to: *cmdPBP pointer and SysAppLaunch* posted by Dave Steele on January
11, 1999 at 12:21:06:

> I am trying to launch the memo app as a subprocess, and am having some
trouble.

> Here is my first stab at the call:

```
> variable result 2 allot
```

```
> result >abs 2dup 0 0 1845 1855 0 SysAppLaunch  
  
> i.e. set up a variable to hold results  
> - use that variable as both the result area and the pointer to cmdPBP  
> - launch code and flags are both zero (OK according to O'Reilly)  
> - 1845 and 1855 are my attempt to put the creator id 'memo' (It's been a  
long  
> time since I wrote any FORTH code)  
> - card number 0  
  
> This crashes the Pilot hard. It looks like I need to pass the cmdPBP that I  
> received in PilotMain. So how do I get that pointer?
```

What you're attempting is tricky. A few things I noticed --

- 1) Use 2VARIABLE to define your result buffer, rather than 2 allot; this is mostly a matter of style, but it's good practice.
- 2) You're passing the address of 'result' in twice, both as your result and as your cmdPBP. CmdPBP must be a region of memory 18 bytes long, if memory serves; check the 3Com header files.
- 3) Normally you'd use the *ids.txt* module from the Quartus Forth file area for specifying creator IDs, at which point the syntax is simply (ID) memo. **HOWEVER**, note that what is required by SysAppLaunch isn't a creator ID, it's a local ID (sometimes also called a dbID by 3Com), which is a different creature completely. You can retrieve a database's local ID and card number using the Palm OS function DmGetNextDatabaseByTypeCreator.
- 5) Launching the MemoPad as a sub-process only makes sense if the MemoPad could somehow exit back to your application, which it can't; there's no 'done' button. If there's some way to get the MemoPad to return, I'd like to know it myself, as it would then be a simple matter to integrate the MemoPad directly into Quartus Forth.

Neal

Re: cmdPBP pointer and SysAppLaunch

Posted by [Dave Steele](#) on January 13, 1999 at 11:46:10:

In Reply to: *Re: cmdPBP pointer and SysAppLaunch* posted by Neal Bridges on January 11, 1999 at 12:49:06:

> 2) You're passing the address of 'result' in twice, both as your result and as
> your cmdPBP. CmdPBP must be a region of memory 18 bytes long, if memory serves;
> check the 3Com header files.

I can find no mention of cmdPBP as anything other than a Ptr (I don't have the OS source). The only handling of it is to hand it off to other launch calls. This leads me to believe that I need access to Quartus's cmdPBP, but I don't know how to access it.

> 5) Launching the MemoPad as a sub-process only makes sense if the MemoPad could
> somehow exit back to your application, which it can't; there's no 'done' button.
> If there's some way to get the MemoPad to return, I'd like to know it myself,
as
> it would then be a simple matter to integrate the MemoPad directly into Quartus
> Forth.

At this point I would be happy to pass control to the memo pad, in it's current environment, ala Launcher. There must be a way to do that with the appropriate launch code.

Re: cmdPBP pointer and SysAppLaunch

Posted by [Neal Bridges](#) on January 13, 1999 at 12:33:14:

In Reply to: *Re: cmdPBP pointer and SysAppLaunch* posted by Dave Steele on January 13, 1999 at 11:46:10:

>
> > 2) You're passing the address of 'result' in twice, both as your result

and
as
> > your cmdPBP. CmdPBP must be a region of memory 18 bytes long, if memory
> serves;
> > check the 3Com header files.

> I can find no mention of cmdPBP as anything other than a Ptr (I don't have
the
> OS source). The only handling of it is to hand it off to other launch
calls.
> This leads me to believe that I need access to Quartus's cmdPBP, but I
don't
> know how to access it.

cmdPBP is a pointer, but all pointers are pointers to something; in this case
it's a pointer to a command parameter block containing the parameters you
want
to send to the app you're calling.

The header files available free from 3Com as part of the SDK documentation
are
useful for this sort of information.

> At this point I would be happy to pass control to the memo pad, in it's
current
> environment, ala Launcher. There must be a way to do that with the
appropriate
> launch code.

Here's a snippet from when I prototyped the "Last Error" function in Quartus
Forth. It launches the MemoPad, as though it were called from the Application
launcher. It's a script; as soon as you include it the memopad will come up.
There are no definitions in it; I post it here less for general utility, and
more so that you can see the sequence of steps required. Let me know if any
part of it needs clarification.

```
\ memopad  
needs ids  
  
create DmSearchStateType 16 allot  
variable cardnum  
2variable localid  
  
\ Get the localid and cardnum of  
\ the memo application:  
  
localid >abs cardnum >abs true  
(ID) memo (ID) appl  
DmSearchStateType >abs true  
DmGetNextDatabaseByTypeCreator throw  
  
\ Allocate a cmdPB owned by the  
\ system:
```

```
create cmdPB
here 18 dup allot 0 fill

18. MemPtrNew 2constant systemCmdPB
0 systemCmdPB MemPtrSetOwner throw

18. cmdPB >abs systemCmdPB MemMove throw

\ Launch the app (launch code 0):

systemcmdPB 0 localid 2@ cardnum @
SysUIAppSwitch throw
```

Catch system error

Posted by [Mike Will](#) on January 11, 1999 at 11:25:19:

Are there any examples of catching a system exception anywhere? I've tried getting the xt using eventhandler @ but am not having much luck. Thanks

Re: Catch system error

Posted by [Neal Bridges](#) on January 11, 1999 at 11:27:48:

In Reply to: *Catch system error* posted by Mike Will on January 11, 1999 at 11:25:19:

> Are there any examples of catching a system exception anywhere? I've tried
> getting the xt using eventhandler @ but am not having much luck.

What do you mean by 'system exception', Mike? Can you give an example of what you'd like to handle?

Neal

Re: Catch system error

Posted by [Mike Will](#) on January 11, 1999 at 12:22:07:

In Reply to: *Re: Catch system error* posted by Neal Bridges on January 11, 1999 at 11:27:48:

> What do you mean by 'system exception', Mike? Can you give an example of what
> you'd like to handle?
> Neal

The specific error I'm getting is 537. I believe it's "File already exists" during a CreateDB operation. The logic I need is something like:

- 1) hook into Quartus exception handler
- 2) attempt to create DB
- 3) handle error 537
- 4) unhook from exception handler

Thanks

Re: Catch system error

Posted by [Neal Bridges](#) on January 11, 1999 at 12:56:08:

In Reply to: *Re: Catch system error* posted by Mike Will on January 11, 1999 at 12:22:07:

> The specific error I'm getting is 537. I believe it's "File already exists"
> during a CreateDB operation. The logic I need is something like:

> 1) hook into Quartus exception handler
> 2) attempt to create DB
> 3) handle error 537
> 4) unhook from exception handler

Nothing simpler. Quartus Forth provides full nested exception handling with the words CATCH and THROW. When CreateDB fails, it sends up an exception code which can be caught using CATCH. You'll see the word THROW in the definition of CreateDB.

Here's the general idea:

```
: newdb ...code which calls CreateDB... ;  
  
: go ['] newdb CATCH ?dup if ...handle error... then ;
```

CATCH runs newdb, and returns 0 if no THROW occurred, or the throw code if a THROW did occur.

You can use THROW and CATCH for your own error handling, as well. If there's no handler, you'll see the "Exception Message" popup. In a compiled application, unhandled THROWS are passed to the exit handler, and the program terminates.

There are a number of Palm OS routines that don't return an error, but rather bring up a Fatal Exception or other reset message when they fail; those messages are hardwired into the Palm OS and can't be overridden.

Neal

Re: Catch system error

Posted by [Mike Will](#) on January 11, 1999 at 17:31:07:

In Reply to: *Re: Catch system error* posted by Neal Bridges on January 11, 1999 at 12:56:08:

> There are a number of Palm OS routines that don't return an error, but rather
> bring up a Fatal Exception or other reset message when they fail; those messages
> are hardwired into the Palm OS and can't be overridden.

> Neal

Wonderful, it all works beautifully. I've gotten more done today with Quartus than I usually accomplish in a week with Visual C++.

Listen, is there any way that we could get a ZIP'd version of this group like the one you did in November for offline use? This discussion is becoming a prime reference (maybe you should publish a book -- "Starting Quartus" or something)

Mike

Re: Catch system error

Posted by [Neal Bridges](#) on January 11, 1999 at 18:45:53:

In Reply to: *Re: Catch system error* posted by Mike Will on January 11, 1999 at 17:31:07:

> Wonderful, it all works beautifully. I've gotten more done today with Quartus
> than I usually accomplish in a week with Visual C++.

> Listen, is there any way that we could get a ZIP'd version of this group like
> the one you did in November for offline use? This discussion is becoming a
> prime reference (maybe you should publish a book -- "Starting Quartus" or
> something)

I'll be archiving soon; the page is getting long again.

Neal

Debugger anyone ?

Posted by [mark andrew](#) on January 11, 1999 at 09:52:53:

Yes I know "real programmers don't use debuggers" but a simple one would certainly be helpful for me in the throes of relearning Forth after 15 years of

Pascal/Ada/C++. Am I the first person to raise the issue ? I naively assume that

it shouldn't be difficult given the openness of the Forth virtual machine.

Thanks for a great piece of software Neal and keep up the good work.

Mark

Re: Debugger anyone ?

Posted by [Neal Bridges](#) on January 11, 1999 at 10:29:01:

In Reply to: *Debugger anyone ?* posted by mark andrew on January 11, 1999 at 09:52:53:

> Yes I know "real programmers don't use debuggers" but a simple one would
> certainly be helpful for me in the throes of relearning Forth after 15

years
of
> Pascal/Ada/C++. Am I the first person to raise the issue ? I naively assume
that
> it shouldn't be difficult given the openness of the Forth virtual machine.
> Thanks for a great piece of software Neal and keep up the good work.
Thanks, Mark. What sort of facilities are you looking for in a debugger?
Neal

Re: Debugger anyone ?

Posted by [mark andrew](#) on January 12, 1999 at 01:45:09:

In Reply to: *Re: Debugger anyone ?* posted by Neal Bridges on January 11, 1999
at 10:29:01:

> What sort of facilities are you looking for in a debugger?
> Neal

Well you asked for it :-)

Off the top of my head, the minimum would be the following

Single step through source (over/into) maybe controlled by the scroll
buttons.

Updated view of current stack.

Breakpoints maybe implemented with a word which you have to insert into your
source, and then of course a run command as an alternative to the single
step.

I notice you don't implement SEE. Is decompiling words a problem ?

Mark

Re: Debugger anyone ?

Posted by [Neal Bridges](#) on January 12, 1999 at 15:00:09:

In Reply to: *Re: Debugger anyone ?* posted by mark andrew on January 12, 1999 at 01:45:09:

- > Off the top of my head, the minimum would be the following
- > Single step through source (over/into) maybe controlled by the scroll buttons.
- > Updated view of current stack.
- > Breakpoints maybe implemented with a word which you have to insert into your
- > source, and then of course a run command as an alternative to the single step.

Thanks for the feedback. I'm putting together a debugging module.

- > I notice you don't implement SEE. Is decompiling words a problem ?

Quartus Forth generates native code; it's not 'threaded' as were many Forths of days gone by. A proper SEE for Quartus Forth is in fact a 68000 disassembler. I've ported one and am in the process of polishing it up to make it available.

Neal

RscEdit Bug

Posted by [Daryl Lee](#) on January 11, 1999 at 08:55:23:

For those of you who are using RscEdit v0.995, be warned. There is a very nasty bug in the New Icon function. I used it last week and got a hard reset; Roger confirmed to me in an email that the same thing happened to him.

Version

0.997 is available and this bug and others are (supposedly) fixed. I have a little defensive work to do before I'm ready to confirm the fix.

Daryl

Re: RscEdit Bug

Posted by [Neal Bridges](#) on January 11, 1999 at 09:36:14:

In Reply to: *RscEdit Bug* posted by Daryl Lee on January 11, 1999 at 08:55:23:

> For those of you who are using RscEdit v0.995, be warned. There is a very
> nasty bug in the New Icon function. I used it last week and got a hard
reset;

> Roger confirmed to me in an email that the same thing happened to him.

Version

> 0.997 is available and this bug and others are (supposedly) fixed. I have a
> little defensive work to do before I'm ready to confirm the fix.

Thanks Daryl. I'm glad Roger was able to fix that bug so quickly. For those of you unfamiliar with it, RsrcEdit is an on-board GUI resource editor, available from www.individeo.net.

Neal

Re: RscEdit Bug

Posted by [Daryl Lee](#) on January 11, 1999 at 10:03:55:

In Reply to: *Re: RscEdit Bug* posted by Neal Bridges on January 11, 1999 at 09:36:14:

I have now run V 0.997, and successfully created a new resource database, complete with icon. Apparently the bug has been fixed, and I appreciate the quick response from Roger.

Daryl

Quartus Forth 1.0.5 now available

Posted by [Neal Bridges](#) on January 10, 1999 at 23:31:50:

Now available in the Quartus File Area: Quartus Forth 1.0.5 (Evaluation).

New in this update:

(float) -- as (binary), (hex), etc. but works with floats.

allwords -- lists all words in all wordlists in the current search order.

WORDS -- now has its Standard behaviour: listing only those words in the first wordlist in the current search order.

The registered version has gone out to all registered users. Thanks again for your registrations!

Enjoy!

Neal

- [File Area](#)



Quartus Discussion Forum messages from before January 10, 1999

DataMgr

Posted by [Mike Will](#) on January 10, 1999 at 21:30:25:

Neal, if you have time, could you give me an example of the type. and creator. parameters required by CreateDB in DataMgr? I've been digging thru 3-COMs SDK docs all day and they give about 400 examples of the DmCreateDatabase call, but not one single explicit type. or creator. initialization. For example, they state that creator is a ULong datatype, but then they refer to it as the 4-character CRID string one obtains from their website. Thanks very much
Mike

Re: DataMgr

Posted by [Neal Bridges](#) on January 10, 1999 at 21:40:14:

In Reply to: *DataMgr* posted by Mike Will on January 10, 1999 at 21:30:25:

> Neal, if you have time, could you give me an example of the type. and creator.
> parameters required by CreateDB in DataMgr? I've been digging thru 3-COMs SDK
> docs all day and they give about 400 examples of the DmCreateDatabase call,
> but
> not one single explicit type. or creator. initialization.
> For example, they state that creator is a ULong datatype, but then they refer
> to it as the 4-character CRID string one obtains from their website.

No problem, Mike.

A 4-character CCreator ID is in fact the same size as a ULong: 4 bytes. The 3Com documentation describes it differently in different places. In Quartus Forth, the words in *ids* are used to easily turn 4-character types and creator IDs into double-cell numbers (ULongs) on the stack.

Here's a snippet:

```
needs zstrings
needs ids
: name z" MyName" ;
false (ID) DATA (ID) MyAp name CreateDB
```

This creates a new database called "MyName", Creator ID 'MyAp', type 'DATA'.

If your application creates databases, they all should have the same creator ID as your application. The type and name of each database is entirely up to you.

Neal

Re: DataMgr

Posted by [Mike Will](#) on January 11, 1999 at 08:50:00:

In Reply to: *Re: DataMgr* posted by Neal Bridges on January 10, 1999 at 21:40:14:

> This creates a new database called "MyName", Creator ID 'MyAp', type 'DATA'.

> If your application creates databases, they all should have the same creator ID

> as your application. The type and name of each database is entirely up to you.

> Neal

Beautiful, thanks Neal.

What are you working on?

Posted by [Neal Bridges](#) on January 10, 1999 at 01:12:42:

I'm assembling a links page for projects underway in Quartus Forth. If you'd like your page included, send me a note.

Neal

DUMP

Posted by [Ed Beroset](#) on January 09, 1999 at 07:30:31:

Here's are two words I find useful. These aren't duplicates of already defined words, are they? The 2hex thing is already included in ports.txt, already posted.

```
\ dump memory locations in hex
: dump ( addr len -- )
  0 d0
  i 8 mod 0= if cr then
  dup i + c@ 2hex
  loop drop ;

\ dump if length isn't zero
: ?dump ( addr len -- )
  dup if dump else 2drop then ;
```

Ed

Re: DUMP

Posted by [Neal Bridges](#) on January 09, 1999 at 11:24:23:

In Reply to: *DUMP* posted by Ed Berozet on January 09, 1999 at 07:30:31:

> Here's are two words I find useful. These aren't duplicates of already
defined
> words, are they? The 2hex thing is already included in ports.txt, already
> posted.

I haven't released versions of these yet.

>

```
> \ dump memory locations in hex
> : dump ( addr len -- )
>   0 d0
>     i 8 mod 0= if cr then
>     dup i + c@ 2hex
>     loop drop ;
```

```
> \ dump if length isn't zero
> : ?dump ( addr len -- )
>   dup if dump else 2drop then ;
>
```

Two things I see here -- first, I think you mean 'do' and not 'd0' in dump, and second, if you use ?do instead of do, you don't need the second word ?dump.

Neal

port words for my fellow hardware hackers

Posted by [Ed Berozet](#) on January 08, 1999 at 22:22:43:

I have been working on figuring out how to gain very low level access to the infrared port on my Palm III. I haven't yet solved all of my problems, but on the way I wrote some words which you all might find useful as well. The DragonBall processor that powers the Palm III has ten 8-bit wide parallel I/O ports. These words are intended to simplify access to those ports.

Comments are welcome!

```
\ ports 98.12.27 9:57 pm EJB
```

```
\ dump top of stack in hex
: 2hex ( u --)
```

```
base @ swap hex 0 <# # #s #>
type space base ! ;
```

```
\ these are the data addresses
\ for the MC68328 processor's ten
\ I/O ports; { A B C D E F G J K M }
\ the data direction register is just
\ below each - e.g. PADIR = 400h
```

hex

```
create PortData 401 , 409 , 411 ,
                419 , 421 , 429 , 431 , 439 ,
                441 , 449
```

```
ffff.f000 2constant reg
```

decimal

```
\ shows 8-bit register contents
: show ( regoffset -- )
  0 reg d+ c@a 2hex ;
```

```
\ toggles mask bits on specified port
: bit ( mask portnum -- )
  cells PortData + @ 0 reg d+ 2dup
  c@a 3 roll
  xor rot rot c!a ;
```

```
\ shows all ten I/O port contents
: showports ( -- )
  10 0 do
    i cells PortData + @ show
  loop cr ;
```

```
\ shows all ten I/O data dir regs
: showdirs ( -- )
  10 0 do
    i cells PortData + @ 1- show
  loop cr ;
```

```
\ shows data dir and port contents
: sd ( -- )
  cr showdirs showports ;
```

Enjoy!

Ed

Now in the File Area (was Re: port words for my fellow hardware hackers)

Posted by [Neal Bridges](#) on January 09, 1999 at 00:27:13:

In Reply to: *port words for my fellow hardware hackers* posted by Ed Beroset on January 08, 1999 at 22:22:43:

> I have been working on figuring out how to gain very low level access to the

> infrared port on my Palm III. I haven't yet solved all of my problems, but on
> the way I wrote some words which you all might find useful as well. The
> DragonBall processor that powers the Palm III has ten 8-bit wide parallel I/O
> ports. These words are intended to simplify access to those ports.

> Comments are welcome!

Thanks, Ed. I posted them in the Quartus File Area.

Neal

- [File Area](#)

Free version and pay version

Posted by [William Tanksley](#) on January 08, 1999 at 18:15:27:

Quartus is WAY cool. I'm really enjoying getting back into Forth (except for the fact that my Grafitti surface has the dot-slash bug, AARGH). I had forgotten how much fun it was!

Anyhow, I remember how you had mentioned that there would be a free version of Quartus. I see a limited version available for download (and I'm using it), but there's no sign of a license or dismissal of any copyrights. Technically, anyone who so much as downloads the available version is in violation of your copyright and is open to a lawsuit from you (not that I think you would). Could you put some mention of the conditions for use of the free version into the license?

To my former understanding, the free version is just that -- unlimited use, so long as I don't try to make it act like the commercial version. Oh, and I should buy the commercial version when I have money and a potential project.

In the meantime, if I come up with anything interesting, I'll make it publicly available in source form -- perhaps helping the community is reasonable payment for the free version.

-Billy

Re: Free version and pay version

Posted by [Neal Bridges](#) on January 08, 1999 at 18:41:38:

In Reply to: *Free version and pay version* posted by William Tanksley on January 08, 1999 at 18:15:27:

> Quartus is WAY cool. I'm really enjoying getting back into Forth (except for
> the fact that my Grafitti surface has the dot-slash bug, AARGH). I had
> forgotten how much fun it was!

Glad to hear it!

> Anyhow, I remember how you had mentioned that there would be a free version of
> Quartus. I see a limited version available for download (and I'm using it),
but
> there's no sign of a license or dismissal of any copyrights. Technically,
> anyone who so much as downloads the available version is in violation of
your
> copyright and is open to a lawsuit from you (not that I think you would).
Could
> you put some mention of the conditions for use of the free version into the
> license?

The conditions are in the first paragraph of the license, "Evaluation":

"The Developer grants to the Licensee a non-exclusive royalty-free license to
use the 'evaluation' version of the Quartus Forth software free of charge for an
unlimited time for the purpose of evaluation for suitability to purchase a
registered copy of the Quartus Forth software."

> To my former understanding, the free version is just that -- unlimited use, so
> long as I don't try to make it act like the commercial version. Oh, and I
> should buy the commercial version when I have money and a potential project.

You are correct. I believe the license covers this.

> In the meantime, if I come up with anything interesting, I'll make it publicly
> available in source form -- perhaps helping the community is reasonable
payment
> for the free version.

I look forward to seeing what you come up with!

Neal

Re: Free version and pay version

Posted by [William Tanksley](#) on January 08, 1999 at 18:57:02:

In Reply to: *Re: Free version and pay version* posted by Neal Bridges on January 08,
1999 at 18:41:38:

> The conditions are in the first paragraph of the license, "Evaluation":
> "The Developer grants to the Licensee a non-exclusive royalty-free license to
> use the 'evaluation' version of the Quartus Forth software free of charge for
an
> unlimited time for the purpose of evaluation for suitability to purchase a
> registered copy of the Quartus Forth software."

Whoops. I read the license, but I missed that part for some reason. Perhaps
because of the LICENSE: header in big bold letters below it instead of above it.
Blush.

> > To my former understanding, the free version is just that -- unlimited use,
so
> > long as I don't try to make it act like the commercial version. Oh, and I
> > should buy the commercial version when I have money and a potential project.

> You are correct. I believe the license covers this.

Hmm. Okay. I feel kinda like "educational use" (learning Forth [again]) might not be covered by that... But as long as you don't feel that way, there's no problem.

But then, the whole reason to educate myself is to get ready to produce something useful, I hope.

Hmm, BMW (an ANSI Forth editor being developed on the NG) looks really cool. It might make a nice console for Quartus, with a few minor modifications to account for pen and grafitti. It'd be great to have a programmable editor...

> Neal

-Billy

Re: Free version and pay version

Posted by [Neal Bridges](#) on January 08, 1999 at 19:04:23:

In Reply to: *Re: Free version and pay version* posted by William Tanksley on January 08, 1999 at 18:57:02:

> > > To my former understanding, the free version is just that -- unlimited use,

> > so

> > > long as I don't try to make it act like the commercial version. Oh, and I

> > > should buy the commercial version when I have money and a potential project.

> > You are correct. I believe the license covers this.

> Hmm. Okay. I feel kinda like "educational use" (learning Forth [again]) might

> not be covered by that... But as long as you don't feel that way, there's no > problem.

The license doesn't prohibit learning while evaluating. :) "Unlimited" is a long time.

> But then, the whole reason to educate myself is to get ready to produce > something useful, I hope.

> Hmm, BMW (an ANSI Forth editor being developed on the NG) looks really cool. It

> might make a nice console for Quartus, with a few minor modifications to account

> for pen and grafitti. It'd be great to have a programmable editor...

I've been meaning to look at BMW more closely, and see if it has any provision for handling proportional fonts, such as are on the Palm. Can you tell if it does?

Neal

Re: Free version and pay version

Posted by [William Tanksley](#) on January 11, 1999 at 16:02:07:

In Reply to: *Re: Free version and pay version* posted by Neal Bridges on January 08, 1999 at 19:04:23:

> > Hmm, BMW (an ANSI Forth editor being developed on the NG) looks really cool.
> It
> > might make a nice console for Quartus, with a few minor modifications to
> account
> > for pen and grafitti. It'd be great to have a programmable editor...

> I've been meaning to look at BMW more closely, and see if it has any provision
> for handling proportional fonts, such as are on the Palm. Can you tell if it
> does?

My understanding is that it doesn't. I may be wrong.

There are two solutions, though: first, write a console driver (which would probably be a good idea anyhow, I'd like to play the Forth Sokoban :).

Second, since BMW is centered around paragraphs rather than lines, just fix its word wrap routines.

It would also be good to be able to grab past inputs from the Forth buffer and shove them into BMW, and push a paragraph from BMW into the Forth buffer for testing. It might even work to make BMW into part of the official Quartus.

It'll be a while before I can glance at these questions, though -- I've got too much homework again this week.

> Neal

-Billy

Forth development on the PC

Posted by Aaron Stein on January 07, 1999 at 20:33:39:

Do you have any plans to port the Quartus Forth development environment to the PC?

Re: Forth development on the PC

Posted by [Neal Bridges](#) on January 07, 1999 at 20:40:53:

In Reply to: *Forth development on the PC* posted by Aaron Stein on January 07, 1999 at 20:33:39:

> Do you have any plans to port the Quartus Forth development environment to the
> PC?

Outside of the Palm-specific features, Quartus Forth is a Standard Forth; what would you envision a desktop Quartus Forth providing?

Neal

Re: Forth development on the PC

Posted by Aaron Stein on January 07, 1999 at 20:48:11:

In Reply to: *Re: Forth development on the PC* posted by Neal Bridges on January 07, 1999 at 20:40:53:

> > Do you have any plans to port the Quartus Forth development environment to
the
> > PC?

> Outside of the Palm-specific features, Quartus Forth is a Standard Forth;
what
> would you envision a desktop Quartus Forth providing?

> Neal

Simply the means to develop Forth-based applications for the PalmPilot on the PC (I find the PalmPilot itself to be a less than ideal environment to develop on). The generated PRC files would then be run through Copilot.

Re: Forth development on the PC

Posted by [Neal Bridges](#) on January 07, 1999 at 21:04:44:

In Reply to: *Re: Forth development on the PC* posted by Aaron Stein on January 07, 1999 at 20:48:11:

> Simply the means to develop Forth-based applications for the PalmPilot on the
> PC (I find the PalmPilot itself to be a less than ideal environment to develop
> on). The generated PRC files would then be run through Copilot.

Certainly Quartus Forth will run well on the Palm OS Emulator (or under the older CoPilot). I'll provide a registration code to any registered user who wants to use the Emulator to develop.

However, I suspect you're suggesting a version that would run as a desktop app

and generate PRC files. Such a thing is certainly possible, but would at least double my current workload, so it isn't a priority for me at this time.

A point of interest, though: apparently the Palm OS Emulator is going to be enhanced soon so that it can be HotSync'd without the need for a null-modem external connection. That'll make it much easier to get text into the Emulator's Memo Pad, and hence help close the loop for desktop development of Pilot apps.

One of the virtues of Quartus Forth is that it does lend itself to development on-board the PalmPilot; Forth is concise, and each definition created can be immediately tested.

Neal

Re: Forth development on the PC

Posted by [Jim Hendricks](#) on January 08, 1999 at 13:44:17:

In Reply to: *Re: Forth development on the PC* posted by Neal Bridges on January 07, 1999 at 21:04:44:

Neal, I too had been tempted to ask this same question when I first started looking at Quartus. I never asked it because I figured I could just run Quartus in the emulator which gives me the advantage of a bigger screen and a keyboard. That was until I discovered how painful the emulators sync was. If the Emulator is going to get a cableless sync, then I don't see why the emu isn't a workable solution!

Off topic, I just want to thank you for a product well done! I will be registering to thank you in a meaningful way, I am just waiting for an expense account check to arrive so I can fund my more meaningful thank you. Keep up the good work but do get some time for yourself!

> > Simply the means to develop Forth-based applications for the PalmPilot on the
> > PC (I find the PalmPilot itself to be a less than ideal environment to develop
> > on). The generated PRC files would then be run through Copilot.

> Certainly Quartus Forth will run well on the Palm OS Emulator (or under
> the older CoPilot). I'll provide a registration code to any registered user
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> external connection. That'll make it much easier to get text into the
> Emulator's Memo Pad, and hence help close the loop for desktop development of
> Pilot apps.

> One of the virtues of Quartus Forth is that it does lend itself to development
> on-board the PalmPilot; Forth is concise, and each definition created can be
> immediately tested.

> Neal

Repairs to .txt files made

Posted by [Neal Bridges](#) on January 07, 1999 at 19:46:36:

There were three missing and one corrupt .txt file (tinynums.txt) in the earlier release of libtxt.zip. I've repaired them; the new files are available in the file area.

Neal

Re: Repairs to .txt files made

Posted by [Daryl Lee](#) on January 08, 1999 at 09:50:28:

In Reply to: *Repairs to .txt files made* posted by Neal Bridges on January 07, 1999 at 19:46:36:

> There were three missing and one corrupt .txt file (tinynums.txt) in the
> earlier
> release of libtxt.zip. I've repaired them; the new files are available in the
> file area.

I'm looking for a convenient way to update the library files when such a change is made. I am a Microsoft Outlook user, and my Hotsync process uses the Outlook conduit, not the Palm Desktop conduit. The process I'm using now is cumbersome in the extreme: unzip the file; manually compare the date on each file to the date in my Palm; for those that need updating, cut-and-paste the text into an Outlook Note; hot-sync; then go to the Palm and set new category on the memo from Unfiled to Forth.

Can someone suggest a more efficient mechanism?

Daryl

Re: Repairs to .txt files made

Posted by [Neal Bridges](#) on January 08, 1999 at 10:32:24:

In Reply to: *Re: Repairs to .txt files made* posted by Daryl Lee on January 08, 1999 at 09:50:28:

> I'm looking for a convenient way to update the library files when such a change
> is made. I am a Microsoft Outlook user, and my Hotsync process uses the
> Outlook conduit, not the Palm Desktop conduit. The process I'm using now is
> cumbersome in the extreme: unzip the file; manually compare the date on each
> file to the date in my Palm; for those that need updating, cut-and-paste the
> text into an Outlook Note; hot-sync; then go to the Palm and set new category
> on the memo from Unfiled to Forth.

> Can someone suggest a more efficient mechanism?

Can you tell me what import options Outlook provides for getting a series of memos in at once?

The other thing I can do is announce each memo when it's changed; then you'll only have to update one at a time.

Neal

Re: Repairs to .txt files made

Posted by [Daryl Lee](#) on January 08, 1999 at 10:48:55:

In Reply to: *Re: Repairs to .txt files made* posted by Neal Bridges on January 08, 1999 at 10:32:24:

> > Can someone suggest a more efficient mechanism?
> Can you tell me what import options Outlook provides for getting a series of
> memos in at once?

They have a long list of formats they allegedly support (CSV, TSV, Excel, etc...). I tried the Tab Separated Values (Windows) and the import function puked: "could not find File Access Engine DLL; available from ValuPack".

> The other thing I can do is announce each memo when it's changed; then you'll
> only have to update one at a time.

That would be good, but what would also be good would be to add to the zip file a list of which files changed since the last one.

Daryl

Re: Repairs to .txt files made

Posted by [Neal Bridges](#) on January 08, 1999 at 18:43:36:

In Reply to: *Re: Repairs to .txt files made* posted by Daryl Lee on January 08, 1999 at 10:48:55:

> > The other thing I can do is announce each memo when it's changed; then you'll

> > only have to update one at a time.

> That would be good, but what would also be good would be to add to the zip file

> a list of which files changed since the last one.

Will do.

Neal

XT>NAME

Posted by [Erwin Schomburg](#) on January 07, 1999 at 00:37:28:

I can SEE fot what this word will be used, but for those playing around or working on theyr own projects: Its clear but not obvious that the address retrieved via this word is a codespaceaddress, a simple TYPE with the results will cause a fatal.

/Erwin

Re: XT>NAME

Posted by [Neal Bridges](#) on January 07, 1999 at 00:39:45:

In Reply to: *XT>NAME* posted by Erwin Schomburg on January 07, 1999 at 00:37:28:

> I can SEE fot what this word will be used, but for those playing around
> or working on theyr own projects: Its clear but not obvious that the address
> retrieved via this word is a codespaceaddress, a simple TYPE with the results
> will cause a fatal.

Yes it will. The documentation in the manual indicates that it's a codespace address; I'll add stronger words ;)

Neal

Quartus Forth File Area Update

Posted by [Neal Bridges](#) on January 07, 1999 at 00:09:16:

I've just gone through the Quartus Forth File Area and ensured that all library files are available there; the order of some files has changed, so don't be alarmed if things have moved.

The library has grown quite a bit since its inception. I'll be adding categories to the library soon, to better organize what's provided.

Neal

Library .txt files now available in a .zip

Posted by [Neal Bridges](#) on January 06, 1999 at 22:30:58:

By request! Library memo files (from library.mpa in the Quartus Forth distribution) are now available as separate .txt files, in *libtxt.zip* in the Quartus Forth File Area.

Neal

- [File Area](#)

Re: Library .txt files now available in a .zip

Posted by [Carl Jacobsen](#) on January 07, 1999 at 18:40:15:

In Reply to: *Library .txt files now available in a .zip* posted by Neal Bridges on January 06, 1999 at 22:30:58:

> By request! Library memo files (from library.mpa in the Quartus Forth
> distribution) are now available as separate .txt files, in *libtxt.zip*

Hmm... I had originally installed the memos from library.mpa at home on Win98, and now finding libtxt.zip, I decided to sync it from here at work (on BSD/OS), to get any updates that had been made. Then I thought, "Oh, heck, you've got the memos backed up to text files already, why not diff the two to see what has changed." Well, I saw no updated libraries (no problem in itself), but I found that the following library files don't seem to exist in libtxt.zip:

Ver, toolkit, trig, turtle, zstrings

is this right? Are these no longer used, or is this an oversight? (Or am I just losing my mind?) As well, it looks like tinynums has been truncated from 102 lines to 15 in libtxt.zip.

Just a heads up,

-- Carl

Re: Library .txt files now available in a .zip

Posted by [Neal Bridges](#) on January 07, 1999 at 19:33:51:

In Reply to: *Re: Library .txt files now available in a .zip* posted by Carl Jacobsen on January 07, 1999 at 18:40:15:

> > By request! Library memo files (from library.mpa in the Quartus Forth
> > distribution) are now available as separate .txt files, in
libtxt.zip

> Hmm... I had originally installed the memos from library.mpa at home on
Win98,

> and now finding libtxt.zip, I decided to sync it from here at work (on
BSD/OS),

> to get any updates that had been made. Then I thought, "Oh, heck, you've got
> the memos backed up to text files already, why not diff the two to see what
> has changed." Well, I saw no updated libraries (no problem in itself), but
> I found that the following library files don't seem to exist in libtxt.zip:

> Ver, toolkit, trig, turtle, zstrings

> is this right? Are these no longer used, or is this an oversight? (Or am I
> just losing my mind?) As well, it looks like tinynums has been truncated from
> 102 lines to 15 in libtxt.zip.

Thanks for the heads up, Carl. I automated the conversion from .CSV to .TXT on
my side; it looks like the .CSV wasn't created properly from the Palm Desktop
software. Chalk it up to my overly-trusting nature. I'll make the necessary
repairs.

Neal

Motorola-syntax assembler -- any interest?

Posted by [Neal Bridges](#) on January 06, 1999 at 16:17:20:

I've done some preliminary work at allowing Motorola syntax in the inline
assembler, as an additional mode beyond the prefix and postfix modes already
supported. It can be done; my question is whether anybody really needs or wants
it.

Neal

Re: Motorola-syntax assembler -- any interest?

Posted by [Tony Sanders](#) on January 08, 1999 at 13:42:47:

In Reply to: *Motorola-syntax assembler -- any interest?* posted by Neal Bridges on January 06, 1999 at 16:17:20:

> I've done some preliminary work at allowing Motorola syntax in the inline
> assembler, as an additional mode beyond the prefix and postfix modes already
> supported. It can be done; my question is whether anybody really needs or
wants
> it.

I would choose more assembler docs and examples over another syntax,
if your going to spend time on it.

Creator ID

Posted by [Daryl Lee](#) on January 06, 1999 at 13:13:07:

Before I suck it up and spend my kids' inheritance on the registered version of Quartus, I have a question about CreatorID. I get the impression from what I've been able to browse that each app I create for my little Palm III will need a CreatorID that I have to register with 3Com. Is that true? Is it a big deal, or just a quick form to fill out?

Daryl

Re: Creator ID

Posted by [Neal Bridges](#) on January 06, 1999 at 13:58:07:

In Reply to: *Creator ID* posted by Daryl Lee on January 06, 1999 at 13:13:07:

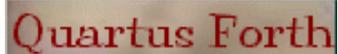
> Before I suck it up and spend my kids' inheritance on the registered version
of
> Quartus, I have a question about CreatorID. I get the impression from what
> I've been able to browse that each app I create for my little Palm III will
> need a CreatorID that I have to register with 3Com. Is that true? Is it a
big
> deal, or just a quick form to fill out?

Very quick form. Nothing to it. It's just a mechanism they maintain to ensure non-duplication of IDs in released apps.

Neal

If you're linking to the Quartus Forth page...

Posted by [Neal Bridges](#) on January 06, 1999 at 10:16:48:



...and you want a graphical button, here's one.

Neal

Library files into Linux

Posted by [Dave Steele](#) on January 06, 1999 at 09:18:40:

Any chance of getting the library files as separate text files, so that I can transfer them using Linux?

Re: Library files into Linux

Posted by [Neal Bridges](#) on January 06, 1999 at 09:53:41:

In Reply to: *Library files into Linux* posted by Dave Steele on January 06, 1999 at 09:18:40:

> Any chance of getting the library files as separate text files, so that I can
> transfer them using Linux?

Every chance. I'll prepare that later today and make it available in the File Area and as part of the release .zip.

Neal

Quartus Forth 1.0.4 now available!

Posted by [Neal Bridges](#) on January 05, 1999 at 20:54:28:

The evaluation version of Quartus Forth 1.0.4 is now available in the Quartus Forth File Area. I've sent out updates to registered users.

New in 1.0.4:

Function table words: select/xt/end-select
name -- returns the names of Forth definitions

The manual has also been updated.

Enjoy!

Neal

- [File Area](#)

Re: Quartus Forth 1.0.4 now available!

Posted by [Erwin Schomburg](#) on January 06, 1999 at 01:43:18:

In Reply to: *Quartus Forth 1.0.4 now available!* posted by Neal Bridges on January 05, 1999 at 20:54:28:

> The evaluation version of Quartus Forth 1.0.4 is now available in the Quartus
> Forth File Area. I've sent out updates to registered users.

> New in 1.0.4:

> Function table words: select/xt/end-select
> name -- returns the names of Forth definitions

> The manual has also been updated.

> Enjoy!

> Neal

Name is missing in (my) registered version!

/Erwin

Re: Quartus Forth 1.0.4 now available!

Posted by [Neal Bridges](#) on January 06, 1999 at 09:50:52:

In Reply to: *Re: Quartus Forth 1.0.4 now available!* posted by Erwin Schomburg on January 06, 1999 at 01:43:18:

> Name is missing in (my) registered version!

Thanks, Erwin. It's not missing; it's just called xt>name. My typo. I'll fix it.

Neal

New Things

Posted by [Neal Bridges](#) on January 05, 1999 at 19:16:04:

I'm working on porting a disassembler, and adding various enhancements to the kernel. Let me know how you're doing with the new version!

Neal

serial manager

Posted by [Nelson](#) on January 05, 1999 at 01:22:13:

can I use Quartus Forth to access/interface with the serial port.

Re: serial manager

Posted by [Neal Bridges](#) on January 05, 1999 at 01:30:33:

In Reply to: *serial manager* posted by Nelson on January 05, 1999 at 01:22:13:

> can I use Quartus Forth to access/interface with the serial port.

Yes; Wade Johnson did quite a bit of work on this with my PilotFORTH, last year. The link is below. It should easily port to Quartus Forth.

Neal

- [Wade Johnson's PilotFORTH code](#)
-

ISBN now available in the File Area.

Posted by [Neal Bridges](#) on January 05, 1999 at 01:12:14:

ISBN, a Quartus Forth program, is available in the Quartus File Area. ISBN displays International Standard Book Number barcodes, such as are found on the covers of most books. It accepts the first 9 digits, correctly calculates the checksum, and displays the result.

isbn.zip contains the executable; I'll post the source soon!

Neal

EKEY and event handling

Posted by [Ken Butterfield](#) on January 04, 1999 at 18:54:40:

This message is feedback on QUARTUS and contains a generic question on event handling.

I have succeeded in making a simple application program that uses EKEY to identify pen events and COORD@ to locate the pen. It extends your code snippet for identifying pen events from your documentation.

I am really pleased with the EKEY method for catching events. It worked well and is much simpler than the 'simple handler' routine in the files area.

My question pertains to the events not handled but returned by EKEY. I was surprised that graffitii commands, menus, hardware buttons, etc. worked when all I was doing was handling the up down and move pen events. My reading of the 3com manuals led me to believe something like the 'simple handler' would be required so that unhandled events would be passed back to the system handler. You have worked magic!!! Are there any pitfalls if I start handling other events?

Congratulations on a wonderful development tool!

Ken B

Re: EKEY and event handling

Posted by [Neal Bridges](#) on January 04, 1999 at 21:13:58:

In Reply to: *EKEY and event handling* posted by Ken Butterfield on January 04, 1999 at 18:54:40:

> This message is feedback on QUARTUS and contains a generic question on event
> handling.

> I have succeeded in making a simple application program that uses EKEY to
> identify pen events and COORD@ to locate the pen. It extends your code snippet
> for identifying pen events from your documentation.

> I am really pleased with the EKEY method for catching events. It worked well
and
> is much simpler than the 'simple handler' routine in the files area.

I very much agree. There are occasions where 'simple-handler' is useful also, so I've left it by way of illustration.

> My question pertains to the events not handled but returned by EKEY. I was
> surprised that graffitii commands, menus, hardware buttons, etc. worked when
all

> I was doing was handling the up down and move pen events. My reading of the
3com

> manuals led me to believe something like the 'simple handler' would be
required

> so that unhandled events would be passed back to the system handler. You have

> worked magic!!! Are there any pitfalls if I start handling other events?

No pitfalls. Handle away. Only those events not handled by the system are returned by EKEY; most of the work is done for you by the Quartus Forth kernel.

> Congratulations on a wonderful development tool!

Thanks!

Neal

Re: EKEY and event handling

Posted by Ken Butterfield on January 06, 1999 at 11:43:43:

In Reply to: *Re: EKEY and event handling* posted by Neal Bridges on January 04, 1999 at 21:13:58:

Hi Neal,

> > My question pertains to the events not handled but returned by EKEY. I was
> > surprised that graffitii commands, menus, hardware buttons, etc. worked when
> all

> > I was doing was handling the up down and move pen events. My reading of the
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> required

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> > worked magic!!! Are there any pitfalls if I start handling other events?

> No pitfalls. Handle away. Only those events not handled by the system are
> returned by EKEY; most of the work is done for you by the Quartus Forth
kernel.

> > Congratulations on a wonderful development tool!

> Thanks!

> Neal

OK I think I am getting it! Events returned by EKEY that I don't handle are just 'lost'. Also to capture the hard buttons I would have to use something like the simple handler since EKEY does not give me those events.

Now a related question How do I create a 'User event' I take it that such an event is returned by EKEY. To answer part of my own question there is probably a SetUserEvent systrap, but what is it?

Thanks again, Ken Butterfield

Re: EKEY and event handling

Posted by [Neal Bridges](#) on January 06, 1999 at 12:31:19:

In Reply to: *Re: EKEY and event handling* posted by Ken Butterfield on January 06, 1999 at 11:43:43:

> OK I think I am getting it! Events returned by EKEY that I don't handle are
> just 'lost'. Also to capture the hard buttons I would have to use something
like
> the simple handler since EKEY does not give me those events.

PageUp and PageDown don't need special handling. To handle the other
(round) hard buttons, you can mask them with the Palm OS routine KeySetMask so
that they don't have their normal function, and then they'll be passed to you as
events from EKEY. You have to remember to unmask them before the program exits;
see the BYE-handling code in the manual for an example of how to run special
code when your application exits.

> Now a related question How do I create a 'User event' I take it that such an
> event is returned by EKEY. To answer part of my own question there is probably
a
> SetUserEvent systrap, but what is it?

The Palm OS routine you want is EvtAddEventToQueue. For example:

```
hex  
create ByeEvt 4 , 0 , 0 , 0 , 108 , 0 , 8 ,  
decimal
```

```
ByeEvt >abs EvtAddEventToQueue
```

Neal

DocInclude

Posted by [Mike Will](#) on January 04, 1999 at 09:43:36:

I successfully used DocInclude (thanks Erwin/Neal) to load a very large source
file from several years back. Worked perfectly. I'm impressed.

One problem is that if there is any error evaluating incoming source, you have
no idea where where the load tripped up at, and the 'Go' command merely takes
you to the last known location in a normal memo file. (hint hint :)

So, here's a quick addition (1 line) that at least gives you a percentage
completed update during a Doc load so you'll have some idea where to look for
the problem (file DocInc):

```
\ Evaluate the Doc file:  
DmNumRecords dup #records !  
( -- #recs )  
0 EvalLen !  
1 do  
  
i 100 #records @ */ . ( show percentage loaded )
```

```
i dup record# ! GetRecord
\ Skip bookmark records:
```

Cheers,
Mike

Re: DocInclude

Posted by [Erwin Schomburg](#) on January 04, 1999 at 10:44:20:

In Reply to: *DocInclude* posted by Mike Will on January 04, 1999 at 09:43:36:

```
> I successfully used DocInclude (thanks Erwin/Neal) to load a very large source
> file from several years back. Worked perfectly. I'm impressed.
> One problem is that if there is any error evaluating incoming source, you have
> no idea where where the load tripped up at, and the 'Go' command merely takes
> you to the last known location in a normal memo file. (hint hint :)
> So, here's a quick addition (1 line) that at least gives you a percentage
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> the problem (file DocInc):
```

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> \ Evaluate the Doc file:
> DmNumRecords dup #records !
> ( -- #recs )
> 0 EvalLen !
> 1 do

> i 100 #records @ */ . ( show percentage loaded )
```

```
> i dup record# ! GetRecord
> \ Skip bookmark records:
```

```
>
> Cheers,
> Mike
```

Ooops, docinclude was thought about way before Neal had the "GO" item implemented. Maybe I can do something to make it transparent, i.e. make the decompression buffer use a memo instead of dynamic memory. Let me check, if it works I'll come back before the week ends.

/Erwin

Re: DocInclude

Posted by [Neal Bridges](#) on January 04, 1999 at 10:49:42:

In Reply to: *Re: DocInclude* posted by Erwin Schomburg on January 04, 1999 at 10:44:20:

> Oops, docinclude was thought about way before Neal had the "GO" item
> implemented. Maybe I can do something to make it transparent, i.e. make the
> decompression buffer use a memo instead of dynamic memory. Let me check, if it
> works I'll come back before the week ends.

I like the idea of having Go to Last Error work with Doc files. It's probably easier for me to handle it from my end than it is to make Doc generate a junk memo; let me check into it.

Neal

Re: DocInclude

Posted by Erwin on January 07, 1999 at 03:30:29:

In Reply to: *Re: DocInclude* posted by Neal Bridges on January 04, 1999 at 10:49:42:

> > Oops, docinclude was thought about way before Neal had the "GO" item
> > implemented. Maybe I can do something to make it transparent, i.e. make the
> > decompression buffer use a memo instead of dynamic memory. Let me check, if
> > it
> > works I'll come back before the week ends.

> I like the idea of having Go to Last Error work with Doc files. It's probably
> easier for me to handle it from my end than it is to make Doc generate a junk
> memo; let me check into it.

> Neal

OK, I'll leave it for now. It could have been kind of easy were it not in the nature of compressed Docs that it is possible to break around records in the middle of a word (a condition which is taken care of no brains included by the existing module).

/Erwin

Re: DocInclude

Posted by [Mike Will](#) on January 07, 1999 at 09:53:35:

In Reply to: *Re: DocInclude* posted by Erwin on January 07, 1999 at 03:30:29:

> OK, I'll leave it for now. It could have been kind of easy were it not in the
> nature of compressed Docs that it is possible to break around records in the
> middle of a word (a condition which is taken care of no brains included by
the
> existing module).
> /Erwin

Another related thought. If possible, it would be nice to have the appname of
the DOC viewer of choice as a variable somewhere in DOC.4th instead of assuming
Aportis. We have quite a choice of good viewers these days.

Mike

Re: DocInclude

Posted by Erwin on January 07, 1999 at 11:00:00:

In Reply to: *Re: DocInclude* posted by Mike Will on January 07, 1999 at 09:53:35:

>
> Another related thought. If possible, it would be nice to have the appname of
> the DOC viewer of choice as a variable somewhere in DOC.4th instead of
assuming
> Aportis. We have quite a choice of good viewers these days.
> Mike

I don't think its easy or even possible to locate the last error position
through an actual doc-reader, I assume it would be an reader-independent text
window showing the text on and around the error (plus maybe a percentage of
relative position in the doc-database in question), then you could switch-hack
into your actual reader-editor to correct.

/Erwin

Re: DocInclude

Posted by [Neal Bridges](#) on January 07, 1999 at 11:14:54:

In Reply to: *Re: DocInclude* posted by Erwin on January 07, 1999 at 11:00:00:

> I don't think its easy or even possible to locate the last error position
> through an actual doc-reader, I assume it would be an reader-independent text
> window showing the text on and around the error (plus maybe a percentage of
> relative position in the doc-database in question), then you could switch-hack
> into your actual reader-editor to correct.

It's possible to jump to the error location just as it is with the MemoPad; it's just a little complex. Then there's the matter of choosing a viewer/editor, etc.; starts to get a bit more baroque than I'd like. But I'm looking into it.

Neal

Re: DocInclude

Posted by [Mike Will](#) on January 07, 1999 at 16:53:38:

In Reply to: *Re: DocInclude* posted by Neal Bridges on January 07, 1999 at 11:14:54:

> just a little complex. Then there's the matter of choosing a viewer/editor,
> etc.; starts to get a bit more baroque than I'd like. But I'm looking into
it.

> Neal

Well, as I always say, If it ain't baroque, don't fix it.
Please don't work away on this for my benefit. I'm doing great with DocInclude as it is with my little progress counter. Judging from the timestamps on your messages, you're working too hard these days anyway!

Mike

Re: DocInclude

Posted by Erwin on January 07, 1999 at 17:16:31:

In Reply to: *Re: DocInclude* posted by Mike Will on January 07, 1999 at 16:53:38:

> > just a little complex. Then there's the matter of choosing a viewer/editor,
> > etc.; starts to get a bit more baroque than I'd like. But I'm looking into
> it.

> > Neal

> Well, as I always say, If it ain't baroque, don't fix it.
> Please don't work away on this for my benefit. I'm doing great with DocInclude
> as it is with my little progress counter. Judging from the timestamps on your

> messages, you're working too hard these days anyway!

> Mike

"A little complex" ha, I called it "not easy" but I'm no British-ish diplomat. But if you are into it and seem to know whats going on, you could restrict yourself to the editable Doc-reader/editors (SmartDoc, QED) and make your life easy(er) from there. For Mike: never put up a challenge and then say you really don't need it when people are almost there 8-)

/Erwin

Re: DocInclude

Posted by [Neal Bridges](#) on January 07, 1999 at 17:04:36:

In Reply to: *Re: DocInclude* posted by Mike Will on January 07, 1999 at 16:53:38:

> > just a little complex. Then there's the matter of choosing a viewer/editor,
> > etc.; starts to get a bit more baroque than I'd like. But I'm looking into
> it.

> > Neal

> Well, as I always say, If it ain't baroque, don't fix it.
> Please don't work away on this for my benefit. I'm doing great with DocInclude
> as it is with my little progress counter. Judging from the timestamps on your
> messages, you're working too hard these days anyway!

Launching a project is certainly no small undertaking. A week in the tropics would be nice.

My first few forays into launching a Doc reader have been unsuccessful; it's on the list, though, and I'll come back to it.

Neal

MacPack question.

Posted by [Neal Bridges](#) on January 04, 1999 at 04:05:32:

Hi folks. For those of you running the MacPack -- is there a way to import .mpa files, such as library.mpa? I've got a user having difficulties. I had made the assumption the .mpa format was portable between platforms; if anyone can confirm or deny that, I'd appreciate it.

Thanks,
Neal

Re: MacPack question.

Posted by [Dennis Groves](#) on January 04, 1999 at 14:34:50:

In Reply to: *MacPack question.* posted by Neal Bridges on January 04, 1999 at 04:05:32:

actually I have to push it over to my PC to use that format. I am am unique in that I have a PC, Mac and Linux box, but the PC seems to be the only thing that is worth using with a palm. The Mac is second best then linux. The features in the PC software are twice what they are on the other platforms, but I would try a file import on the mac.

Dennis

Re: MacPack question.

Posted by [Neal Bridges](#) on January 04, 1999 at 17:10:53:

In Reply to: *Re: MacPack question.* posted by Dennis Groves on January 04, 1999 at 14:34:50:

> actually I have to push it over to my PC to use that format. I am am unique in
> that I have a PC, Mac and Linux box, but the PC seems to be the only thing that
> is worth using with a palm. The Mac is second best then linux. The features in
> the PC software are twice what they are on the other platforms, but I would try a
> file import on the mac.

Thanks, Dennis. Is the .CSV format supported for import on the Mac desktop software?

I think firing up my IIsi is probably in order. The Mac people seem to have a hard enough time of it with the Palm; least I can do is meet them halfway.

Neal

Re: MacPack question.

Posted by [Dennis Groves](#) on January 05, 1999 at 15:04:15:

In Reply to: *Re: MacPack question.* posted by Neal Bridges on January 04, 1999 at 17:10:53:

> Thanks, Dennis. Is the .CSV format supported for import on the Mac desktop

> software?

I am running a beta of Palm desktop v 2.0, and it doesn't recognise the file when you try and do a file import (it doesn't show up at all in the file picker dialog.)

Neither can you drag and drop the file into the notes.

Bummer I thought that MAC palm desktop wold handle this properly.

I will send a bug report.

Dennis

Re: MacPack question.

Posted by [Neal Bridges](#) on January 05, 1999 at 15:17:58:

In Reply to: *Re: MacPack question.* posted by Dennis Groves on January 05, 1999 at 15:04:15:

>

> > Thanks, Dennis. Is the .CSV format supported for import on the Mac desktop
> > software?

> I am running a beta of Palm desktop v 2.0, and it doesn't recognise the file when
> you try and do a file import (it doesn't show up at all in the file picker
> dialog.)

> Neither can you drag and drop the file into the notes.

> Bummer I thought that MAC palm desktop wold handle this properly.

> I will send a bug report.

Is that the CSV format you're talking about, or the MPA?

Neal

Re: MacPack question.

Posted by [Dennis Groves](#) on January 05, 1999 at 22:55:08:

In Reply to: *Re: MacPack question.* posted by Neal Bridges on January 05, 1999 at 15:17:58:

MPA, I never tried the CSV as I have no CSV files, well at least on my MAC I have no CSV files.

Dennis

> Is that the CSV format you're talking about, or the MPA?

> Neal

Interlog service outage

Posted by [Neal Bridges](#) on January 04, 1999 at 03:34:31:

Hi folks. Just back online after an outage at interlog, my service provider. All seems to be well again at this point.

Neal

Quartus Forth 1.0.3 now available.

Posted by [Neal Bridges](#) on January 03, 1999 at 19:01:54:

Version 1.0.3 is now available in both evaluation and registered versions.

As usual, the evaluation version is available in the Quartus Forth File Area, and the registered version is available via the registration process.

2!a was missing from the set of 32-bit memory access words; I've added it.

If you haven't downloaded the manual recently, do so; there are new sections (C Typedef Equivalents, and Pronunciation of Forth Words), and modifications to existing sections.

Enjoy!

Neal

- [File Area](#)

For sale at last!

Posted by [Neal Bridges](#) on January 03, 1999 at 18:28:51:

It's official! You can buy Quartus Forth. Just click on the link below or get there from the 'How to Register' page in the manual, and you're off.

Neal

- [Buy Quartus Forth!](#)

Yea! Thank you!

Posted by [Kip DeGraaf](#) on January 04, 1999 at 21:55:55:

In Reply to: *For sale at last!* posted by Neal Bridges on January 03, 1999 at 18:28:51:

> It's official! You can buy Quartus Forth. Just click on the link below or get

> there from the 'How to Register' page in the manual, and you're off.

And such quick service too. Thank you again Neal for your hard work.

It feels good to be able to thank you with something more than just kudos.

Re: Yea! Thank you!

Posted by Neal Bridges on January 04, 1999 at 22:09:39:

In Reply to: *Yea! Thank you!* posted by Kip DeGraaf on January 04, 1999 at 21:55:55:

> > It's official! You can buy Quartus Forth. Just click on the link below or
> get

> > there from the 'How to Register' page in the manual, and you're off.

> And such quick service too. Thank you again Neal for your hard work.

> It feels good to be able to thank you with something more than just kudos.

Much appreciated, both the kudos and the registration. Let me know how it goes!

Neal

Re: For sale at last! - Baby is mine

Posted by [Branko Znuderl](#) on January 04, 1999 at 05:56:57:

In Reply to: *For sale at last!* posted by Neal Bridges on January 03, 1999 at 18:28:51:

> It's official! You can buy Quartus Forth. Just click on the link below or get
> there from the 'How to Register' page in the manual, and you're off.

Yea, it's working.... so... baby is mine.... or will be
when I receive registered version.

Neal, I wish you many buyers :)

Branko Znuderl

Re: For sale at last! - Baby is mine

Posted by [Neal Bridges](#) on January 04, 1999 at 10:14:45:

In Reply to: *Re: For sale at last! - Baby is mine* posted by Branko Znuderl on January 04, 1999 at 05:56:57:

> > It's official! You can buy Quartus Forth. Just click on the link below or get

> > there from the 'How to Register' page in the manual, and you're off.

> Yea, it's working.... so... baby is mine.... or will be

> when I receive registered version.

> Neal, I wish you many buyers :)

Thanks, Branko. And thanks for your registration!

Neal

Comments in Programs - Warning to Dummies Like Me

Posted by [Lou Solomon](#) on January 03, 1999 at 16:32:27:

Neal:

I just spent about 30 minutes debugging some words when I found out that parts of the definitions were inadvertantly considered comments. I tend to use the backslash rest-of-line comment, and it seems that at some point in editing the definition, a word wound up being considered part of the comment, due to the wrapping of the 'comment' line to the next screen line, and then, subsequent edits to that 'second' screen line, (like: changing it from the end of the previous comment, to an actual word.)

Do you know of anyway of easily identifying actual lines in the memo pad (those that end with line feeds, vs. screen wraps (ie: 'soft' line feeds)...

Would you know if, when using the smallest screen font, the end of each line is truly a line feed? (note that I do tend to use the 'bold' font, though I do switch depending upon how much code I want to see on the screen at one time).

Assuming, there is no easy way to tell the end of a physical line, would it be prudent to use only the parentheses comments (and possibly add this recommendation/suggestion to your excellent documentation).

Thanks in advance...

Lou

PS: I hope you find my feedback somewhat useful... if not, please feel free to say so... I'd rather you work on Quartus 2 than answering my questions...

Re: Comments in Programs - Warning to Dummies Like Me

Posted by [Neal Bridges](#) on January 03, 1999 at 17:32:39:

In Reply to: *Comments in Programs - Warning to Dummies Like Me* posted by Lou Solomon on January 03, 1999 at 16:32:27:

> Neal:

> I just spent about 30 minutes debugging some words when I found out that parts
> of the definitions were inadvertantly considered comments. I tend to use the
> backslash rest-of-line comment, and it seems that at some point in editing the
> definition, a word wound up being considered part of the comment, due to the
> wrapping of the 'comment' line to the next screen line, and then, subsequent
> edits to that 'second' screen line, (like: changing it from the end of the
> previous comment, to an actual word.)

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> Would you know if, when using the smallest screen font, the end of each line
is
> truly a line feed? (note that I do tend to use the 'bold' font, though I do
> switch depending upon how much code I want to see on the screen at one time).

There's no marker on-screen in the memopad to show the linefeeds. When
commenting-out code in a definition, I use the parentheses; that way there's no
confusion such as you've encountered.

> Assuming, there is no easy way to tell the end of a physical line, would it be
> prudent to use only the parentheses comments (and possibly add this
> recommendation/suggestion to your excellent documentation).

A good thought. Thanks, Lou.

> Lou
> PS: I hope you find my feedback somewhat useful... if not, please feel free to
> say so... I'd rather you work on Quartus 2 than answering my questions...

:) Not to worry, I'm pleased to do both. Your feedback is certainly useful.

Neal

Re: Comments in Programs - Warning to Dummies Like Me

Posted by [Lou Solomon](#) on January 03, 1999 at 18:07:45:

In Reply to: *Re: Comments in Programs - Warning to Dummies Like Me* posted by Neal Bridges on January 03, 1999 at 17:32:39:

Neal:

Speaking of comments in code, I have grown accustomed to using the [IF] & [THEN] conditional compilation words (defined in tools-ext) to block out sections of code that I don't want compiled, right then. In fact, in one instance I have used this to enter a 'paragraph' of comments. It is much easier than using a backslash at the beginning of each line, or having matching parens on each line.

1. Comments in parens don't seem to span more than one line. Is this normal behavior? (I guess I thought everything until the next) is considered a comment?

2. You might want to indicate the [IF] & [THEN] in any changes to your documentation, especially for programmers coming from 'C' and the like, which have block comments.

2. I tried quickly to define begin_comment and end_comment words....ie:

```
: begin_comment_section 0 [if] ;  
: end_comment_section [then] ;
```

It didn't seem to work... My forth is getting pretty good in thinking about it like a 3GL, but I've particularly avoided, as much as possible, the compile/runtime issues (I know I can't be a true Forth programmer without doing all the postpones/immediates, etc., but suprisingly, so far, I've avoided it in writing my 'database' :-)... Just curious.. what did I do wrong in the above definitions?

Lou

Re: Comments in Programs - Warning to Dummies Like Me

Posted by [Neal Bridges](#) on January 03, 1999 at 18:25:45:

In Reply to: *Re: Comments in Programs - Warning to Dummies Like Me* posted by Lou Solomon on January 03, 1999 at 18:07:45:

> Speaking of comments in code, I have grown accustomed to using the [IF] &
> [THEN] conditional compilation words (defined in tools-ext) to block out
> sections of code that I don't want compiled, right then. In fact, in one
> instance I have used this to enter a 'paragraph' of comments. It is much

> easier than using a backslash at the beginning of each line, or having matching
> parens on each line.

That's a common use of [IF] and [THEN].

> 1. Comments in parens don't seem to span more than one line. Is this normal
> behavior? (I guess I thought everything until the next) is considered a
> comment?

> 2. You might want to indicate the [IF] & [THEN] in any changes to your
> documentation, especially for programmers coming from 'C' and the like, which
> have block comments.

Good thought.

> 2. I tried quickly to define begin_comment and end_comment words....ie:

```
> : begin_comment_section 0 [if] ;  
> : end_comment_section [then] ;
```

[IF] and [THEN] are immediate words. What you want to do is this:

```
: comment 0 postpone [IF] ; immediate  
: end-comment postpone [THEN] ; immediate
```

Then you'll be able to use them for comments within compiled code, also, though
if you find yourself needing a block of commentary within a word, I'd say
there's an opportunity to factor.

Neal

Re: Comments in Programs - Warning to Dummies Like Me

Posted by [Erwin Schomburg](#) on January 04, 1999 at 04:39:36:

In Reply to: *Re: Comments in Programs - Warning to Dummies Like Me* posted by Neal
Bridges on January 03, 1999 at 18:25:45:

```
> : comment 0 postpone [IF] ; immediate  
> : end-comment postpone [THEN] ; immediate
```

> Then you'll be able to use them for comments within compiled code, also,
though
> if you find yourself needing a block of commentary within a word, I'd say
> there's an opportunity to factor.

> Neal

As the ost common use for this construct is to comment out test sections for
utility wordsets, I suggest the following:

```
: comment 0= postpone [IF] ; immediate  
: end-comment postpone [THEN] ; immediate
```

.
.

```
\ test section
0 comment
\ use
\ 0 comment to run test section,
\ 1 comment to hide test section.
test
.
.
end-comment
```

Re: Comments in Programs - Warning to Dummies Like Me

Posted by [Neal Bridges](#) on January 04, 1999 at 04:55:33:

In Reply to: *Re: Comments in Programs - Warning to Dummies Like Me* posted by Erwin Schomburg on January 04, 1999 at 04:39:36:

```
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>
> .
> .
> \ test section
> 0 comment
> \ use
> \ 0 comment to run test section,
> \ 1 comment to hide test section.
> test
> .
> .
> end-comment
```

If used to exclude blocks of text, I would simply use

```
0 [IF]
[THEN]
```

and not alias them to new names. This seems to be fairly standard practice.

Neal

Re: Comments in Programs - Warning to Dummies Like Me

Posted by Erwin on January 04, 1999 at 06:54:03:

In Reply to: *Re: Comments in Programs - Warning to Dummies Like Me* posted by Neal Bridges on January 04, 1999 at 04:55:33:

> > As the ost common use for this construct is to comment out test sections for
> > utility wordsets, I suggest the following:

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> > .
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> > 0 comment
> > \ use
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> > \ 1 comment to hide test section.
> > test
> > .
> > .
> > end-comment

> If used to exclude blocks of text, I would simply use

> 0 [IF]
> [THEN]

> and not alias them to new names. This seems to be fairly standard practice.

> Neal

Of course you are right if you do it more than once a week and do not constantly forget how to make them dang square brackets, that is.

/Erwin

Special symbols: Try CharHack

Posted by [Neal Bridges](#) on January 04, 1999 at 10:13:16:

In Reply to: *Re: Comments in Programs - Warning to Dummies Like Me* posted by Erwin on January 04, 1999 at 06:54:03:

> Of course you are right if you do it more than once a week and do not
> constantly
> forget how to make them dang square brackets, that is.

I suggest you try CharHack from the Online Resources page; it's a neat little popup for entering special symbols.

Neal

NEEDS bug? and String Question.

Posted by [Lou Solomon](#) on January 03, 1999 at 14:54:16:

Neal:

Three things:

1. In one of my files, I put two 'needs' commands on one line, ex:
.(include in standard file stuff)
needs datamgr needs ids

It seems that the IDS file never gets included in. When I move it to the next line, ie:
needs datamgr
needs ids
it works fine.

I couldn't tell from the documentation if this is normal behaviour or not, so if it is, you might consider adding a note.

2. In a reply to me in a previous message, you mentioned that the more modern standard of handling strings is to use the address/length method, as opposed to counted strings, where the length is in the 1st byte. Just curious: assuming I store the string without the length byte, is standard practice to define a variable to hold the length?
ie: create my_string 50 chars allot \ create string with max length
variable my_string_length \ holds current length

Thanks...

Lou Solomon

I can understand why this is used for passing string info from word to word, but it seems that counted strings would be better for the actual st

Re: NEEDS bug? and String Question.

Posted by [Neal Bridges](#) on January 03, 1999 at 17:30:52:

In Reply to: *NEEDS bug? and String Question.* posted by Lou Solomon on January 03, 1999 at 14:54:16:

> 1. In one of my files, I put two 'needs' commands on one line, ex:
> .(include in standard file stuff)
> needs datamgr needs ids

> It seems that the IDS file never gets included in. When I move it to the next
> line, ie:

> needs datamgr
> needs ids
> it works fine.

> I couldn't tell from the documentation if this is normal behaviour or not, so
> if it is, you might consider adding a note.

It's normal behaviour. I'll add the note. INCLUDE also skips the remainder of the line.

> 2. In a reply to me in a previous message, you mentioned that the more modern
> standard of handling strings is to use the address/length method, as opposed
> to counted strings, where the length is in the 1st byte. Just curious:
> assuming I store the string without the length byte, is standard practice to
> define a variable to hold the length?
> ie: create my_string 50 chars allot \ create string with max length
> variable my_string_length \ holds current length

>
> I can understand why this is used for passing string info from word to word,
> but it seems that counted strings would be better for the actual st

I'd use a 2VARIABLE or similar for storing the string addr and length.

Neal

Re: NEEDS bug? and String Question.

Posted by [Erwin Schomburg](#) on January 04, 1999 at 04:33:04:

In Reply to: *Re: NEEDS bug? and String Question.* posted by Neal Bridges on January 03, 1999 at 17:30:52:

The NEEDS and INCLUDE definitions in the kernel use a construct like
0 PARSE instead of BL PARSE, so the "filename" is parsed and the rest of the
input line is discarded. With a BL PARSE construct a "multi-NEEDS" on one line
would be possible. We also had this issue when discussing the doc-include
module, its not clear to me if this is Neal's preference or if you can find it
somewhere in the standard to have (only) one INCLUDE per line.

/Erwin

Re: NEEDS bug? and String Question.

Posted by [Neal Bridges](#) on January 04, 1999 at 05:03:29:

In Reply to: *Re: NEEDS bug? and String Question.* posted by Erwin Schomburg on January 04, 1999 at 04:33:04:

> The NEEDS and INCLUDE definitions in the kernel use a construct like
> 0 PARSE instead of BL PARSE, so the "filename" is parsed and the rest of the
> input line is discarded. With a BL PARSE construct a "multi-NEEDS" on one line
> would be possible. We also had this issue when discussing the doc-include
> module, its not clear to me if this is Neal's preference or if you can find it
> somewhere in the standard to have (only) one INCLUDE per line.

Actually NEEDS and INCLUDE both use PARSE-WORD, which parses up to the next space. However, because the input buffer is used when reading of source code from files, the input line is no longer in its former state when NEEDS or INCLUDE finishes processing a file; hence, the input buffer is deliberately cleared after a NEEDS or INCLUDE.

To circumvent this would require preserving the current input line with each nested INCLUDE; this would be memory consuming while adding no particular value.

The Standard itself contains neither INCLUDE nor NEEDS, but rather INCLUDED:

```
: filename S" myfile" ;
```

```
filename INCLUDED
```

Quartus Forth has INCLUDED; it serves as the basis for INCLUDE, which in turn is the basis for NEEDS.

Neal

Re: NEEDS bug? and String Question.

Posted by Erwin on January 04, 1999 at 10:54:41:

In Reply to: *Re: NEEDS bug? and String Question.* posted by Neal Bridges on January 04, 1999 at 05:03:29:

> Actually NEEDS and INCLUDE both use PARSE-WORD, which parses up to the next
> space. However, because the input buffer is used when reading of source code
> from files, the input line is no longer in its former state when NEEDS or
> INCLUDE finishes processing a file; hence, the input buffer is
> deliberately cleared after a NEEDS or INCLUDE.

> To circumvent this would require preserving the current input line with each
> nested INCLUDE; this would be memory consuming while adding no particular
value.

> The Standard itself contains neither INCLUDE nor NEEDS, but rather INCLUDED:

```
> : filename S" myfile" ;
> filename INCLUDED
> Quartus Forth has INCLUDED; it serves as the basis for INCLUDE, which in turn
is
> the basis for NEEDS.
> Neal
```

Ouch, whereas your flu made you constructive, mine threw me down for almost four weeks and obviously left some functions unlinked until now. I just remembered that when we were discussing docinclude features you favoured to use 0 PARSE, but I forgot about the necessity to clear/reset the input buffer when making provisions for nesting, sorry.

/Erwin

"Interpretation semantics undefined"

Posted by [Neal Bridges](#) on January 02, 1999 at 13:09:37:

Recently Mike Will raised this point:

```
...
> Now, the ANS94 docs state that the "Interpretation semantics for this word are
> undefined". In fact, many such words have the same stipulation.
> This is what I'm confused about.
```

There are 50 words in the ISO/ANSI Forth Standard that are marked "Implementation semantics for this word are undefined." That means the Standard says nothing about what those words do when executed in interpretation state.

Of that group, these words have more-or-less obvious reasons as to why they don't have any meaning when interpreting (they either explicitly lay down compiled code, or operate on the return stack, or are compile-time versions of other words):

```
." ; >R ABORT" DOES> EXIT LITERAL POSTPONE R> R@ RECURSE [ ['] [CHAR] 2>R
2R> 2R@ COMPILE, [COMPILE] 2LITERAL FLITERAL (LOCAL) LOCALS| ;CODE
SLITERAL
```

Of the remainder, nearly all are control-structure related:

```
+LOOP BEGIN DO ELSE I IF J LEAVE LOOP REPEAT THEN LOOP UNTIL WHILE ?DO
AGAIN CASE ENDCASE ENDOF OF AHEAD CS-PICK CS-ROLL
```

These could be made to work when interpreting. However, it would add extra complexity to the system while providing no new functionality:

```
:noname 5 0 do ... loop ; execute
```

or

```
: t 5 0 do ... loop ; t
```

is not practically any more complex than

5 0 do ... loop

However, if there's a real desire for it, I can make them work while interpreting.

The remaining words, S" and C" are the only remaining candidates for operation while interpreting, should you want them. I've provided the code for S" already, and C" can be altered in the same way.

Neal

Re: "Interpretation semantics undefined"

Posted by [Mike Will](#) on January 02, 1999 at 14:27:43:

In Reply to: "*Interpretation semantics undefined*" posted by Neal Bridges on January 02, 1999 at 13:09:37:

> However, if there's a real desire for it, I can make them work while
> interpreting.
> Neal

Speaking for myself, I agree with your current implementation. Keep it lean and modular in the original spirit of Forth. I'm coming from a full-blown, all bells and whistles environment and it's taking me a bit of time to convert my old code to ANS94. Don't let my stumbling around knock you off track. With your help over the last few days, I've written a startup file that basically adds the cushy niceties I'm used to, without bloating the core. This way, I can have my comfort, without paying for it with larger distributables.

Quartus is really nice. I'm still thrilled whenever I finish an hour-long session, turn it off, and realize that I've been using a palmtop.

Mike Will

Quartus vs. Codewarrior?

Posted by [Dan Vincent](#) on January 02, 1999 at 13:08:07:

As a total newbie in the realm of Palm programming, I would like opinions from some seasoned users of both environments. I am really impressed with the support Neal has given his product here.

I have a background in 68K assembler as well as some C (but no Forth). I have an app in mind that will require tight coupling with the hardware, particularly the IR port on the Palm III. The program will make heavy use of graphics, buttons, and screens. It needs to be fast.

Cost is a secondary issue. Is there anything Codewarrior provides that I wouldn't have with Quartus?

Thanks,

Dan Vincent

Re: Quartus vs. Codewarrior?

Posted by [Neal Bridges](#) on January 02, 1999 at 13:34:48:

In Reply to: *Quartus vs. Codewarrior?* posted by Dan Vincent on January 02, 1999 at 13:08:07:

> As a total newbie in the realm of Palm programming, I would like opinions from
> some seasoned users of both environments. I am really impressed with the
> support Neal has given his product here.

> I have a background in 68K assembler as well as some C (but no Forth). I have
> an app in mind that will require tight coupling with the hardware, particularly
> the IR port on the Palm III. The program will make heavy use of graphics,
> buttons, and screens. It needs to be fast.

> Cost is a secondary issue. Is there anything Codewarrior provides that I
> wouldn't have with Quartus?

I'm a bit biased, but I'll chime in anyway.

Beyond that CodeWarrior provides a PC-based development environment, and Quartus Forth is entirely based on the Palm device itself, I'll venture there's no project you might undertake in CodeWarrior that you couldn't also achieve using Quartus Forth, in conjunction with on-board tools such as RsrcEdit. Quartus Forth provides an inline 68000 symbolic assembler, and seamless access to all Palm OS systraps.

Let me also add a few words about what Quartus Forth provides that CodeWarrior doesn't.

Quartus Forth doesn't place any barriers between you and the Palm device itself. In the case of an IR app, clearly you'll need to test directly on the Palm.

There's the advantage of immediate testing, and very fast edit-test cycles. For instance, when writing 'Swatch', I went from blank slate to first release in 6 hours, and that was while I had the 'flu. :)

Forth source code is far more concise and syntactically simple than C; this helps the developer manage a project conceptually.

As to support, I'm motivated: I not only develop Quartus Forth, I use it as a development environment.

And of course, portability. My Palm III is always nearby, and I write code whenever and wherever the mood strikes; capitalizing on the creative urge when it arises has dramatically increased my development throughput.

Neal

Re: Quartus vs. Codewarrior?

Posted by [Dan Vincent](#) on January 03, 1999 at 11:04:28:

In Reply to: *Re: Quartus vs. Codewarrior?* posted by Neal Bridges on January 02, 1999 at 13:34:48:

> > As a total newbie in the realm of Palm programming, I would like opinions from
> > some seasoned users of both environments. I am really impressed with the
> > support Neal has given his product here.

> > I have a background in 68K assembler as well as some C (but no Forth). I have
> > an app in mind that will require tight coupling with the hardware, particularly
> > the IR port on the Palm III. The program will make heavy use of graphics, buttons, and screens. It needs to be fast.

> > Cost is a secondary issue. Is there anything Codewarrior provides that I
> > wouldn't have with Quartus?

> I'm a bit biased, but I'll chime in anyway.

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> Forth is entirely based on the Palm device itself, I'll venture there's no project you might undertake in CodeWarrior that you couldn't also achieve using
> Quartus Forth, in conjunction with on-board tools such as RsrcEdit. Quartus Forth provides an inline 68000 symbolic assembler, and seamless access to all Palm OS sysstraps.

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> There's the advantage of immediate testing, and very fast edit-test cycles. For instance, when writing 'Swatch', I went from blank slate to first release in
> 6 hours, and that was while I had the 'flu. :)

> Forth source code is far more concise and syntactically simple than C; this helps the developer manage a project conceptually.

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> And of course, portability. My Palm III is always nearby, and I write code whenever and wherever the mood strikes; capitalizing on the creative urge when it arises has dramatically increased my development throughput.

> Neal

Well, I don't think you're being too biased. But once when I had the flu, I

created a complete relational database program on an Altair 880, using toggle switches to input the hex code, in FOUR hours. Unfortunately, my daughter, who was teething at the time, got hold of the cassette I saved it to...

Seriously, Quartus sounds excellent. A couple of questions arise: If you get an error that locks up or crashes the Palm, how do you find it? Are there inherent single step or breakpoint capabilities?

And just curious: When you code, do you enter all your text via graffiti?

I have a lot more questions, but I'll wait until I've read through your documentation.

What is the cost of the registered version? I can't seem to find it.

-- Dan

Re: Quartus vs. Codewarrior?

Posted by [Neal Bridges](#) on January 03, 1999 at 11:50:30:

In Reply to: *Re: Quartus vs. Codewarrior?* posted by Dan Vincent on January 03, 1999 at 11:04:28:

> Well, I don't think you're being too biased. But once when I had the flu, I
> created a complete relational database program on an Altair 880, using toggle
> switches to input the hex code, in FOUR hours. Unfortunately, my daughter,
who
> was teething at the time, got hold of the cassette I saved it to...

Hah! Everybody knows the Altair 880 used dilithium delay lines, not cassette tapes! :)

> Seriously, Quartus sounds excellent. A couple of questions arise: If you get
> an error that locks up or crashes the Palm, how do you find it? Are there
> inherent single step or breakpoint capabilities?

Breakpoints, certainly; in Forth that's as simple as
.s abort

which displays the stack contents and halts execution. There's also
regs.txt in the File Area; it does a dump of all 68000 registers.

Single-stepping isn't presently provided. This doesn't tend to be limiting, however. Forth words are quite short; finding the offending word (using breakpoints similar to the above) is quick, and simple interactive testing of the offending word reveals the error.

> And just curious: When you code, do you enter all your text via graffiti?

I do. Sometimes I'll download my source and print it (3 columns per page, half inch page margins, 9 point Times Roman type is perfect for Quartus source) for desk-checking.

> I have a lot more questions, but I'll wait until I've read through your
> documentation.

> What is the cost of the registered version? I can't seem to find it.

The introductory price is \$69.95 USD. All things being equal, you should be able to buy it some time tomorrow (Monday January 4th 1999).

Neal

S"

Posted by [Mike Will](#) on January 02, 1999 at 00:39:54:

Neal, the run time behaviour of S" puzzles me. It leaves nothing on the stack. At compile time, it leaves (-- addr u) as per ANS94. Is this correct?

Re: S"

Posted by [Neal Bridges](#) on January 02, 1999 at 00:49:34:

In Reply to: S" posted by Mike Will on January 02, 1999 at 00:39:54:

> Neal, the run time behaviour of S" puzzles me. It leaves nothing on the stack.
> At compile time, it leaves (-- addr u) as per ANS94. Is this correct?

Just the reverse.

```
: string s" This is my string" ;  
string type This is my string ok
```

Neal

Re: S"

Posted by [Mike Will](#) on January 02, 1999 at 09:50:42:

In Reply to: Re: S posted by Neal Bridges on January 02, 1999 at 00:49:34:

> Just the reverse.
> : string s" This is my string" ;
> string type This is my string ok

> Neal

Right.

Unfortunately, I badly misstated the problem. Instead of comparing runtime vs compile time, I meant to compare interpretation (console) to runtime. Consider the following:

```
S" This is my string"
```

In the Forths I've used before (several non-ANS, Ficl as well), this leaves (-- addr u) on the stack. In Quartus, it leaves nothing.

```
Of course,  
: string S" This is my string" ;  
works as it should.
```

Now, the ANS94 docs state that the "Interpretation semantics for this word are undefined". In fact, many such words have the same stipulation. This is what I'm confused about. Why would ANSI blow away all this great functionality? I often use a statement such as:

```
S" MAX-U" environment? [IF] [ELSE] FFFF [THEN]  
right from the console or at the start of a load file.
```

Thanks.

Re: S"

Posted by [Neal Bridges](#) on January 02, 1999 at 10:41:07:

In Reply to: *Re: S"* posted by Mike Will on January 02, 1999 at 09:50:42:

```
> Unfortunately, I badly misstated the problem. Instead of comparing runtime vs  
> compile time, I meant to compare interpretation (console) to runtime. Consider  
> the following:
```

```
> S" This is my string"
```

```
> In the Forths I've used before (several non-ANS, Ficl as well), this  
> leaves ( -- addr u) on the stack. In Quartus, it leaves nothing.
```

```
> Of course,  
> : string S" This is my string" ;  
> works as it should.
```

```
> Now, the ANS94 docs state that the "Interpretation semantics for this word are  
> undefined". In fact, many such words have the same stipulation.  
> This is what I'm confused about. Why would ANSI blow away all this great  
> functionality? I often use a statement such as:
```

```
> S" MAX-U" environment? [IF] [ELSE] FFFF [THEN]  
> right from the console or at the start of a load file.
```

It's not 'blown away'. The CORE version of S" has no defined interpretation semantics-- but the version in the FILE wordset does. Here's an implementation:

This definition allows S" to be interpreted -- it has one buffer, which will be overwritten by the next interpreted S".

```
create buffer 80 allot
```

```
: S" ( -- c-addr u )  
  [char] " parse  
  state @ if postpone sliteral  
  else tuck buffer swap move  
    buffer swap  
  then ; immediate
```

I chose not to put the FILE version in the kernel, as it requires a buffer that I didn't want to statically allocate.

Neal

New file: Easter.txt

Posted by [Neal Bridges](#) on January 01, 1999 at 21:15:25:

I've put *easter.txt* in the Quartus Forth File Area. It provides for the calculation of Easter and 12 other related holidays.

Neal

- [File Area](#)

Updated DataMgr.txt

Posted by [Neal Bridges](#) on January 01, 1999 at 21:12:51:

I've updated DataMgr.txt with a new word, CreateDB. This is a wrapper for DmCreateDatabase, in line with OpenDB and CloseDB.

Neal

- [File Area](#)

New manual page: Pronunciation of Forth Words

Posted by [Neal Bridges](#) on January 01, 1999 at 20:57:45:

I've added a new manual page -- "Pronunciation of Forth Words". It lists all Standard Forth words with non-obvious accepted pronunciations.

Neal

New manual page -- C Typedefs

Posted by [Neal Bridges](#) on January 01, 1999 at 14:56:08:

I've written a new manual page that lists all of 3Com's C typedefs (Byte, ULong, LocalID, etc.), describes what they really represent, and gives examples in Quartus Forth.

This should help those trying to decipher the C function declarations in 3Com's documentation.

Neal

- [C Typedefs Manual Page](#)

Library file / Asm68k questions

Posted by [Andrew Shelton](#) on December 31, 1998 at 23:11:06:

Greetings, have to say that all the other pretenders have already (since christmas) faded off my new palm in the face of quartus, in an environment where it makes sense to give forth the time it deserves.(although trying to buy forth books was `amusing')

I'm uncertain about the `libraries' file. I run Linux only and don't know that I have tools to deal with it. Uploading it as a memo creates an empty memo? do I need the windows front end for this?

Also, I seriously want to do some assembler, but the asm68k documentation has me stumped...taking it as your sole source while approaching learning asm itself seems hard (or I'm stupid) especially when I'm not a forth native myself. Could someone with better knowledge than me write out a wordlist or a longer example (beg,bow, scrape)?

Especially since it looks like asm68K is the only onboard assembler around.

Re: Library file / Asm68k questions

Posted by [Neal Bridges](#) on January 01, 1999 at 00:39:41:

In Reply to: *Library file / Asm68k questions* posted by Andrew Shelton on December 31, 1998 at 23:11:06:

> Greetings, have to say that all the other pretenders have already
> (since christmas) faded off my new palm in the face of quartus, in
> an environment where it makes sense to give forth the time it
> deserves.(although trying to buy forth books was `amusing')

There's a shortage of books on Forth programming. There's a new one for sale on the web at www.forth.com; I can't vouch for it, though, as I've only seen the sample chapters they've posted. The 'Online Resources' section of the manual has some good web-based material.

> I'm uncertain about the `libraries' file. I run Linux only and don't
> know that I have tools to deal with it. Uploading it as a memo creates
> an empty memo? do I need the windows front end for this?

That file is for use with the Palm Desktop software, under either Windows or the Mac. In other environments, download the memos you require from the Quartus Forth File Area in .txt format, and move them in that way. Under Linux, I've only used pilot-xfer; is there a standard format for a collection of memos with the software you're using? I'd be happy to create and bundle that as well.

> Also, I seriously want to do some assembler, but the asm68k documentation
> has me stumped...taking it as your sole source while approaching learning
> asm itself seems hard (or I'm stupid) especially when I'm not a forth
> native myself. Could someone with better knowledge than me write out a
> wordlist or a longer example (beg,bow, scrape)?

The asm68k documentation certainly isn't intended as a tutorial for budding 68000 assembler programmers.

The wordlist for the assembler is in the manual. If you can pose some specific questions I'd be happy to help; it's far easier for me to answer questions than it is to anticipate them.

Here's a breakdown of -ROT, showing the equivalent Pila-style assembler:

```
code -rot
  tos d0 move \ move.w tos,d0
  sp ) tos move \ move.w (sp),tos
  2 sp d) sp ) move \ move.w 2(sp),(sp)
  d0 2 sp d) move \ move.w d0,2(sp)
end-code
```

That's in postfix mode. In prefix, it's the same code, but resembles the Pila-style a bit more:

```
code -rot
  prefix
  move tos d0
  move sp ) tos
  move 2 sp d) sp )
  move d0 2 sp d)
end-code
```

> Especially since it looks like asm68K is the only onboard assembler
> around.

It works quite well. Porting from the original F83 source was the work of an afternoon -- mostly reformatting the code for readability on the PalmPilot's screen, and figuring out what certain parts of the original hand-typed source listing really meant. After the port I found only a couple of bugs (inherent in the original source). Adding prefix mode took less than half an hour.

Neal

Re: Library file / Asm68k questions

Posted by [Tony Sanders](#) on January 06, 1999 at 14:32:24:

In Reply to: *Re: Library file / Asm68k questions* posted by Neal Bridges on January 01, 1999 at 00:39:41:

> There's a shortage of books on Forth programming. There's a new one for sale
> on
> the web at www.forth.com; I can't vouch for it, though,

I have it, it's ok but nothing great. It does cover ANS Forth so if you find the spec hard to follow, "Forth Programmer's Handbook" (Conklin & Rather) is probably your best bet at this time.

Neal: maybe it's time to start talking to O'Reilly and Associates about Quartus in a Nutshell :) I have some contacts at ORA if your interested.

Re: Library file / Asm68k questions

Posted by [Neal Bridges](#) on January 06, 1999 at 22:17:31:

In Reply to: *Re: Library file / Asm68k questions* posted by Tony Sanders on January 06, 1999 at 14:32:24:

> > There's a shortage of books on Forth programming. There's a new one for
> sale
> on

> > the web at www.forth.com; I can't vouch for it, though,

> I have it, it's ok but nothing great. It does cover ANS Forth so if you
> find the spec hard to follow, "Forth Programmer's Handbook" (Conklin & Rather)
> is probably your best bet at this time.

> Neal: maybe it's time to start talking to O'Reilly and Associates about
> Quartus in a Nutshell :) I have some contacts at ORA if your interested.

Hey, that's a good thought. But I think a "Forth in a Nutshell" book would be better, perhaps.

Neal

Updated errlist.zip

Posted by [Neal Bridges](#) on December 31, 1998 at 18:27:52:

I removed a few duplicate/incorrect entries in the Palm OS error listing. Grab the new version of *errlist.zip* from the Quartus File Area.

Neal

- [File Area](#)

Quartus Forth 1.0.2E now available

Posted by [Neal Bridges](#) on December 31, 1998 at 03:19:11:

Fixed a bug in the Goto Last Error function (that automatically takes you to the place in your source where the last error occurred).

Enjoy!

Neal

Re: Quartus Forth 1.0.2E now available

Posted by [Rick Francis](#) on January 01, 1999 at 14:16:26:

In Reply to: *Quartus Forth 1.0.2E now available* posted by Neal Bridges on December 31, 1998 at 03:19:11:

...
> Enjoy!
> Neal

And we ARE enjoying. I picked up a Palm III a couple of weeks back, have been looking at development options; have been checking out your successive refinements as they became available. 1.0.2E seems, at least as far as the samples are concerned, to be safe for Forth newbies -- and it's as fast as anything else, more compact than anything else, and apparently capable of getting any behavior out of a Pilot's innards that is in there to begin with.

I hadn't messed with Forth since 1985 or thereabouts; professionally at least, there weren't many reasons for me to. I get the impression that all that may have just changed -- big time. Haven't seen many development products that, at this stage in their history, are anywhere near as robust and polished as this one -- nice work, you're an artist!

Rick Francis

Re: Quartus Forth 1.0.2E now available

Posted by [Neal Bridges](#) on January 01, 1999 at 15:07:59:

In Reply to: *Re: Quartus Forth 1.0.2E now available* posted by Rick Francis on January 01, 1999 at 14:16:26:

> ...
> > Enjoy!
> > Neal

> And we ARE enjoying. I picked up a Palm III a couple of weeks back, have been
> looking at development options; have been checking out your successive
> refinements as they became available. 1.0.2E seems, at least as far as the
> samples are concerned, to be safe for Forth newbies -- and it's as fast as
> anything else, more compact than anything else, and apparently capable of
> getting any behavior out of a Pilot's innards that is in there to begin with.

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least,
> there weren't many reasons for me to. I get the impression that all that may
> have just changed -- big time. Haven't seen many development products that, at
> this stage in their history, are anywhere near as robust and polished as this
> one -- nice work, you're an artist!

Thanks very much, Rick. Those are kind words indeed.

Neal

Re: Quartus Forth 1.0.2E now available

Posted by [Rick Francis](#) on January 03, 1999 at 21:58:21:

In Reply to: *Re: Quartus Forth 1.0.2E now available* posted by Neal Bridges on January 01, 1999 at 15:07:59:

> Thanks very much, Rick. Those are kind words indeed.
> Neal

Sincere words, too; I just bought the registered version. Any words of wisdom
or pointers to information on floating point in general, trig & transcendentals
in particular? I've written a few Windows utilities for the amateur
astronomer, and figured that, as a learning exercise, I might try porting some
of them to Palm OS. Old rule of mine: Pick subjects you know, when starting
work in a language you DON'T know...

Anyhow -- forth to good fortune, in both senses.

Rick

Re: Quartus Forth 1.0.2E now available

Posted by [Neal Bridges](#) on January 04, 1999 at 03:33:08:

In Reply to: *Re: Quartus Forth 1.0.2E now available* posted by Rick Francis on January 03, 1999 at 21:58:21:

> > Thanks very much, Rick. Those are kind words indeed.
> > Neal

> Sincere words, too; I just bought the registered version. Any words of

That's great!

wisdom

> or pointers to information on floating point in general, trig &

transcendentals

> in particular? I've written a few Windows utilities for the amateur

> astronomer, and figured that, as a learning exercise, I might try porting some

> of them to Palm OS. Old rule of mine: Pick subjects you know, when starting

> work in a language you DON'T know...

Float trig is coming soon, along with a number of other words from the FLOAT
EXT worset. For the moment, there's *trig.txt*, integer sin and cos to
three decimal places of accuracy.

Not sure what wisdom I can offer. By way of a floating-point example, here's a
calculation for determining the number of miles in a light-year:

186e3 fconstant miles/sec

60e fconstant sec/min

60e fconstant min/hr

24e fconstant hr/day

365.25e fconstant day/year

sec/min min/hr f*

hr/day f*

day/year f*

miles/sec f*

.(Miles/light-year:) fs.

> Anyhow -- forth to good fortune, in both senses.

Thanks again!

Neal

pictured numeric output

Posted by [Andrew Brault](#) on December 31, 1998 at 01:45:40:

I'm relatively new to Forth, and I'm having a great time learning with Quartus. What an amazing system! Anyways, I am having a little trouble with "pictured numeric output". ANS is not much help in this area. I just want to convert a number to a string for later display. According to the standard I should be able to do something like this, right?

```
: integer-to-string ( n -- c-addr count )  
#< #S #> ;
```

but that doesn't work... is there some other standard way to do this (besides making my own pictured output words)?

Re: pictured numeric output

Posted by [Andrew Brault](#) on December 31, 1998 at 01:49:25:

In Reply to: *pictured numeric output* posted by Andrew Brault on December 31, 1998 at 01:45:40:

```
> I'm relatively new to Forth, and I'm having a great time  
> learning with Quartus. What an amazing system! Anyways,  
> I am having a little trouble with "pictured numeric output".  
> ANS is not much help in this area. I just want to convert  
> a number to a string for later display. According to the  
> standard I should be able to do something like this, right?  
> : integer-to-string ( n -- c-addr count )  
> #< #S #> ;  
> but that doesn't work... is there some other standard way  
> to do this (besides making my own pictured output words)?
```

whoops, I meant:

```
: integer-to-string <# #S #> ;  
of course :)
```

Re: pictured numeric output

Posted by [Neal Bridges](#) on December 31, 1998 at 02:36:25:

In Reply to: *Re: pictured numeric output* posted by Andrew Brault on December 31, 1998 at 01:49:25:

```
> > I'm relatively new to Forth, and I'm having a great time  
> > learning with Quartus. What an amazing system! Anyways,  
> > I am having a little trouble with "pictured numeric output".  
> > ANS is not much help in this area. I just want to convert
```

```
> > a number to a string for later display. According to the
> > standard I should be able to do something like this, right?
> > : integer-to-string ( n -- c-addr count )
> > #< #S #> ;
> > but that doesn't work... is there some other standard way
> > to do this (besides making my own pictured output words)?
> whoops, I meant:
> : integer-to-string <# #S #> ;
> of course :)
```

That's the general idea, but <# #> takes a double-cell number.

```
12345. <# #s #> type 12345 ok
```

So you'd re-write your word:

```
: integer-to-string ( u -- c-addr u ) 0 <# #S #> ;
```

Neal

Re: pictured numeric output

Posted by [Andrew Brault](#) on December 31, 1998 at 12:37:01:

In Reply to: *Re: pictured numeric output* posted by Neal Bridges on December 31, 1998 at 02:36:25:

Oh, thanks! That works great. BTW congratulations on the 1.0 release, I plan on registering once I've finished my first Forth app (shouldn't be very long!).

Palm OS error codes: errlist.zip now available!

Posted by [Neal Bridges](#) on December 31, 1998 at 01:27:44:

Following Lou Solomon's question about error codes returned from sysstraps, I thought it'd be handy to have a complete list of error codes available.

I've created a file with all Palm OS error codes listed alphabetically, with values in both decimal and hex. You'll find it in the Quartus File Area as *errlist.zip*.

Neal

- [File Area](#)

Re: Palm OS error codes: errlist.zip now available!

Posted by [Lou Solomon](#) on December 31, 1998 at 13:09:22:

In Reply to: *Palm OS error codes: errlist.zip now available!* posted by Neal Bridges on December 31, 1998 at 01:27:44:

Neal:

You are a gentleman and a scholar.

By the way, I did look around for the program that displayed the error listings, and downloaded it, but it looks like it was a 'demo' version, that is now expired. Oh well.

Thanks again..

Lou

Quartus Forth 1.0.1E available

Posted by [Neal Bridges](#) on December 30, 1998 at 22:00:12:

I've fixed the bug in the startup sequence, added several needed files to the library archive, and updated the docs for Year and Duco so that they compile successfully.

Thanks to you all for your feedback!

Neal

- [File Area](#)

Re: Quartus Forth 1.0.1E available

Posted by [Neal Bridges](#) on December 30, 1998 at 22:33:09:

In Reply to: *Quartus Forth 1.0.1E available* posted by Neal Bridges on December 30, 1998 at 22:00:12:

Also, I've put the sources to Year and Duco in .mpa format; they're included in the q4th101e.zip.

Neal

Gotype keyboard and User Library

Posted by [Lou Solomon](#) on December 30, 1998 at 19:10:07:

Neal & Everyone:

I just saw the message about the charhack, so, on a similar note, I'd like to recommend to any developers out there, the GOTYPE keyboard. Bottom line: it works well, seems like 100% Quartus compatible, and really makes entering Forth source as easy as from any computer keyboard. No hacks needed to switch between apps, as the function keys on the keyboard can be mapped to any app (as can the and states of the 6 keys). I guess it's not dirt cheap (seems like it's the undiscounted \$80US everywhere), but if your doing a lot of programming directly on the pilot (via graffiti), it eliminates most disadvantages of writing on the pilot... (now if it only had a good program editor app.....)

On another note, I've actually started on my ISAM library (to encapsulate the Palm-OS routines). It's my first non-trivial forth program (finally!), and although it doesn't do much now, I hope in the next couple of days to get it into shape. Two questions:

1. When I finish it, I'd like the Quartus programmers out there to look at it, to suggest improvements (in both the code, and functionality, and if it actually might be useful to someone else, use it. My question is what/where would be the vehicle to do this? Do you plan the Quartus file area to hold user submitted files? If so, would you be the 'editor', and how would we submit the files to you? Just curious... (I know I'm thinking way ahead based upon the code I've finished, but I'm on such a high right now from finally getting started on it, and having a couple of the main words done and working!)
2. Easier question: the create file function of the PalmOS returns a 537 when the file already exists, so I'm presuming to believe means something like "file already exists". I looked through the DOCS and I didn't see anything about any functionality regarding returning the text strings of Palm-OS error messages. Did I miss something? And.. should I presume they are in the Palm SDK headers? And would you (or anyone) be interested in a forth word that returns the full error text? (maybe that can be my first actual use of my isam library).

Thanks

Lou

PS: Sorry to everyone for my long messages. Maybe programming in Forth will teach me terseness :-)

Re: Gotype keyboard and User Library

Posted by [Neal Bridges](#) on December 30, 1998 at 20:08:28:

In Reply to: *Gotype keyboard and User Library* posted by Lou Solomon on December 30, 1998 at 19:10:07:

[snip]
> disadvantages of writing on the pilot... (now if it only had a good program
> editor app.....)

With ShiftHack and ClearHack loaded, the memopad isn't a bad place to write code.

> On another note, I've actually started on my ISAM library (to encapsulate the
> Palm-OS routines). It's my first non-trivial forth program (finally!), and
> although it doesn't do much now, I hope in the next couple of days to get it
> into shape. Two questions:

> 1. When I finish it, I'd like the Quartus programmers out there to look at it,
> to suggest improvements (in both the code, and functionality, and if it
> actually might be useful to someone else, use it. My question is what/where
> would be the vehicle to do this? Do you plan the Quartus file area to hold
> user submitted files? If so, would you be the 'editor', and how would we
> submit the files to you? Just curious... (I know I'm thinking way ahead
based
[snip]

I haven't got the bandwidth to manage that. I'd suggest you post it on your own website; if you lack one, there are a number of free ones available.

> 2. Easier question: the create file function of the PalmOS returns a 537 when
> the file already exists, so I'm presuming to believe means something like
"file
> already exists". I looked through the DOCS and I didn't see anything about
any
> functionality regarding returning the text strings of Palm-OS error messages.

This stuff is scattered all over the header files, but here's how you figure out what a given error code means. The description that follows has nothing to do with Quartus Forth, and everything to do with the Palm OS itself. Here goes.

Your error -- 537 -- is (hex) 219. In SystemMgr.h, we see dmErrorClass is 0x200; that means all errors for the Dm* systrops are in the range (hex) 201 to (hex) 2FF.

So the actual error is (hex) 19. That's (decimal) 25. Look in DataMgr.h and you'll see that the error is dmErrorAlreadyExists, defined there as (dmErrorClass | 25). There's no text message for it, or for that matter, for most of the returned errors in the Palm OS.

> Did I miss something? And.. should I presume they are in the Palm SDK headers?
> And would you (or anyone) be interested in a forth word that returns the full
> error text? (maybe that can be my first actual use of my isam library).

I think somebody did this; there's an app out there that, when you enter an

error code, returns a text description. My memory fails me as to the name, but a PilotGear search may well turn it up.

Neal

Updated library.zip and library.mpa

Posted by [Neal Bridges](#) on December 30, 1998 at 16:29:39:

I left 'simple-handler' out of the library.mpa file; I've put it back in, and updated both library.zip and q4th100e.zip.

Neal

CharHack Utility

Posted by [Ron Doerfler](#) on December 30, 1998 at 15:25:08:

Hi,

Reading through the Quartus 1.0.0 documentation, I noticed that in the list of useful hacks, there was no mention of CharHack. I don't know about others, but I find this very useful when coding on the PalmPilot. Dragging the stylus between two softkeys pulls up a small box containing the non-alphabetic characters. After you select one, the pop-up window disappears and the character appears in the memo or other text field. I use it all the time.

You can search for it and download it from <http://wr.com.au/harryo/charhack/> or from, say, <http://www.palmcentral.com> under the Search tool. The .zip file contains CharHack (used under HackMaster) and CharPanel (a regular application that you need to change the softkey drag and the location of the pop-up character display window).

Cheers, and congrats to Neal on a wonderful product!! Looks like I got into this Palm programming thing at just the right time.

Ron Doerfler

Re: CharHack Utility

Posted by [Neal Bridges](#) on December 30, 1998 at 16:46:54:

In Reply to: *CharHack Utility* posted by Ron Doerfler on December 30, 1998 at 15:25:08:

> Reading through the Quartus 1.0.0 documentation, I
> noticed that in the list of useful hacks, there was
> no mention of CharHack. I don't know about others,
> but I find this very useful when coding on the PalmPilot.
> Dragging the stylus between two softkeys pulls
> up a small box containing the non-alphabetic
> characters. After you select one, the pop-up window
> disappears and the character appears in the memo or
> other text field. I use it all the time.

I like it; I'll add it to the recommendations.

> Cheers, and congrats to Neal on a wonderful product!!
> Looks like I got into this Palm programming thing at
> just the right time.

Thanks!

Neal

Um... Neal (I toasted my Pilot)

Posted by [Mike Will](#) on December 30, 1998 at 13:55:38:

Sorry, Neal, but I enjoyed that post subject so much I had to steal it and use it again.

I'm using (and enjoying) version 1.0 (seems fast).

However, that business about [''] prior to version 8.2 might be raising its ugly head again. I ran the example in the new manual (showing how to catch the Bye exit) which contains a ['']

Now Quartus throws a 'stack underflow' whenever I define a new word (any colon definition. I tried deleting and re-installing Quartus, no effect. Any thoughts?

Thanks.

Re: Um... Neal (I toasted my Pilot)

Posted by [Neal Bridges](#) on December 30, 1998 at 14:36:25:

In Reply to: *Um... Neal (I toasted my Pilot)* posted by Mike Will on December 30, 1998 at 13:55:38:

> Sorry, Neal, but I enjoyed that post subject so much I had to steal it and use
> it again.

Well cut that out, you'll give people the wrong idea :)

> I'm using (and enjoying) version 1.0 (seems fast).
> However, that business about [''] prior to version 8.2 might be raising its
ugly
> head again. I ran the example in the new manual (showing how to catch the Bye
> exit) which contains a [']
> Now Quartus throws a 'stack underflow' whenever I define a new word (any colon
> definition. I tried deleting and re-installing Quartus, no effect. Any
> thoughts?
> Thanks.

Mike, do you have a startup.quartus memo? I've found a bug that I've killed;
I'll be releasing a new version tonight. Toss an ABORT at the bottom of your
startup.quartus memo for the moment, life should be good.

Neal

This puppy works fine

Posted by [Mike Will](#) on December 30, 1998 at 14:55:11:

In Reply to: *Re: Um... Neal (I toasted my Pilot)* posted by Neal Bridges on December 30, 1998 at 14:36:25:

> Well cut that out, you'll give people the wrong idea :)
Right, note the new subject line.

> Mike, do you have a startup.quartus memo? I've found a bug that I've killed;
> I'll be releasing a new version tonight. Toss an ABORT at the bottom of your
> startup.quartus memo for the moment, life should be good.

Yes, I did have a startup.quartus memo. The error seems to have blown it away,
curiously. The Abort fix works fine.

Thanks.

Library file??

Posted by [Erwin Schomburg](#) on December 30, 1998 at 12:38:08:

I just have set up my X-Mas present (300 MHz processor on a 100MHz board), so I do not know if reinstallation of browser went wrong or you mistyped the link, what happens if I want to get the .mpa file is that the click leads me to interlogs equivalent of never-never land.

/Erwin

Re: Library file??

Posted by [Neal Bridges](#) on December 30, 1998 at 12:57:15:

In Reply to: *Library file??* posted by Erwin Schomburg on December 30, 1998 at 12:38:08:

> I just have set up my X-Mas present (300 MHz processor on a 100MHz board), so I
> do not know if reinstallation of browser went wrong or you mistyped the link,
> what happens if I want to get the .mpa file is that the click leads me to
> interlogs equivalent of never-never land.

Thanks Erwin. It was a mistyped file link.

Nice gift!

Neal

Global Variables

Posted by [Lou Solomon](#) on December 30, 1998 at 11:46:55:

Neal:

In a previous thread (to me), you mentioned:

> Yes -- if a value really is global, keep it in a global variable. But access
> it through an interface -- write words to access it, rather than using ! and
> @. That way you retain control of it in all your source should you decided to
> alter the underlying model.

Is there some kind of 'standard' I should use for this? I'd really like to write my routines so that it looks good to Forth folk... so assuming I have a global flag, called HONOR_SECRET_FLAG, which will 'skip' retrieval of records with the secret bit set. So would the words to access it be something like:

```
: SET_HONOR_SECRET_FLAG ( true/false --- )  
h_secret_flag ! ;  
: RETRIEVE_HONOR_SECRET_FLAG ( ---- true/false )
```

h_secret_flag @ ;

If these types of words are what you meant by writing access words for globals, maybe I'm missing something, because they seem trivial (as opposed to saying that there is a boolean variable called h_secret_flag... change it as you wish)?

Right now... it's probably too much of the spiked eggnog....

Lou

PS: Congrats on the release... I was at Pilotgear HQ, and saw Quartus.. and saw that they're not collected money for you yet... Guess the old 1998 tax form isn't gonna have any of the Quartus bucks on it... remember.. mr. gates started by writing a language too!!!!

Re: Global Variables

Posted by [Neal Bridges](#) on December 30, 1998 at 12:09:42:

In Reply to: *Global Variables* posted by Lou Solomon on December 30, 1998 at 11:46:55:

> In a previous thread (to me), you mentioned:

> > Yes -- if a value really is global, keep it in a global variable. But access
> > it through an interface -- write words to access it, rather than using ! and
> > @. That way you retain control of it in all your source should you decided
> to
> > alter the underlying model.

> Is there some kind of 'standard' I should use for this? I'd really like to
> write my routines so that it looks good to Forth folk... so assuming I have a
> global flag, called HONOR_SECRET_FLAG, which will 'skip' retrieval of records
> with the secret bit set. So would the words to access it be something like:

```
> : SET_HONOR_SECRET_FLAG ( true/false --- )  
> h_secret_flag ! ;  
> : RETRIEVE_HONOR_SECRET_FLAG ( ---- true/false )  
> h_secret_flag @ ;
```

> If these types of words are what you meant by writing access words for
globals,
> maybe I'm missing something, because they seem trivial (as opposed to saying
> that there is a boolean variable called h_secret_flag... change it as you
wish)?

Simple replacements for fetch (@) and store (!) aren't what I had in mind.

I'd probably make the words "HONOUR-SECRET-FLAG" "IGNORE-SECRET-FLAG" and "SECRET-HONOURED?". That way you make available an interface to the ability to honour, or dishonour, the secret flag, with a way to query it; none of which show whether or not it's implemented in a global. It hides the implementation detail, which gives you the power to change it as you wish.

One simple example of this power comes during debugging. If you want to know all the times the secret flag is set to 'honour', you could put a simple debug message in "HONOUR-SECRET-FLAG".

Later, you may wish to change the system so that it handles multiple databases, instead of just one; then you'd need to have such a 'honour secret' flag for each database, and a global wouldn't be appropriate any longer. You'd already have a bunch of source code using your current implementation; if you keep your implementation details hidden, you could add multi-database functionality and not have to change any of that source.

> Right now... it's probably too much of the spiked eggnog....

> Lou

> PS: Congrats on the release... I was at Pilotgear HQ, and saw Quartus.. and
> saw that they're not collected money for you yet... Guess the old 1998
> tax form isn't gonna have any of the Quartus bucks on it... remember.. mr.
> gates started by writing a language too!!!!

He did. He groused about not getting paid for it, too ;)

Neal

Re: Global Variables

Posted by [Tony Sanders](#) on January 06, 1999 at 15:55:20:

In Reply to: *Re: Global Variables* posted by Neal Bridges on December 30, 1998 at 12:09:42:

> > Is there some kind of 'standard' I should use for this? I'd really like to
> > write my routines so that it looks good to Forth folk... so assuming I have
...

Neal wrote:

> Simple replacements for fetch (@) and store (!) aren't what I had in mind.
> I'd probably make the words "HONOUR-SECRET-FLAG" "IGNORE-SECRET-FLAG" and
> "SECRET-HONOURED?". That way you make available an interface to the ability

The idea behind this is that names (and usage) should state WHAT and not HOW.
HOW is what goes inside of a definition and need not appear in the name.

An exception is if you have a library of related routines where the programmer would need to choose among them to achieve a desired effect. For example, a library of sort routines might have words like BUBBLE, QSORT, SHELL, and RADIX. But these cases are few and far between.

Here are some related tips from Thinking Forth:

Choose names according to "what", not "how"

Find the most expressive word

Choose names that work in phrases

Spell names in full

Favor short words

Hyphenated names may be a sign of bad factoring

Don't bundle numbers into names

Learn and adopt Forth's naming conventions

Use prefixes and suffixes to differentiate between like words rather than to cram details of meaning into the name itself.

Compare: enable-left-motor vs. left motor on

Re: Global Variables

Posted by [Neal Bridges](#) on January 07, 1999 at 10:06:21:

In Reply to: *Re: Global Variables* posted by Tony Sanders on January 06, 1999 at 15:55:20:

> The idea behind this is that names (and usage) should state WHAT and not HOW.
> HOW is what goes inside of a definition and need not appear in the name.

> An exception is if you have a library of related routines where the
> programmer would need to choose among them to achieve a desired effect.
> For example, a library of sort routines might have words like BUBBLE,
> QSORT, SHELL, and RADIX. But these cases are few and far between.

Even that is a WHAT, and not a HOW; none of those words show you 'how' they'll set the sort mode, just what manner of underlying operation will then occur.

> Here are some related tips from Thinking Forth:

> Choose names according to "what", not "how"
> Find the most expressive word
> Choose names that work in phrases
> Spell names in full
> Favor short words
> Hyphenated names may be a sign of bad factoring
> Don't bundle numbers into names
> Learn and adopt Forth's naming conventions
> Use prefixes and suffixes to differentiate between like words
> rather than to cram details of meaning into the name itself.
>
> Compare: enable-left-motor vs. left motor on

Neal

Re: Global Variables

Posted by [Tony Sanders](#) on January 08, 1999 at 14:58:12:

In Reply to: *Re: Global Variables* posted by Neal Bridges on January 07, 1999 at 10:06:21:

> > An exception is if you have a library of related routines where the
> > programmer would need to choose among them to achieve a desired effect.
> > For example, a library of sort routines might have words like BUBBLE,
> > QSORT, SHELL, and RADIX. But these cases are few and far between.

> Even that is a WHAT, and not a HOW; none of those words show you 'how' they'll set the sort mode, just what manner of underlying operation will then occur.

True, there are many levels to the problem. But you would generally want to hide what type of sort was being done at the lowest levels in your application. If your still using words like RADIX at the top then you'll have problems if you redesign your data and RADIX is no longer the most efficient method for sorting it.

The HOW of one level is the WHAT of the next higher level.

Re: Global Variables

Posted by [Neal Bridges](#) on January 10, 1999 at 21:08:59:

In Reply to: *Re: Global Variables* posted by Tony Sanders on January 08, 1999 at 14:58:12:

> The HOW of one level is the WHAT of the next higher level.

Well said.

Neal

Further developments

Posted by [Neal Bridges](#) on December 29, 1998 at 21:17:53:

I've spent virtually the entire day trying to arrange for payment processing. So far no luck, but I have great hopes for tomorrow.

Neal

Re: Further developments

Posted by [Matthias Schneider](#) on December 30, 1998 at 02:32:00:

In Reply to: *Further developments* posted by Neal Bridges on December 29, 1998 at 21:17:53:

> I've spent virtually the entire day trying to arrange for payment processing.
> So far no luck, but I have great hopes for tomorrow.

> Neal

We've worked, discussed and have had fun together for the last several month, so the last few day's until payment issues are solved shouldn't be the problem. Sit down now and relax for a little moment and let the sun of success shine on your body ;-)

Many Thanks for your great work - I'm sure this will be the least buggy V1.0.0

ever released. I mean what I say.

Matthias

Re: Further developments

Posted by [Neal Bridges](#) on December 30, 1998 at 12:11:57:

In Reply to: *Re: Further developments* posted by Matthias Schneider on December 30, 1998 at 02:32:00:

> We´ve worked, discussed and have had fun together for the last several month,
so
> the last few day´s until payment issueas are solved shouldn´t be the problem.
> Sit down now and relax for a little moment and let the sun of success shine on
> your body ;-)
> Many Thanks for your great work - I´m sure this will be the least buggy V1.0.0
> ever released. I mean what I say.

Thanks for the vote of confidence, Matthias. I've been receiving mail from people asking me why that can't buy it yet; that's been my key motivator in trying to establish the payment processing.

Neal

Thanks!!!

Posted by [Dennis Groves](#) on December 29, 1998 at 20:32:18:

I used to use forth, when I was in school. I have always missed the language, I still have a copy of Threaded Interpeted Languages from Byte Books (my age is showing) I have downloaded the eval and eagerly await the registration of your software. Forth is the PERFECT language for the palm pilot!!! I think you have had a great thought, thank you for pursueing this idea to its fruition. It makes me happy to know that others are still interested in forth. I have not used the language since developing my own til back int the 80's, and I look forward to getting to know the language again in my spare time on my pilot. I hope that your idea is most fruitful and embraced by many people.

Thank you again,

Dennis Groves

Re: Thanks!!!

Posted by [Neal Bridges](#) on December 29, 1998 at 20:44:50:

In Reply to: *Thanks!!!* posted by Dennis Groves on December 29, 1998 at 20:32:18:

> I used to use forth, when I was in school. I have always missed the language,
I
> still have a copy of Threaded Interpreted Languages from Byte Books (my age is
> showing) I have downloaded the eval and eagerly await the registration of your
> software. Forth is the PERFECT language for the palm pilot!!! I think you
have
> had a great thought, thank you for pursueing this idea to its fruition. It
makes
> me happy to know that others are still interested in forth. I have not used
the
> language since developing my own til back int the 80's, and I look forward to
> getting to know the language again in my spare time on my pilot. I hope that
> your idea is most fruitful and embraced by many people.
> Thank you again,

Thank you, Dennis. I look forward to your feedback on the product.

Neal

Quartus Forth 1.0.0E now available

Posted by [Neal Bridges](#) on December 29, 1998 at 14:21:13:

The evaluation version of Quartus Forth 1.0.0E is now available from the main Quartus Forth page. It has all the features of the registered version, except for the ability to generate stand-alone executables.

The full manual is also online. Also, in answer to your requests, the library files are now available in .mpa (MemoPad Archive) format, for use with your Palm Desktop software.

Stay tuned for the registered version -- it's ready to go, as soon as I can get online order processing arranged with a vendor, which should be in the next 3-4 days.

Looking forward to your feedback!

Neal

- [Quartus Forth Home Page](#)

Re: Quartus Forth 1.0.0E now available - Congratulation!!

Posted by [Branko Znuderl](#) on December 29, 1998 at 16:15:48:

In Reply to: *Quartus Forth 1.0.0E now available* posted by Neal Bridges on December 29, 1998 at 14:21:13:

Neal,

> Looking forward to your feedback!

It is just loading down - ops, it is just arrived!

My feedback - C O N G R A T U L A T I O N !

Now begin exploring...

Branko

Re: Quartus Forth 1.0.0E now available - Congratulation!!

Posted by [Neal Bridges](#) on December 29, 1998 at 16:17:20:

In Reply to: *Re: Quartus Forth 1.0.0E now available - Congratulation!!* posted by Branko Znuderl on December 29, 1998 at 16:15:48:

> My feedback - C O N G R A T U L A T I O N !

> Now begin exploring...

Thanks, Branko. I'm exploring other payment processing options to get the registered version out; I'll keep you posted.

Neal

Delays!

Posted by [Neal Bridges](#) on December 29, 1998 at 12:11:44:

Further followup with PilotGear indicates that their key administrator is out of town until January 2nd, and hence they're unable to process any new products until then.

This is distressing; I'd have thought they'd have an alternate person available for such an important task.

What I'm going to do is make the evaluation version available now, and see if I

can find another method of processing orders for at least the rest of the week.

Neal

Nearly there!

Posted by [Neal Bridges](#) on December 28, 1998 at 20:48:38:

I've sent the Quartus Forth release package up to PilotGear; it's just a matter of time now until it's properly in place.

Neal

Re: Nearly there!

Posted by [Neal Bridges](#) on December 28, 1998 at 22:54:38:

In Reply to: *Nearly there!* posted by Neal Bridges on December 28, 1998 at 20:48:38:

> I've sent the Quartus Forth release package up to PilotGear; it's just a matter
> of time now until it's properly in place.

No feedback from PilotGear yet; I'll keep you all posted.

Neal

Re: Nearly there!

Posted by [Neal Bridges](#) on December 29, 1998 at 00:05:58:

In Reply to: *Re: Nearly there!* posted by Neal Bridges on December 28, 1998 at 22:54:38:

> > I've sent the Quartus Forth release package up to PilotGear; it's just a
> matter
> > of time now until it's properly in place.

> No feedback from PilotGear yet; I'll keep you all posted.

> Neal

Well, midnight and no feedback from PilotGear. It'll likely get taken care of in the morning. Thanks for the e-mails, etc.; I'll update you all here as soon as it goes up.

Neal

ANSI FLOAT extension

Posted by [Wayne Carson](#) on December 28, 1998 at 16:45:54:

Hey!

I've been playing with PilotForth and Quartus for the last four months, and you've done an impressive job. However, I want to play with math, graphing, and maybe neural nets on the pilot, but need some of the float words (FEXP especially). Do you think they will be available soon?

Thanks,
Wayne

Re: ANSI FLOAT extension

Posted by [Neal Bridges](#) on December 28, 1998 at 17:02:04:

In Reply to: *ANSI FLOAT extension* posted by Wayne Carson on December 28, 1998 at 16:45:54:

> Hey!

> I've been playing with PilotForth and Quartus for the last four months, and
> you've done an impressive job. However, I want to play with math, graphing,
> and
> maybe neural nets on the pilot, but need some of the float words (FEXP
> especially). Do you think they will be available soon?

Yes; they're on my list to do after the first release goes out.

Neal

Release still on?

Posted by [Kip DeGraaf](#) on December 28, 1998 at 14:57:28:

Sorry, I feel like a 7-year old waiting for Christmas morning to arrive.

I even put a hourly bot on PilotGear HQ to see if Quartus shows up on their homepage.

Re: Release still on?

Posted by [Neal Bridges](#) on December 28, 1998 at 17:01:27:

In Reply to: *Release still on?* posted by Kip DeGraaf on December 28, 1998 at 14:57:28:

> Sorry, I feel like a 7-year old waiting for Christmas morning to arrive.

> I even put a hourly bot on PilotGear HQ to see if Quartus shows up on their
> homepage.

It's still on; it'll be later tonight.

Neal

RsrcEdit

Posted by [Erwin Schomburg](#) on December 28, 1998 at 00:59:37:

Hi all, while the design of OnBoard C was cancelled, the Resource Editor continues, according to the Individeo website (not least due to the friendly pestering by Neal and other individuals active here). Newest version dated 27Dec.

<http://www.individeo.net/ftp/RsrcEdit.zip>

/Erwin

Memo Pad Example

Posted by [Lou Solomon](#) on December 27, 1998 at 16:37:33:

Neal, Et Al:

Quick question (I hope): I've been going over your memopad example, and (duh) finally figured out that each "memo" is a different record in the database.

So, I guess that means that each "line" in an individual memo record is a "field". How does one address (read or write, write in particular) a line in a memo pad.

BTW: If you think this is getting into too much specifics about the Pilot, go ahead and tell me... I've just finished printing out the API docs and an example MEMOPAD program in 'C', so hopefully I'll find it myself soon.

Lou Solomon

Re: Memo Pad Example

Posted by [Neal Bridges](#) on December 27, 1998 at 17:46:01:

In Reply to: *Memo Pad Example* posted by Lou Solomon on December 27, 1998 at 16:37:33:

> Quick question (I hope): I've been going over your memopad example, and (duh)
> finally figured out that each "memo" is a different record in the database.

> So, I guess that means that each "line" in an individual memo record is a
> "field". How does one address (read or write, write in particular) a line in
a
> memo pad.

The term 'record' and 'database' are misleading in this context.
Conceptually it would be more helpful to think of the way the Palm stores data
as each 'database' representing a directory or folder, and each 'record' a
flat file within it.

While a given application may treat the data in a Palm 'database record' as a
series of 'fields', it's entirely application-specific. In the case of a memo,
each 'record' is one 'field' up to 4K in size. There's no simple way to request
a write to a specific line of a memo. However, when generating your own data to
write to a new memo, you can separate lines with the line feed character, (hex)
0A or (decimal) 10.

> BTW: If you think this is getting into too much specifics about the Pilot, go
> ahead and tell me... I've just finished printing out the API docs and an
> example MEMOPAD program in 'C', so hopefully I'll find it myself soon.

Palm/Pilot-specific questions are always welcome.

Neal

Re: Memo Pad Example

Posted by [Lou Solomon](#) on December 27, 1998 at 22:32:49:

In Reply to: *Re: Memo Pad Example* posted by Neal Bridges on December 27, 1998 at
17:46:01:

Neal:

> The term 'record' and 'database' are misleading in this context.
> Conceptually it would be more helpful to think of the way the Palm stores data
> as each 'database' representing a directory or folder, and each 'record' a
> flat file within it.

> While a given application may treat the data in a Palm 'database record' as a
> series of 'fields', it's entirely application-specific. In the case of a memo,
> each 'record' is one 'field' up to 4K in size. There's no simple way to request
> a write to a specific line of a memo. However, when generating your own data to
> write to a new memo, you can separate lines with the line feed character, (hex)
> 0A or (decimal) 10.

Assuming I eventually finish my applications, it would be to hard a stretch to think of the "orders" as flat files within a directory... to hard... as a VAX/VMS programmer, I'll just think of databases as "variable length sequential files". I guess it just seemed hard to think that each memo in the memo-database was actually one long record....

So I guess to "update" a memo, you basically open the memo database, retrieve the record representing the memo, possibly/probably into a string, make whatever changes, including adding to the end of the string, and finally 'updating' the record. Does this sound right? And is there some kind of internal format to the record/individual-memo beyond what is indicated in your demonstritive memo ap (that you know about)?

BTW: I'm trying to write a memo containing a "debugging" log of my programs in progress. I guess, I'll just create the string as I go along (with the lf's between lines) and just write it at the end (or "refresh it" it periodically). However, from staring at the API, it looks like I can't dynamically read/write the record as 'different sizes', unless I call a resize command. Should I just initially write a large record, and just refresh that?

As for fields, I guess they exist in the Palm Pilot world as just screen entities...I guess I'll have to look at the magic that is memopad to figure out how it maps the record to the screen, at least making it look like multiple "lines", or strings. Just curious (or lazy)... is there a system call that takes a long string/record/whatever, and using the assumption of embedded line feeds being separate "lines", allows editing of it? I would tend to believe this, as many apps seem to have "note pad" capability, I can't imagine that everyone recreates the wheel each time.

Thanks in advance... you've been great...

Lou

PS: I lost this message twice by accidently pressing the escape key... It seems that seems to activate the reset button below. This behaviour wasn't expected (ug...)

Re: Memo Pad Example

Posted by [Neal Bridges](#) on December 27, 1998 at 23:07:56:

In Reply to: *Re: Memo Pad Example* posted by Lou Solomon on December 27, 1998 at 22:32:49:

> So I guess to "update" a memo, you basically open the memo database, retrieve the record representing the memo, possibly/probably into a string, make whatever changes, including adding to the end of the string, and finally 'updating' the record. Does this sound right? And is there some kind of internal format to the record/individual-memo beyond what is indicated in your demonstritive memo ap (that you know about)?

It's just a plain block of text. The only control characters recognized in it are Tab and LineFeed (hex 09 and 0a respectively).

> BTW: I'm trying to write a memo containing a "debugging" log of my programs in

progress. I guess, I'll just create the string as I go along (with the lf's between lines) and just write it at the end (or "refresh it" it periodically). However, from staring at the API, it looks like I can't dynamically read/write the record as 'different sizes', unless I call a resize command. Should I just initially write a large record, and just refresh that?

Off the top of my head, I'd resize the record to 4K (the maximum for a memo), write the data to the record, then resize the record to the size of the data.

> As for fields, I guess they exist in the Palm Pilot world as just screen entities...I guess I'll have to look at the magic that is memopad to figure out how it maps the record to the screen, at least making it look like multiple "lines", or strings. Just curious (or lazy)... is there a system call that takes a long string/record/whatever, and using the assumption of embedded line feeds being separate "lines", allows editing of it? I would tend to believe this, as many apps seem to have "note pad" capability, I can't imagine that everyone recreates the wheel each time.

The memopad just displays the memo text in an editable multi-line field; the word-wrapping happens automatically.

> PS: I lost this message twice by accidentally pressing the escape key... It seems that seems to activate the reset button below. This behaviour wasn't expected (ug...)

What browser are you using?

Neal

Re: Memo Pad Example

Posted by [Lou Solomon](#) on December 28, 1998 at 10:47:22:

In Reply to: *Re: Memo Pad Example* posted by Neal Bridges on December 27, 1998 at 23:07:56:

Neal:

Thanks again for the insight... I've read through the memopad.c code (available on a couple of sites, including palmcentral.com) and with your initial reply to me, I was able to basically understand what's going on. It's wild, probably about 95% of the code in the example has nothing directly to do with reading and writing the actual, individual memo. (Note: it seems that most of the code deals with displaying the memo list, handling the menu, sorting the memo names, etc.)

Thanks for the rest of your insight into the memo apps, it is appreciated.

As far as the browser resetting the text of my reply upon pressing the escape key, I'm using IE 4.0 (version 4.72). If I remember correctly, it also happened on my laptop, which is IE 3.02.

Lastly, my short term goal is to write some Quartus words that reasonably encapsulate access to databases (files, to me), and to the memo pad. It will be used by my future applications, and hopefully will be good, and presentable enough to share with other Quartus users. The PalmOS API does not seem

difficult, but in my opinion, if a reasonable person can't remember how to read & write information off the top of their head, it's too difficult, and should be encapsulated.

Lou

Re: Memo Pad Example

Posted by [Neal Bridges](#) on December 28, 1998 at 11:11:45:

In Reply to: *Re: Memo Pad Example* posted by Lou Solomon on December 28, 1998 at 10:47:22:

> Thanks again for the insight... I've read through the memopad.c code (available on a couple of sites, including palmcentral.com) and with your initial reply to me, I was able to basically understand what's going on. It's wild, probably about 95% of the code in the example has nothing directly to do with reading and writing the actual, individual memo. (Note: it seems that most of the code deals with displaying the memo list, handling the menu, sorting the memo names, etc.)

That's the size of it. The actual editing is handled by the Palm OS code for the field itself, so that isn't in the MemoPad source at all.

> As far as the browser resetting the text of my reply upon pressing the escape key, I'm using IE 4.0 (version 4.72). If I remember correctly, it also happened on my laptop, which is IE 3.02.

I don't use IE on a regular basis. I've made a note to see if there's a way to disconnect the reset button for the follow-up screen from the escape key.

> Lastly, my short term goal is to write some Quartus words that reasonably encapsulate access to databases (files, to me), and to the memo pad. It will be used by my future applications, and hopefully will be good, and presentable enough to share with other Quartus users. The PalmOS API does not seem difficult, but in my opinion, if a reasonable person can't remember how to read & write information off the top of their head, it's too difficult, and should be encapsulated.

When you access a database record, you need to acquire the record, lock its handle, write/read your data, unlock its handle, and release the record. With careful factoring, perhaps you can hide the acquiring and locking.

Neal

Re: Memo Pad Example

Posted by [Lou Solomon](#) on December 28, 1998 at 15:07:21:

In Reply to: *Re: Memo Pad Example* posted by Neal Bridges on December 28, 1998 at 11:11:45:

Neal:

Thanks for the incredibly quick response to my messages. I know you're working on the release version, so I'm doubly impressed. Once again, I really can't thank you enough.

As far as encapsulating database read's and write's, I'd like to make it truly as simple as possible for the neophyte (that's me) Palm-OS / Quartus programmer. This wordset will probably not be able to be used for every conceivable application but, hopefully, most of them. Sure they'll be compromises, but ones that people either wont mind, or can get around easier.

My basic assumptions for this database access wordset is:

- the application will only be opening one database at a time, so there is no need, on the high level to handle "handles" of any sort. All handles will be stored and maintained by the lower level words that deal with the PalmOS-API (I guess using global variables to store them between words).
- the database will simulate a typical ISAM file, and have a permanent "primary" key (the specification of which will be kept in the database header). Records will "always" be kept in primary key order (other sorting will be allowed, but before modifications are made to the database, the sort order will be returned to the primary key). The comparison routine use to find and sort records, will be based upon a simple, ASCII comparison function of the primary key specification.
- All strings to this wordset will use forth standard counted strings.
- Any other simplifications (such as always assuming Read/Write mode) will be made.

My first question...take the above example of always assuming a read/write mode on the database. Assuming this is "my application's" database (ie: not the address book, etc.), is this a reasonable assumption? What could go wrong?

Another question I have to you (and to the other Forth folks out there) is the use of passing parameters to these words via global variables, rather than the stack. For example, I'd like to keep the database handle, the current record handle, in variables, so that the upper levels of code need not worry about maintaining it, and passing it back down.... Is this cool?

Or, to use another example, I've been thinking about having a flag to indicate whether a RECORD_FIND_BY_KEY word does an exact match on the key or not. For example, if I look up with the key of "BROWN", based upon the flag called "EXACT_MATCH_REQUIRED", will return a record of "BROWNING" or not (as it is not an exact match). (for those Xbase programmers out there, this would be the equivalent of the SET EXACT ON command).

Sure, I can create the API to something like:

```
find_record_by_key ( key_to_find, exact_flag)
```

but in my opinion, an application is either going to want that flag either

always on, or always off, so if it's a global variable, it can be set once at the top of the app, almost like a "preference" is set.

Just curious about other's opinions.... thanks in advance...

Lou

PS: I've managed some big multi-programmer projects in my time, and I appreciate the fact that one should not generally "hide" parameters by using global variables, in any language, not just forth. But I also know that being practical is important too... so as long as the simplification is done with the proper documentation, it can be for the best....

, to consider the ISAM simulation, I'd like to have a global parameter set

Take, as a completely arbitrary example, the concept of the secret flag, where records marked secret should, according to the "cookbook", be respected, in applications. Using the above example API, I'd probably not want to add a secret parameter to every call. But I could, theoretically, add a "show_secret" global flag, that works behind the scenes. For example, on the get_next_record call, the actual processing could be something like (please excuse the mixture of forth and whatever syntax):

```
: get_next_record( | key_value, record_value, error_code)
dm_queryNextInCategory (or whatever actual PalmOS API call gets next record)
if end_of_file or other error, throw error
if record_secret_attribute_set then
if SHOW_SECRET is not defined or if defined and SHOW_SECRET = False
then iterate/repeate/word skipping over this record
endif
endif
return-record-values-back-to calling word
```

My point is that this routine checks to see if there is a word SHOW_SECRET in the dictionary, and if it is present, what the value of it is. Otherwise it assumes to respect the secret bit, and skip over the records.

So is this cool, so to speak? I've been programming

Re: Memo Pad Example

Posted by [Neal Bridges](#) on December 28, 1998 at 22:02:25:

In Reply to: *Re: Memo Pad Example* posted by Lou Solomon on December 28, 1998 at 15:07:21:

> - All strings to this wordset will use forth standard counted strings.

Lou, the 'new' standard for strings is the (c-addr u) specification. I'd avoid counted strings if I were you.

> My first question...take the above example of always assuming a read/write mode

> on the database. Assuming this is "my application's" database (ie: not the
> address book, etc.), is this a reasonable assumption? What could go wrong?

I can't think of a major problem there. Specifying a mode at open time might be helpful, though. As Einstein said, as simple as possible -- but no simpler.

> Another question I have to you (and to the other Forth folks out there) is the
> use of passing parameters to these words via global variables, rather than the
> stack. For example, I'd like to keep the database handle, the current record
> handle, in variables, so that the upper levels of code need not worry about
> maintaining it, and passing it back down.... Is this cool?

Yes -- if a value really is global, keep it in a global variable. But access it through an interface -- write words to access it, rather than using ! and @. That way you retain control of it in all your source should you decided to alter the underlying model.

> Or, to use another example, I've been thinking about having a flag to indicate
> whether a RECORD_FIND_BY_KEY word does an exact match on the key or not. For
> example, if I look up with the key of "BROWN", based upon the flag called
> "EXACT_MATCH_REQUIRED", will return a record of "BROWNING" or not (as it is
> not an exact match). (for those Xbase programmers out there, this would be the
> equivalent of the SET EXACT ON command).
> Sure, I can create the API to something like:
> find_record_by_key (key_to_find, exact_flag)
> but in my opinion, an application is either going to want that flag either
> always on, or always off, so if it's a global variable, it can be set once at
> the top of the app, almost like a "preference" is set.

That sounds logical as well -- though if later you wanted to expand your lexicon to allow opening more than one database, you'll have a problem.

Again, even if the underlying implementation of a data item is a global variable, control access to it through words you define as an interface to it.

[snip...]

> My point is that this routine checks to see if there is a word SHOW_SECRET in
> the dictionary, and if it is present, what the value of it is. Otherwise it
> assumes to respect the secret bit, and skip over the records.

> So is this cool, so to speak? I've been programming

This will not work for you in compiled code. Forth word headers are not available in stand-alone applications; there's no dictionary in a compiled app, hence it can't be searched at run-time.

Neal

Re: Memo Pad Example

Posted by [Lou Solomon](#) on December 28, 1998 at 23:09:44:

In Reply to: *Re: Memo Pad Example* posted by Neal Bridges on December 28, 1998 at 22:02:25:

Neal:

Thanks again for responding.

1. Sorry for the counted strings.... I meant the (c-addr u) ones, but I guess I thought those were the counted ones....

2. Sorry about the mangled message... the bottom part was supposed to be cut out... but I'm glad you saw the snippet about the 'looking' up of words, and how it won't work in a compiled ap. I will keep this in mind.....

Lou

***Very* newbie questions**

Posted by [Chris D.](#) on December 26, 1998 at 18:45:42:

Hey,

At the expense of sounding like an idiot, I'm writing this message. I've wanted something fast, easy, and most importantly, free, to write Pilot apps. Quartus does look pretty cool. I've done some Windows programming (in VB.. heh), so I have some idea of how to make a computer do what I want it to (more often than not, what I don't want it to do).

Basically, it boils down to this: Is there a good site, or someone willing to help for that matter, that could [concisely] explain the basic structure of Forth? I looked at www.forth.org, and found tons of stuff I didn't really want to [or have the time to] dig through. I know, I know, I should read some sample source code, but I'm feeling slightly lazy today, and want a basic primer as to the structure of the language. Even just a explanation of how & why the basic included syncname app works would be good.

Thanks,
Chris

Re: *Very* newbie questions

Posted by [M Anderson](#) on January 02, 1999 at 17:26:08:

In Reply to: **Very* newbie questions* posted by Chris D. on December 26, 1998 at 18:45:42:

> Basically, it boils down to this: Is there a good site, or someone willing to
> help for that matter, that could [concisely] explain the basic structure of

> Forth?

I'm trying to learn the language, too. I thought this page was excellent...
<http://cdr.stanford.edu/spdl/manuals/forthtut.html>

Re: **Very** newbie questions

Posted by [Neal Bridges](#) on January 03, 1999 at 17:43:39:

In Reply to: *Re: *Very* newbie questions* posted by M Anderson on January 02, 1999 at 17:26:08:

> > Basically, it boils down to this: Is there a good site, or someone willing to
> > help for that matter, that could [concisely] explain the basic structure of
> > Forth?

> I'm trying to learn the language, too. I thought this page was excellent...
> <http://cdr.stanford.edu/spdl/manuals/forthtut.html>

At first glance I agree. I've added it to the Online Resources section of the manual.

Thanks!

Neal

Re: **Very** newbie questions

Posted by [Neal Bridges](#) on December 26, 1998 at 19:15:31:

In Reply to: **Very* newbie questions* posted by Chris D. on December 26, 1998 at 18:45:42:

> Hey,

> At the expense of sounding like an idiot, I'm writing this message. I've wanted
> something fast, easy, and most importantly, free, to write Pilot apps. Quartus
> does look pretty cool. I've done some Windows programming (in VB.. heh), so I
> have some idea of how to make a computer do what I want it to (more often than
> not, what I don't want it to do).
> Basically, it boils down to this: Is there a good site, or someone willing to
> help for that matter, that could [concisely] explain the basic structure of
> Forth? I looked at www.forth.org, and found tons of stuff I didn't really want
> to [or have the time to] dig through. I know, I know, I should read some
> sample source code, but I'm feeling slightly lazy today, and want a basic
> primer
> as to the structure of the language. Even just a explanation of how & why the
> basic included syncname app works would be good.

Welcome!

I've posted a new html file in the Quartus Forth File Area, called *tutorial.htm*. It's preliminary, and a work-in-progress; I look forward to your feedback.

I've got a number of balls in the air at the moment; what would be ideal for me is if you'd either post or e-mail any specific questions you have about, say, the syncname example. It's very straightforward for me to respond to a question; to try and anticipate all questions and write a tutorial is much more time-consuming.

Neal

- [File Area](#)

Updated 0.9.9U in the File Area

Posted by [Neal Bridges](#) on December 26, 1998 at 16:26:46:

Fixed that problem with the startup code in 0.9.9U -- it was a one-character typo, my apologies. I've updated the .zip in the Quartus Forth File Area-- the version number is the same, but the build timestamp is about 10 minutes ago.

Monday is still the launch date!

Neal

- [File Area](#)

Bug in 0.9.9U -- here's a fix

Posted by [Neal Bridges](#) on December 24, 1998 at 19:45:25:

Mark Beckman has uncovered a bug in 0.9.9U as relates to the *startup.quartus* memo. I know what it is, and I'll fix it in the kernel on Saturday. That'll teach me to put up a release without running the regression tests against it. I blame Christmas.

Here's a temporary fix:

Put ABORT at the bottom of your *startup.quartus* memo.
You'll see

Exception in file: startup.quartus

at startup as a result of the ABORT, but the system won't crash.

Thanks for your patience, and I'll get the new version up as soon as I'm back in the city.

Kind regards,
Neal

Re: Bug in 0.9.9U -- here's a fix

Posted by [Matthias Schneider](#) on December 28, 1998 at 02:39:07:

In Reply to: *Bug in 0.9.9U -- here's a fix* posted by Neal Bridges on December 24, 1998 at 19:45:25:

> Mark Beckman has uncovered a bug in 0.9.9U as relates to the
> *startup.quartus* memo. I know what it is, and I'll fix it in the
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> on Saturday. That'll teach me to put up a release without running the
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> Put ABORT at the bottom of your *startup.quartus* memo.
> You'll see

> Exception in file: *startup.quartus*

> at startup as a result of the ABORT, but the system won't crash.

I think I have to apologise for the bug, too. Without Neal wanting to fulfil all my personal add-on-wishes this wouldn't have happend, I suppose.

Matthias

> Thanks for your patience, and I'll get the new version up as soon as I'm back
in
> the city.

> Kind regards,
> Neal

Re: Bug in 0.9.9U -- here's a fix

Posted by [Neal Bridges](#) on December 29, 1998 at 01:11:47:

In Reply to: *Re: Bug in 0.9.9U -- here's a fix* posted by Matthias Schneider on December 28, 1998 at 02:39:07:

> I think I have to apologise for the bug, too. Without Neal wanting to fulfil
> all my personal add-on-wishes this wouldn't have happend, I suppose.

Not to worry, Matthias -- it was the joint result of a typo and my failure to run my full regression test before I posted the code. Normally I test both with, and without, a *startup.quartus* file; I skipped that on this occasion, and of course it bit me :)

Neal

Location of D.

Posted by [Lou Solomon](#) on December 24, 1998 at 13:15:20:

NB:

What is the location of the D. word (the word to print out a double cell value on the stack)? I can't seem to find it anywhere.

Lou

Re: Location of D.

Posted by [Neal Bridges](#) on December 24, 1998 at 13:23:17:

In Reply to: *Location of D.* posted by Lou Solomon on December 24, 1998 at 13:15:20:

> NB:

> What is the location of the D. word (the word to print out a double cell value
> on the stack)? I can't seem to find it anywhere.

Lives in *double.txt*, in the File Area.

: D. 0 D.R SPACE ;

Neal

Re: Location of D.

Posted by [Lou Solomon](#) on December 24, 1998 at 18:46:50:

In Reply to: *Re: Location of D.* posted by Neal Bridges on December 24, 1998 at 13:23:17:

Neal:

Sorry for the question... I just noticed 'my double' is a version from 6/22/98, which looks extremely different from this version. It contains words like D= D< DMAX DMIN....

I have no idea how it got the name double....

Anyway.... merry xmas!

Lou

PS: Just thought I'd tell you... just picked up the Minstrel wireless modem for Palmpilot, with the GoAmerica ISP via Bell Atlantic. It connects to the web great, but alas, most web pages don't look very well on the pilot. Oh well... still, its pretty

amazing. Hopefully, someday, I'll be writing a program (via Quartus) to access my company's host via wireless internet access.

> > NB:
> > What is the location of the D. word (the word to print out a double cell value
> > on the stack)? I can't seem to find it anywhere.
> Lives in *double.txt*, in the File Area.
> : D. 0 D.R SPACE ;
> Neal

Minstrel wireless modem (was Re: Location of D.)

Posted by [Neal Bridges](#) on December 25, 1998 at 11:42:34:

In Reply to: *Re: Location of D.* posted by Lou Solomon on December 24, 1998 at 18:46:50:

> PS: Just thought I'd tell you... just picked up the Minstrel wireless modem for Palmpilot,
> with the GoAmerica ISP via Bell Atlantic. It connects to the web great, but alas, most web pages don't look very well on the pilot. Oh well... still, its pretty amazing. Hopefully, someday, I'll be writing a program (via Quartus) to access my company's host via wireless internet access.

Interesting stuff. I'm looking forward to coding for the Palm VII.

Neal

Merry X-Mas

Posted by [Erwin Schomburg](#) on December 24, 1998 at 06:56:55:

Hi Neal, a merry Christmas and a flu-free new year. Thanks to let us participate in a most interesting project, and thanks for giving me back some fun in coding with Quartus. I don't know if I will do more than a couple of exercises, but time will show.

/Erwin

Re: Merry X-Mas

Posted by [Branko Znuderl](#) on December 24, 1998 at 08:34:58:

In Reply to: *Merry X-Mas* posted by Erwin Schomburg on December 24, 1998 at 06:56:55:

> Hi Neal, a merry Christmas and a flu-free new year. Thanks to let us participate
> in a most interesting project, and thanks for giving me back some fun in coding
> with Quartus. I don't know if I will do more than a couple of exercises, but
> time will show.

> /Erwin

I also agree with above wishes and I would add:

I wish a happy lift of realese of Quartus -
I, for sure, will be among first who will register it and
shartly after that submit my little progie....

Branko

Re: Merry X-Mas

Posted by [Neal Bridges](#) on December 24, 1998 at 11:53:49:

In Reply to: *Re: Merry X-Mas* posted by Branko Znuderl on December 24, 1998 at
08:34:58:

> > Hi Neal, a merry Christmas and a flu-free new year. Thanks to let us
participate
> > in a most interesting project, and thanks for giving me back some fun in
coding
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> I wish a happy lift of realese of Quartus -
> I, for sure, will be among first who will register it and
> shartly after that submit my little progie....

> Branko

Thank you, gentlemen. It's been a good year.

Best wishes for you both, and to all of you who have been on-board these last
few months. Next year will be even more interesting!

Kind regards,
Neal

IrDA access

Posted by [Neal Bridges](#) on December 24, 1998 at 00:57:31:

Here's something that came up on Usenet:

In article <367d15af.26791657@news.mindspring.com>, beroset@mindspring.com wrote:

```
> I've got a Palm III and have been using Neil Bridges' excellent
> Quartus Forth for development. I need to gain access to the IR port
> directly -- specifically, I need to be able to bypass the IrDA stack
> entirely, since I need to use the port in NRZ mode which is not the
> standard IrDA mode. I have the DragonBall databook, and I assume that
> the edge connector serial port and the IR port are sharing the single
> UART provided on the processor. Can anyone out there verify this? If
> so, I'd like to know the mechanism by which it switches from one to
> the other. Thanks for the info in advance.
```

You're right that they share the same UART.

The IRDA EN bit is bit 5 of the UART Miscellaneous Register, (hex) FFFFF908. It's a 16-bit register you can access in Quartus Forth using @a and !a. Here's a code snippet:

```
(hex) fffff908. 2constant uart-misc-reg
(binary) 10000 constant irda-enable-mask
```

```
: irda-enable ( -- )
  uart-misc-reg @a
  irda-enable-mask or
  uart-misc-reg !a ;
```

```
: irda-disable ( -- )
  uart-misc-reg @a
  irda-enable-mask invert and
  uart-misc-reg !a ;
```

These words have the same effect as the 'Beam Receive on/off' option in the Preferences panel.

Neal

Re: IrDA access

Posted by [Ed Beroset](#) on December 28, 1998 at 18:07:29:

In Reply to: *IrDA access* posted by Neal Bridges on December 24, 1998 at 00:57:31:

```
> Here's something that came up on Usenet:
```

```
> In article <367d15af.26791657@news.mindspring.com>,
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> > standard IrDA mode. I have the DragonBall databook, and I assume that
> > the edge connector serial port and the IR port are sharing the single
> > UART provided on the processor. Can anyone out there verify this? If
> > so, I'd like to know the mechanism by which it switches from one to
> > the other. Thanks for the info in advance.

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> : irda-enable ( -- )  
>   uart-misc-reg @a  
>   irda-enable-mask or  
>   uart-misc-reg !a ;
```

```
> : irda-disable ( -- )  
>   uart-misc-reg @a  
>   irda-enable-mask invert and  
>   uart-misc-reg !a ;
```

>

> These words have the same effect as the 'Beam Receive on/off' option in the
> Preferences panel.

I think I'll just follow up here instead of the newsgroup, since you've cross-posted it. Perhaps my question was unclear. What I wanted to know was the mechanism by which the UART gets switched from the serial port connector to the IR transceiver on the Palm III.

The IrDA enable and disable words you've defined turn IrDA *mode* on and off, (i.e. change the signalling mode from NRZ to "short pulse"), but don't actually cause the Palm III to change from one physical port to the other. It's this latter mechanism that I need. Ideally what I'd be able to do is to use the standard Palm OS serial library routines but redirect the output to the IR diode without using the IrDA (a.k.a short pulse) signalling. I suspected originally that the GPIO pin might control the switch, but it appears not to be so. I'll keep y'all posted when I finally do figure this out!

Ed



Re: IrDA access

Posted by [Neal Bridges](#) on January 01, 1999 at 15:19:32:

In Reply to: *Re: IrDA access* posted by Ed Beroset on December 28, 1998 at 18:07:29:

> I think I'll just follow up here instead of the newsgroup, since you've
> cross-posted it. Perhaps my question was unclear. What I wanted to
> know was the mechanism by which the UART gets switched from the serial
> port connector to the IR tranciever on the Palm III.

> The IrDA enable and disable words you've defined turn IrDA *mode* on and off,
> (i.e. change the signalling mode from NRZ to "short pulse"), but don't
actually

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> latter mechanism that I need. Ideally what I'd be able to do is to use the
> standard Palm OS serial library routines but redirect the output to the IR
> diode without using the IrDA (a.k.a short pulse) signalling. I suspected
> originally that the GPIO pin might control the switch, but it appears not to
be

> so. I'll keep y'all posted when I finally do figure this out!

I missed this message earlier, Ed -- the message board doesn't have a 'show new
messages' feature.

I'm not entirely sure how this is done; have you learned anything yet? I'll
look around.

Neal

Re: IrDA access

Posted by [Ed Beroset](#) on January 02, 1999 at 17:32:01:

In Reply to: *Re: IrDA access* posted by Neal Bridges on January 01, 1999 at 15:19:32:

> > What I wanted to
> > know was the mechanism by which the UART gets switched from the serial
> > port connector to the IR tranciever on the Palm III.

[...]

> > so. I'll keep y'all posted when I finally do figure this out!

> I missed this message earlier, Ed -- the message board doesn't have a 'show
new
> messages' feature.

> I'm not entirely sure how this is done; have you learned anything yet? I'll
> look around.

Well, I've learned a great deal, but not yet the solution to my problem! :-)
One useful side-effect is that I've developed a group of Forth routines for
accessing the serial port. As soon as I clean them up a bit, I plan to upload
them so that others may use them (and perhaps improve them!)

I've also learned a lot about what does NOT control the serial/IrDA port

multiplexing. So far, it seems that I have ruled out **all** candidate I/O lines, but I'm double checking my work. That has turned into a group of Forth words to access and display the contents of port registers, but nothing a person couldn't easily duplicate.

All in all, I haven't found the answer yet, but I WILL figure this out. If all else fails, I have my jeweler's screwdriver and an oscilloscope standing by...

Ed

Re: IrDA access

Posted by [Neal Bridges](#) on January 03, 1999 at 17:44:58:

In Reply to: *Re: IrDA access* posted by Ed Beronet on January 02, 1999 at 17:32:01:

> Well, I've learned a great deal, but not yet the solution to my problem! :-)
> One useful side-effect is that I've developed a group of Forth routines for
> accessing the serial port. As soon as I clean them up a bit, I plan to upload
> them so that others may use them (and perhaps improve them!)

I look forward to seeing that.

> I've also learned a lot about what does NOT control the serial/IrDA port
> multiplexing. So far, it seems that I have ruled out **all** candidate I/O
lines,
> but I'm double checking my work. That has turned into a group of Forth words
to
> access and display the contents of port registers, but nothing a person
couldn't
> easily duplicate.

Doubtless useful, though. Please post them too when you get a chance.

> All in all, I haven't found the answer yet, but I WILL figure this out. If
all
> else fails, I have my jeweler's screwdriver and an oscilloscope standing by...

Brave man. I wish you luck.

Neal

Quartus Forth 0.9.9U now available

Posted by [Neal Bridges](#) on December 23, 1998 at 23:58:20:

The last pre-release version of Quartus Forth, version 0.9.9U, is now available in the File Area.

The release version will be available early next week, along with full documentation. Until then, the existing beta documentation applies.

Enjoy!

Neal

- [File Area](#)

Re: Quartus Forth 0.9.9U now available

Posted by [Mark Beckman](#) on December 24, 1998 at 12:33:42:

In Reply to: *Quartus Forth 0.9.9U now available* posted by Neal Bridges on December 23, 1998 at 23:58:20:

Well,
I'm getting a "Fatal Exception" when I start version 0.9.9U and a simple startup file (between the dashed lines below). I have deleted and reinstalled several times, removed all hacks, same results. I have Installed version 0.95b and it still works fine.
The exception does not occur when I have no startup file.
The exception does not occur when I include the same (name changed) memo via "include".

A blank startup file (just the title) does not cause the exception. but has the usual "Startup.Quartus? undefined word" error.

I have not tried to hard reset my Palm III and re-install everything (I hate doing that when it can be avoided) but I might try that later (after Christmas) if I am the only one experiencing this problem.

Thanks
Mark Beckman

```
-----  
\ Startup.Quartus  
.( Startup.Quartus)  
-----
```

Update to the Update

Posted by [Neal Bridges](#) on December 23, 1998 at 00:45:58:

Just read my mail from PilotGear. They're closing for Christmas tomorrow at noon, until Monday December 28th; I'm not likely to be ready to roll by noon tomorrow, which means Quartus Forth 1.0.0 won't go on sale until Monday.

It's actually just as well; if it were posted at PilotGear HQ tomorrow, and there were any problems with the distribution, I wouldn't be able to address them until Monday anyway.

What I will do is post the final beta tomorrow. It has all up-to-the-minute changes, and should be of some use to you for the next few days.

Neal

Status Update

Posted by [Neal Bridges](#) on December 22, 1998 at 00:39:19:

In case anyone is wondering: I've been working on the documentation for the release; it's going very well indeed. It's mostly complete; I'm adding example code and a Forth language overview, and then I'll go live with Quartus Forth 1.0.0!

Neal

Re: Status Update

Posted by [Branko Znuderl](#) on December 22, 1998 at 03:37:22:

In Reply to: *Status Update* posted by Neal Bridges on December 22, 1998 at 00:39:19:

Neal, that is great - but question - approx. when?

Branko

> In case anyone is wondering: I've been working on the documentation for the
> release; it's going very well indeed. It's mostly complete; I'm adding example
> code and a Forth language overview, and then I'll go live with Quartus Forth
> 1.0.0!

> Neal

Re: Status Update

Posted by [Neal Bridges](#) on December 22, 1998 at 11:01:02:

In Reply to: *Re: Status Update* posted by Branko Znuderl on December 22, 1998 at 03:37:22:

> Neal, that is great - but question - approx. when?

Barring unforeseen circumstance, Wednesday.

> Branko

>

> > In case anyone is wondering: I've been working on the documentation for the
> > release; it's going very well indeed. It's mostly complete; I'm adding

example
> > code and a Forth language overview, and then I'll go live with Quartus Forth
> > 1.0.0!

S" from the FILE wordset

Posted by [Neal Bridges](#) on December 22, 1998 at 00:30:40:

This definition allows S" to be interpreted -- it has one buffer, which will be overwritten by the next interpreted S".

```
create buffer 80 allot
: S" ( -- c-addr u )
  [char] " parse
  state @ if postpone sliteral
  else tuck buffer swap move
    buffer swap
  then ; immediate
```

Neal

Re: S" from the FILE wordset

Posted by [Ed Beroset](#) on December 22, 1998 at 07:05:07:

In Reply to: *S" from the FILE wordset* posted by Neal Bridges on December 22, 1998 at 00:30:40:

> This definition allows S" to be interpreted -- it has one buffer, which will
> be
> overwritten by the next interpreted S".

>

```
> create buffer 80 allot
> : S" ( -- c-addr u )
>   [char] " parse
>   state @ if postpone sliteral
>   else tuck buffer swap move
>     buffer swap
>   then ; immediate
```

>

> Neal

That does the trick, Neal. Thanks again!

Ed

bug in S"

Posted by [Ed Berozet](#) on December 21, 1998 at 22:42:55:

I think I've discovered a bug in the Quartus implementation of S" .
Specifically, if I use it in interactive mode as in:

```
s" Howdy!
```

I should get the address and count pushed onto the stack in that order. Under Quartus, however, I seem to get either the ASCII values of the first two letters or nothing at all pushed onto the stack. Have I misunderstood something, or is this a bona fide bug?

Re: bug in S"

Posted by [Neal Bridges](#) on December 22, 1998 at 00:00:12:

In Reply to: *bug in S"* posted by Ed Berozet on December 21, 1998 at 22:42:55:

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> I think I've discovered a bug in the Quartus implementation of S" .  
> Specifically, if I use it in interactive mode as in:
```

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> s" Howdy!
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```
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> Quartus, however, I seem to get either the ASCII values of the first two  
letters
```

```
> or nothing at all pushed onto the stack. Have I misunderstood something, or  
is
```

```
> this a bona fide bug?
```

It's not a bug; what you have there is the CORE version of S", which isn't interactive (i.e. it has no interpretation semantics). I have a version of S" from the file wordset available; if it's not in the file area I'll post it here, if you'd like it. That version works in interpretation state also.

Neal

Compiled Code

Posted by [Mike Will](#) on December 21, 1998 at 22:29:26:

Neal,

I too would like to write a 'see' word.

When you say that Quartus compiles to native code, do you mean headerless Forth or some more obscure format?

Thanks.

Re: Compiled Code

Posted by [Neal Bridges](#) on December 21, 1998 at 23:59:03:

In Reply to: *Compiled Code* posted by Mike Will on December 21, 1998 at 22:29:26:

> Neal,
> I too would like to write a 'see' word.
> When you say that Quartus compiles to native code, do you mean headerless
Forth
> or some more obscure format?
> Thanks.

It's headerless Forth, but the Forth itself is native 68000 machine language.
It makes it a bit tricky to write a SEE word, though I have done some work along
those lines.

Neal

Re: Compiled Code

Posted by [Neal Bridges](#) on December 22, 1998 at 00:32:13:

In Reply to: *Re: Compiled Code* posted by Neal Bridges on December 21, 1998 at
23:59:03:

> > Neal,
> > I too would like to write a 'see' word.
> > When you say that Quartus compiles to native code, do you mean headerless
> Forth
> > or some more obscure format?
> > Thanks.

> It's headerless Forth, but the Forth itself is native 68000 machine language.

> It makes it a bit tricky to write a SEE word, though I have done some work
along
> those lines.

An amendment -- when Quartus Forth compiles your source, it creates
68000-machine language with Forth headers; when a stand-alone executable is
created, the headers are not retained in the target.

Neal

viewing dpans94.zip

Posted by [Ken Butterfield](#) on December 21, 1998 at 16:13:59:

I am just starting to look at Quartus and I am very impressed. I downloaded most of the files area last Friday and spent the weekend learning to program in Quartus. (I have only had a PalmIII for one week, so I am still a newbe!)

I was able to try several of the applications, and I was able to convert a couple of my old FORTH programs to run on Quartus. Boy is this thing fast!!

I was not able to view the ansi FORTH document. It unzipped to a database file so I hotsync'ed to the palmIII where it shows up as a record. How do I look at it? I suspect I need to have a particular application in the palmIII.

Thanks in advance for any help.

Ken B

Re: viewing dpans94.zip

Posted by [Neal Bridges](#) on December 21, 1998 at 16:38:09:

In Reply to: *viewing dpans94.zip* posted by Ken Butterfield on December 21, 1998 at 16:13:59:

> I am just starting to look at Quartus and I am very impressed. I downloaded most
> of the files area last Friday and spent the weekend learning to program in
> Quartus. (I have only had a PalmIII for one week, so I am still a newbe!)

I'm glad you like it!

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Any feedback on the environment in general I'd be glad to hear.

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> so I hotsync'ed to the palmIII where it shows up as a record. How do I look at
> it? I suspect I need to have a particular application in the palmIII.

You'll need a Doc reader. There are at least 3 available; AportisDoc, TealDoc, and a free reader called CSpotRun. Check www.pilotgear.com, you'll turn one up.

Neal

Re: viewing dpans94.zip and first impressions.

Posted by [Ken Butterfield](#) on December 21, 1998 at 18:06:17:

In Reply to: *Re: viewing dpans94.zip* posted by Neal Bridges on December 21, 1998 at 16:38:09:

> You'll need a Doc reader. There are at least 3 available; AportisDoc, TealDoc,
> and a free reader called CSpotRun. Check www.pilotgear.com, you'll turn one up.

> Neal

Hi Neal;

Thanks for responding so fast! I have just downloaded tealdoc from the net.

> Any feedback on the environment in general I'd be glad to hear.

My experience dates back to typing a figforth compiler into a Pet computer. More recently I have been using MaxFORTH on the New Micro systems. The source code is stored in a loaptop and compilation is done over the serial port. I have embedded applications in instruments that are still in use after 10 years. Once in a while I am asked to add a new function for special tests, etc and can do so even though the application is in ROM! The Quartus environment looks pretty nice compared to any C, or other compile edit link run system. I have been using the hotsync to load into the palm III. My graffiti is coming along and I love interacting between the memopad and Quartus. INCLUDE and NEEDS work great. As a result, my first set of batteries only lasted 1 week! I have not succeeded in hotsyncing to the pilot emulator but I have just tracked down my old lapsync cable and will try again. So far I have been using the emulator to do WORDS while typing into the PALMIII.

I find the files area a pure treasure while getting started. I also read most of the dialog and archived dialog. Your HTML docs are a good start. The first word I wrote was DUMP. I like to see what is going on. A FORTH Decompiler (SEE) and perhaps a DISASSEMBLE word would round out the environment for me. Another alternative would be a VIEW words that was hotlinked to source code stored in the PALMIII. I suspect these would not be as useful to the general public and might give you qualms once your system goes out of Beta. However, I find looking at the source very useful and the best way to learn good practice.

Last, I can't believe how fast you respond to dialog!!!! I am not the first to think there must be more than one of you. I hope I can come up with enough feedback in the future to make your response time worth while! Until then I hope an enthusiastic response will suffice.

Ken B

Neal

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> > so I hotsync'ed to the palmIII where it shows up as a record. How do I look at

> > it? I suspect I need to have a particular application in the palmIII.

Re: viewing dpans94.zip and first impressions.

Posted by [Neal Bridges](#) on December 22, 1998 at 00:03:28:

In Reply to: *Re: viewing dpans94.zip and first impressions.* posted by Ken Butterfield on December 21, 1998 at 18:06:17:

> > Any feedback on the environment in general I'd be glad to hear.

> My experience dates back to typing a figforth compiler into a Pet computer.

> More recently I have been using MaxFORTH on the New Micro systems. The source code is stored in a loaptop and compilation is done over the serial port. I have

> embedded applications in instruments that are still in use after 10 years. Once

> in a while I am asked to add a new function for special tests, etc and can do so

> even though the application is in ROM! The Quartus environment looks pretty nice compared to any C, or other compile edit link run system. I have been using

> the hotsync to load into the palm III. My graffiti is coming along and I love interacting between the memopad and Quartus. INCLUDE and NEEDS work great. As a

> result, my first set of batteries only lasted 1 week! I have not succeeded in hotsyncing to the pilot emulator but I have just tracked down my old lapsync cable and will try again. So far I have been using the emulator to do WORDS while typing into the PALMIII.

They tend to last about a week for me, too. I use the Rayovac Renewable Alkalines, which works out to be much cheaper than buying one-use batteries.

> I find the files area a pure treasure while getting started. I also read most of

> the dialog and archived dialog. Your HTML docs are a good start. The first word

> I wrote was DUMP. I like to see what is going on. A FORTH Decompiler (SEE) and

> perhaps a DISASSEMBLE word would round out the environment for me. Another alternative would be a VIEW words that was hotlinked to source code stored in

> the PALMIII. I suspect these would not be as useful to the general public and
> might give you qualms once your system goes out of Beta. However, I find
looking
> at the source very useful and the best way to learn good practice.

DISASSEMBLE is an adventuresome project; a 68000 disassembler shouldn't be too
tough, but right now I don't have the cycles to devote to it. No reason why
someone else can't start on it, though.

> Last, I can't believe how fast you respond to dialog!!!! I am not the first
to
> think there must be more than one of you. I hope I can come up with enough
> feedback in the future to make your response time worth while! Until then I
hope
> an enthusiastic response will suffice.

I look forward to any feedback you can provide!

Neal

HwrBacklight

Posted by [Daryl Lee](#) on December 21, 1998 at 15:01:22:

I've been trying to bootstrap my dormant Forth skills into the Palm III, using
your Quartus 0.9.5b. I decided to start at the very beginning, browsing the
archives of your discussion group to see what I can learn from others. You
updated "backlight" on 98.6.10, dropping the previous "systrap"
implementation. When I try it on my Palm, I get "HwrBacklight? undefined word".

I cut-and-pasted from the archive to MS-Outlook's Notes, whence it was
HotSynced to my Palm. All appears in order, except it doesn't work. The other
old example "syncname" works fine. Any clue as to what's wrong?

Thanks,
Daryl

Re: HwrBacklight

Posted by [Neal Bridges](#) on December 21, 1998 at 15:17:39:

In Reply to: *HwrBacklight* posted by Daryl Lee on December 21, 1998 at 15:01:22:

> I've been trying to bootstrap my dormant Forth skills into the Palm III, using
> your Quartus 0.9.5b. I decided to start at the very beginning, browsing the
> archives of your discussion group to see what I can learn from others. You
> updated "backlight" on 98.6.10, dropping the previous "systrap"
> implementation. When I try it on my Palm, I get "HwrBacklight? undefined
word".

> I cut-and-pasted from the archive to MS-Outlook's Notes, whence it was

> HotSynced to my Palm. All appears in order, except it doesn't work. The other
> old example "syncname" works fine. Any clue as to what's wrong?

Hi Daryl. The Hwr* calls were accidentally left out of 0.9.5. They've been put back in in the as-yet-unreleased version.

If you need HwrBacklight, use
: HwrBacklight
41706 systrap 2drop d0 drop ;

Neal

Re: HwrBacklight

Posted by [Daryl Lee](#) on December 21, 1998 at 16:08:05:

In Reply to: *Re: HwrBacklight* posted by Neal Bridges on December 21, 1998 at 15:17:39:

> Hi Daryl. The Hwr* calls were accidentally left out of 0.9.5. They've been put
> back in in the as-yet-unreleased version.

> If you need HwrBacklight, use

>
> : HwrBacklight
> 41706 systrap 2drop d0 drop ;
>

Thanks. That explains why HwrBatteryLevel also fails. I'll wait for the next version and get on with other details.

Daryl

Sugestion for File area

Posted by [Branko Znuderl](#) on December 19, 1998 at 14:48:53:

Neal,

I would be nice if you could prepare a zip file with all files (up-to-date) in your File Area. Now I need to download each file seperately.

Branko

Re: Sugestion for File area

Posted by [Neal Bridges](#) on December 19, 1998 at 15:29:39:

In Reply to: *Sugestion for File area* posted by Branko Znuderl on December 19, 1998 at 14:48:53:

> Neal,
> I would be nice if you could prepare a zip file with
> all files (up-to-date) in your File Area.
> Now I need to download each file seperately.

Branko, I agree. I'll be making them available as a MemoPad Archive file.

Neal

Tools on the PC side

Posted by [Cyril Elkaim](#) on December 19, 1998 at 14:35:37:

Hi Piloteers,

Not directly a question about Quartus, but I'm searching to know what are the tools and tips used by this community to develop Forth code on the Pilot. I'm using a PC on Linux using emacs and pilot-link but I'm ready to read experience from other fine people here.

Cyril

PS: I've tried the Emulator but I don't find the import method very easy to use, any ideas?

Re: Tools on the PC side

Posted by [Neal Bridges](#) on December 19, 1998 at 15:40:38:

In Reply to: *Tools on the PC side* posted by Cyril Elkaim on December 19, 1998 at 14:35:37:

> Hi Piloteers,
> Not directly a question about Quartus, but I'm searching to know what
> are the
> tools and tips used by this community to develop Forth code on the Pilot. I'm
> using a PC on Linux using emacs and pilot-link but I'm ready to read
> experience
> from other fine people here.
> Cyril

> PS: I've tried the Emulator but I don't find the import method very easy to use, any ideas?

I generally develop code directly on the device itself; the logic of the Swatch program, for instance, was written entirely on a Palm III while I was laying in bed with the 'flu. I like to immediately test what I've written. To that end, I define a Graffiti shortcut 'i' that types 'include ' for me; this speeds testing.

The odd time I've written Quartus code on the PC side, under Windows 9x I use the Palm Desktop software directly, or sometimes in conjunction with an editor; under Linux, I use pilot-link as you do, though I prefer the simplicity of the 'joe' editor over emacs for most tasks.

The emulator can be HotSync'd if you have a null modem cable and two serial ports, or a second computer.

Neal

Re: Tools on the PC side

Posted by [Cyril Elkaim](#) on December 20, 1998 at 04:06:48:

In Reply to: *Re: Tools on the PC side* posted by Neal Bridges on December 19, 1998 at 15:40:38:

> The emulator can be HotSync'd if you have a null modem cable and two serial ports, or a second computer.

> Neal

Don't know about this technique, nevertheless my portable has only one COM port though. Ok, will go to Grafiti :-)

Thanks,
Cyril

ANS Standard

Posted by [Lou Solomon](#) on December 18, 1998 at 17:03:54:

Neal:

While going through the "Forth Programmers Handbook" (conklin, rather, from Forth inc.) I noticed that a couple of words, supposedly in the ANS forth are not in Quartus. The two I noticed:

CASE (which is listed in the book as Core Ext)

BLANK (which is listed as Core)

Just curious as to why, and any other ANS vs. Quartus issues. This is no real

big deal to me, but I've been going through the book and trying to write an example with each word. It's just my way of sticking the word in my memory (somewhere) where in the future, when I need it, I'll have some lightbulb go on.

Lou

Re: ANS Standard

Posted by [Neal Bridges](#) on December 18, 1998 at 19:21:04:

In Reply to: *ANS Standard* posted by Lou Solomon on December 18, 1998 at 17:03:54:

> Neal:

> While going through the "Forth Programmers Handbook" (conklin, rather, from
> Forth inc.) I noticed that a couple of words, supposedly in the ANS forth are
> not in Quartus. The two I noticed:

> CASE (which is listed in the book as Core Ext)

Case is defined in *case.txt*, which has been hanging around in the PilotFORTH examples area for some time; I've just made it available in the Quartus File Area as well. I prefer the simpler syntax of *condthens.txt*, myself.

> BLANK (which is listed as Core)

BLANK is from the String wordset -- define it for Quartus Forth like this:

```
: BLANK BL FILL ;
```

> Just curious as to why, and any other ANS vs. Quartus issues. This is no real
> big deal to me, but I've been going through the book and trying to write an
> example with each word. It's just my way of sticking the word in my memory
> (somewhere) where in the future, when I need it, I'll have some lightbulb go
on.

Quartus Forth is an ANSI Forth Standard compliant system. The Standard allows you to provide various words in source format, rather than as part of the kernel itself.

Neal

Re: ANS Standard

Posted by [Lou Solomon](#) on December 19, 1998 at 13:32:04:

In Reply to: *Re: ANS Standard* posted by Neal Bridges on December 18, 1998 at 19:21:04:

Neal:

1. As I said, I'm going through all the words in the handbook, and for some reason, I cant get the MS (millseconds) word working. For example, if I enter something like:
20 ms
the system locks up completely (requires a hard reset). Note that I'm using the 2mB upgrade, with the P3 OS.

2. Since not all words are defined "right away", I've been using the WORDS command and noticed that some words are in upper case, some lower case, and either way, in no discernable order. Just curious... any reason why this is so?

3. As in your reply to me regarding whats in the 'kernel' and not....
> Quartus Forth is an ANSI Forth Standard compliant system. The Standard allows
> you to provide various words in source format, rather than as part of the kernel
> itself.

I don't know if this is a sign or "Forth Madness", but I actually spent about 5 minutes thinking about what could be the minimum amount of words to define in the kernel, where all other words in the standard are defined from them in source format (like the CASE/OF/ENDOF situation). Every forth book, for example, has shown the 'source' definition of something like VARIABLE & CONSTANT. so...

- out of curiosity, is there some kind of place I can find the pure minimum word set?

- as the Quartus designer, what rules or guidelines you used to determine what's in the kernel, and what's in source?

Lou

PS: Neal... thanks for Quartus... I'm definitely enjoying it!

Re: ANS Standard

Posted by [Neal Bridges](#) on December 19, 1998 at 14:06:00:

In Reply to: *Re: ANS Standard* posted by Lou Solomon on December 19, 1998 at 13:32:04:

> Neal:
> 1. As I said, I'm going through all the words in the handbook, and for some
> reason, I cant get the MS (millseconds) word working. For example, if I enter
> something like:
> 20 ms
> the system locks up completely (requires a hard reset). Note that I'm using
> the 2mB upgrade, with the P3 OS.

That's a bug I fixed quite recently. Try

: MS 0 MS ;

for the time being.

> 2. Since not all words are defined "right away", I've been using the WORDS
> command and noticed that some words are in upper case, some lower case, and
> either way, in no discernable order. Just curious... any reason why this is

> so?

Yes. Standard words are in upper case, Quartus-specific words in mixed case. There's no special reason for this, as Quartus is case-insensitive; it's just a convenience.

> 3. As in your reply to me regarding whats in the 'kernel' and not....

> > Quartus Forth is an ANSI Forth Standard compliant system. The Standard allows

> > you to provide various words in source format, rather than as part of the kernel

> > itself.

> I don't know if this is a sign or "Forth Madness", but I actually spent about > 5 minutes thinking about what could be the minimum amount of words to define > in the kernel, where all other words in the standard are defined from them in > source format (like the CASE/OF/ENDOF situation). Every forth book, for > example, has shown the 'source' definition of something like VARIABLE & > CONSTANT. so...

> - out of curiosity, is there some kind of place I can find the pure minimum word set?

The topic of the absolute minimum set of required words is often discussed on comp.lang.forth; searching back through DejaNews should give you some insight. It's generally agreed that at minimum, there are about 30 words that are best implemented as kernel primitives.

There's no hard and fast rule for this; clearly words like @ and ! need to be in-kernel primitives, as they depend upon the underlying CPU architecture, but the case is not so clear-cut for many other words. If you're extremely tight on space (for instance, in an embedded system with only a few K of RAM) it would make sense to have almost all of the system optionally loadable. On the PalmPilot, the decision to leave most words in-kernel was easily made -- the entire Quartus Forth kernel is only about 18K in size. The table of PalmOS systraps is almost as large as the kernel itself!

> - as the Quartus designer, what rules or guidelines you used to determine > what's in the kernel, and what's in source?

All words that have an internal dependency on the architecture of the system CPU, or directly access private kernel structures are in-kernel (!, @, CATCH, THROW, ABORT, ACCEPT, PAGE, ShowForm, WORDS, SEARCH-WORDLIST, etc.).

Some words are implemented in hand-coded assembler for efficiency (for instance, NIP is implemented in-kernel as one inlined instruction; it could be implemented in source as : NIP SWAP DROP ; but would be considerably larger and less efficient in that form (four instructions)).

The few Standard words that are still provided in source form are generally either less frequently used, or have trivial implementations, or have no architectural dependencies and lose nothing in efficiency by being implemented in source rather than in the kernel.

> Lou
> PS: Neal... thanks for Quartus... I'm definitely enjoying it!

That's great! :))

Kind regards,

Neal

WORDS: non-standard behaviour

Posted by [Neal Bridges](#) on December 18, 1998 at 14:51:09:

Hi folks. Robert Patten has pointed out that in Quartus, WORDS lists all words in all the wordlists in the search-order, whereas the Standard says that WORDS lists the words in the first wordlist in the search-order.

I'd prefer to leave it the way it is now, as I find it more convenient -- so far I can't think why I'd want to restrict it to only showing the words in the first wordlist.

However, should you want the exact behaviour described in the Standard, here's how you get it--

```
: WORDS ( -- )
  get-order over 1 set-order
  words
  set-order ;
```

Neal Bridges

Release 1.0

Posted by [Michael Will](#) on December 18, 1998 at 13:29:01:

Neal, any idea when you might release a registered version to allow compilation of stand-alone images?

I'm using PocketC right now and I'd sure like to dump that runtime library. Thanks.

Re: Release 1.0

Posted by [Neal Bridges](#) on December 18, 1998 at 13:55:13:

In Reply to: *Release 1.0* posted by Michael Will on December 18, 1998 at 13:29:01:

```
> Neal, any idea when you might release a registered version to allow
> compilation
> of stand-alone images?
> I'm using PocketC right now and I'd sure like to dump that runtime library.
> Thanks.
```

If I hadn't had the 'flu last week (still recovering from it) it'd already be released. I'm aiming to get it out this weekend!

Neal

Re: Release 1.0

Posted by [Branko Znuderl](#) on December 19, 1998 at 14:39:28:

In Reply to: *Re: Release 1.0* posted by Neal Bridges on December 18, 1998 at 13:55:13:

> > Neal, any idea when you might release a registered version to allow
> compilation
> > of stand-alone images?
> > I'm using PocketC right now and I'd sure like to dump that runtime library.
> > Thanks.

> If I hadn't had the 'flu last week (still recovering from it) it'd already be
> released. I'm aiming to get it out this weekend!

> Neal

I'm waiting too, so, go-go-go.

Branko

More questions

Posted by [Steve Odendahl](#) on December 16, 1998 at 23:40:48:

One last salvo before I take off on Xmas break (I'm looking forward to doing portable programming during my vacation).

1. I wrote a version of the **syncname** example that uses `allocate` and `free`. It looks like this (hope the formatting turns out ok)

```
\ syncname2
needs memory
:   UserName   ( c-addr -- c-addr u )
      dup >abs
      0. 2swap 0. 2swap 0. 0. 0.
      DlkGetSyncInfo drop
      dup >abs   StrLen ;

:   Show
      41 chars allocate if drop else
      dup UserName type free then ;
```

My question is - since a Palm application remains resident, unlike a process that exits in other OSes, will repeated use of `Show` lead to

fragmentation of memory? Or does the Palm OS know how to compact memory returned to it from applications?

2.

On a related question - I've downloaded the docs available from 3COM. Any tips on where to begin when learning the OS? Is the O'Reilly book, even though it concentrates on C, useful for this (if it's out yet)? And when can we get the API in Doc format (so I have an excuse to order that 8 meg board)? (Not serious about that last one).

3.

I understand that good Forth style is to write small, modular words. On a medium to large program, are there conventions/techniques that help in avoiding namespace collision (or I guess I should say dictionary collision)?

4.

It's very nice to be able to test words interactively. Is there a good way to profile execution times of words?

5.

I have an idea for my next program. The intent is to define a word, say `qfind`, that, when called from the interpreter, would bring up a modal dialog. The user can enter the name of a word (say `foo`, and then hit the "Find" button. The memopad database would be searched for the regex `:[\t\r]+foo` (a little ambitious - at first I would just look for `:[space]foo`), and if found, would display the line and maybe a few after that. A future enhancement could be the ability to edit as well as display. When the user clicked exit, control would return to the interpreter. I know that `SwitchHack` can be used to go to MemoPad from Quartus & vice versa, but I think this would be a little nicer in some situations. The questions are -

- o Am I reinventing the wheel?
- o Would anyone find this useful?
- o Is this feasible (particularly the idea of taking event control away from Quartus (the easy part) and then returning it (the part I've tried to do unsuccessfully so far)? Here's my first stab at how to return to Quartus (do-event always puts a boolean on the stack to indicate if exit should happen)

-

```
: cleanup
FrmGetActiveForm 2dup
FrmEraseForm FrmDeleteForm
MainForm ;
```

```
: go
HelloFormID ShowForm
begin ekey do-event if
cleanup exit then again ;
```

but this dies.

Steve O.

Re: More questions

Posted by [Ron Doerfler](#) on December 17, 1998 at 11:28:34:

In Reply to: *More questions* posted by Steve Odendahl on December 16, 1998 at 23:40:48:

Hi everyone,

> On a related question - I've downloaded the docs available from 3COM. Any tips
> on where to begin when learning the OS? Is the O'Reilly book, even though it
> concentrates on C, useful for this (if it's out yet)? And when can we get the
> API in Doc format (so I have an excuse to order that 8 meg board)? (Not
serious
> about that last one).

I am finding the GNU PILOT SDK TUTORIAL (even though it is written for the GCC version of C) to be very helpful as a rank beginner. It's the top link on the web page:

http://www.iosphere.net/~howlett/pilot/GNU_Pilot.html

There is also a How-To for dealing with Tables in that zipped file somewhere that looks good.

Between this and the on-line book and Neal's documentation (such as the walk-through of "memo"), I'm starting to create forms and intercept system events for my own nefarious purposes. I REALLY like that On-Board Resource Editor, too!

> I understand that good Forth style is to write small, modular words. On a
medium
> to large program, are there conventions/techniques that help in avoiding
> namespace collision (or I guess I should say dictionary collision)?

If I understand your question (you are afraid of accidentally redefining an earlier Forth word, perhaps one right in Quartus, without realizing it), you might include "redefine", which prints out warnings to that effect at compile time. The author says you might want to include it after "safe" but before other includes when testing or writing code. It's found at:

<http://www.anomaly.org/wade/pilot4th/>

Still catching up with you guys,

Ron Doerfler

Re: More questions

Posted by [Steve Odendahl](#) on December 17, 1998 at 22:43:04:

In Reply to: *Re: More questions* posted by Ron Doerfler on December 17, 1998 at 11:28:34:

> I am finding the GNU PILOT SDK TUTORIAL (even though it is written for the
> GCC version of C) to be very helpful as a rank beginner. It's
> the top link on the web page:

> http://www.iosphere.net/~howlett/pilot/GNU_Pilot.html

Thanks - it's a good intro to the Palm internals and OS.

Steve O.

Re: More questions

Posted by [Neal Bridges](#) on December 17, 1998 at 01:05:49:

In Reply to: *More questions* posted by Steve Odendahl on December 16, 1998 at 23:40:48:

> One last salvo before I take off on Xmas break (I'm looking forward to doing
> portable programming during my vacation).

Not one salvo, but about six :) Here goes.

> I wrote a version of the **syncname** example that uses
> allocate and free. It looks like this (hope the
> formatting turns out ok)
>

> \ syncname2

> needs memory

```
> :   UserName   ( c-addr -- c-addr u )
>     dup >abs
>     0. 2swap 0. 2swap 0. 0. 0.
>     DlkGetSyncInfo drop
>     dup >abs StrLen ;
```

```
> :   Show
>     41 chars allocate if drop else
>     dup UserName type free then ;
>
```

> My question is - since a Palm application remains resident, unlike a process
> that exits in other OSes, will repeated use of Show lead to
> fragmentation of memory? Or does the Palm OS know how to compact memory
returned
> to it from applications?

Two things here. One, Palm applications do not remain 'resident' in the sense that they don't exit. They exit. If you start the MemoPad, then push the DateBook button, the MemoPad receives an appStopEvent and *terminates* just like a program terminating in, say, Windows. And then the DateBook launches. When you 'return to' the MemoPad, and it starts up in the same place you were when you last left it, that's because it took note of exactly where you were when it left and sets itself up again the same way -- but it's starting over fresh each time.

Two, when an application exits, all its dynamic memory is freed by the operating system, so you don't need to worry about dynamic RAM fragmentation.

> On a related question - I've downloaded the docs available from 3COM. Any tips
> on where to begin when learning the OS? Is the O'Reilly book, even though it
> concentrates on C, useful for this (if it's out yet)? And when can we get the
> API in Doc format (so I have an excuse to order that 8 meg board)? (Not
serious
> about that last one).

The O'Reilly book looks weak to me, and it's completely C-centric; however you can preview it for free from <http://palm.3com.com/devzone> if you so desire. C is amazingly long-winded for programming the PalmOS; however there may be some nuggets of information in there worth digging for.

> I understand that good Forth style is to write small, modular words. On a
medium
> to large program, are there conventions/techniques that help in avoiding
> namespace collision (or I guess I should say dictionary collision)?

I've never encountered a problem with name collision. If I've chosen the same name for two words, odds are extremely good that the two words do the same thing.

Having said that, however, Quartus Forth fully supports wordlists and search-orders; it's possible for you to have the same name of a word in more than one wordlist, each with a separate meaning. I think that using this as a general technique for naming would lead to a great deal of confusion, however, as you'd have to constantly keep in mind which version of 'foobar' you're using at any given time.

> It's very nice to be able to test words interactively. Is there a
> good way to profile execution times of words?

needs double

```
TimGetTicks
...your code here...
TimGetTicks 2swap d- d.
```

Clearly this technique can be extended:

```
: bench ( -- )
TimGetTicks >r >r
' execute
TimGetTicks r> r> d- d. ;
```

bench yourword

> I have an idea for my next program. The intent is to define a word, say
> qfind, that, when called from the interpreter, would bring up a

> modal dialog. The user can enter the name of a word (say foo, and
> then hit the "Find" button. The memopad database would be searched for the
regex
> :[\t\r]+foo (a little ambitious - at first I would just look for
> :[space]foo), and if found, would display the line and maybe a
few
> after that. A future enhancement could be the ability to edit as well as
> display. When the user clicked exit, control would return to the interpreter.
I
> know that SwitchHack can be used to go to MemoPad from Quartus & vice versa,
but
> I think this would be a little nicer in some situations. The questions are -
> Am I reinventing the wheel?

No such wheel yet exists.

> Would anyone find this useful?

I'm not sure that I'd use it; if I want to see a word's definition, it's
probably because I want to modify it, and for that I need to be in the editor
(MemoPad).

> Is this feasible (particularly the idea of taking event control away from
> Quartus (the easy part) and then returning it (the part I've tried to do
> unsuccessfully so far)? Here's my first stab at how to return to Quartus
> (do-event always puts a boolean on the stack to indicate if exit should
happen)
> -
>

```
> : cleanup  
> FrmGetActiveForm 2dup  
> FrmEraseForm FrmDeleteForm  
> MainForm ;  
  
> : go  
> HelloFormID ShowForm  
> begin ekey do-event if  
> cleanup exit then again ;  
>
```

> but this dies.

I'm not sure that your phrase 'taking control away' is quite appropriate. What
I think you want to do is pop up another form, work with it for awhile, and then
return to the main Quartus form.

I'll give you a push in the right direction -- the PalmOS functions you want are
FrmPopup and FrmReturnToForm. Another hint -- look at *input.txt*, it
does just such a thing.

Neal

Re: More questions

Posted by [Steve Odendahl](#) on December 17, 1998 at 21:59:49:

In Reply to: *Re: More questions* posted by Neal Bridges on December 17, 1998 at 01:05:49:

> Not one salvo, but about six :) Here goes.

OK, I promise to do a little R'ing of the FM from now on. Thanks for all the info!

Steve O.

Re: More questions

Posted by [Tony Sanders](#) on December 17, 1998 at 16:01:26:

In Reply to: *Re: More questions* posted by Neal Bridges on December 17, 1998 at 01:05:49:

> No such wheel yet exists.

Not exactly true Neal, you have that "goto the last error" thing.

A couple of well chosen factors of that guy might be really handy.

> > I understand that good Forth style is to write small, modular words. On
> > a medium to large program, are there conventions/techniques that help
> > in avoiding namespace collision (or I guess I should say dictionary
> > collision)?

> I've never encountered a problem with name collision. If I've chosen the same
> name for two words, odds are extremely good that the two words do the same
> thing.

> Having said that, however, Quartus Forth fully supports wordlists and
> search-orders; it's possible for you to have the same name of a word in
> more than one wordlist, each with a separate meaning. I think that
> using this as a general technique for naming would lead to a great deal
> of confusion, however, as you'd have to constantly keep in mind which
> version of 'foobar' you're using at any given time.

I'm going to cover some of the same ground but from a slightly different perspective.

Forth and C are very similar in terms of global namespace management. For a reuseable library you adopt some kind of naming convention and avoid using names that are too generic. With Forth you can get into various schemes using wordlists (also known as vocabularies) but as Neal noted, name reuse is generally a bad idea because it's confusing.

At least with Forth you aren't limited in your naming schemes for lack

of valid characters since there are no special characters except for whitespace, names like "package/function" and "package::function" are valid. Much more readable than _'s IMHO.

One exception where wordlists work well is when they provide alternative functions to fit a programming context. For example, the assembler wordlist usually provides structured conditional words like IF/ELSE/THEN and BEGIN/WHILE/REPEAT/AGAIN/UNTIL. And while they are semantically similar to their high level counterparts they are slightly different syntactically (they take an argument that specifies which machine condition register bit to test instead of testing the top of stack value as a boolean). The difference is acceptable because of the strong contextual binding (you have radically switched programming environments).

Forth doesn't provide local functions equivalent to C's static functions (which have file scope). But, if your project wanted them to protect against accidental use or reuse of names, you could implement it in your Forth environment (cannot be done portably but the impact is minimal, show me one non-trivial C program that doesn't require porting from platform to platform). Local functions are pretty common, we use L-: to define locally scoped functions -- something like this:

```
: L-: add-local-symbol : ;
: SCOPE{  push-local-context ;
: }SCOPE  smudge-symbols pop-local-context ;

\ if you want file scope use: fload
: fload SCOPE{ include-file }SCOPE ;
```

You aren't limited by the languages predefined scoping rules. If you find file scope too limiting you could implement component scoping.

```
\ so-and-so component master file
SCOPE{
  include-file file1
  ...
  include-file fileN
}SCOPE
```

You could also have named scopes with a bit of storage and compilation overhead. And there are, of course, a number of object-oriented extensions for Forth out there (ranging from the simple to the painfully complete).

Re: More questions

Posted by [Neal Bridges](#) on December 17, 1998 at 22:43:11:

In Reply to: *Re: More questions* posted by Tony Sanders on December 17, 1998 at 16:01:26:

> Forth doesn't provide local functions equivalent to C's static
> functions (which have file scope). But, if your project wanted them to

```
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> : }SCOPE smudge-symbols pop-local-context ;
> \ if you want file scope use: fload
> : fload SCOPE{ include-file }SCOPE ;
>
```

This seems complex to me. Simpler would be the mechanism I've seen elsewhere, implemented using wordlists...

```
MODULE
PRIVATE
: implementation-factor-1 ... ;
: implementation-factor-2 ... ;
PUBLIC
: module-word-1 ... ;
: module-word-2 ... ;
END-MODULE
```

This is actually trivial to implement in Standard Forth. The words defined after PRIVATE are only visible until END-MODULE, whereas the words defined after PUBLIC continue to be visible.

Neal

Re: More questions

Posted by [Steve Odendahl](#) on December 17, 1998 at 22:30:39:

In Reply to: *Re: More questions* posted by Tony Sanders on December 17, 1998 at 16:01:26:

```
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> different perspective.
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> of valid characters since there are no special characters except for
> whitespace, names like "package/function" and "package::function" are
> valid. Much more readable than _'s IMHO.
```

Agreed.

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> functions to fit a programming context. For example, the assembler
> wordlist usually provides structured conditional words like
> IF/ELSE/THEN and BEGIN/WHILE/REPEAT/AGAIN/UNTIL. And while they are
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>      : }SCOPE  smudge-symbols pop-local-context ;
```

```
>      \ if you want file scope use: fload
>      : fload SCOPE{ include-file }SCOPE ;
```

>

OK - I get (and like) the technique, even though I don't know enough Forth yet
to be able to implement the words :-)

> You aren't limited by the languages predefined scoping rules. If you
> find file scope too limiting you could implement component scoping.

>

```
>      \ so-and-so component master file
>      SCOPE{
>          include-file file1
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```

>

> You could also have named scopes with a bit of storage and
> compilation overhead. And there are, of course, a number of
> object-oriented extensions for Forth out there (ranging from the simple
> to the painfully complete).



Feedback on input.txt and Qrsrc.prc

Posted by [Matthias Schneider](#) on December 14, 1998 at 02:43:02:

Hi Neal,

as discussed below, I like input.txt. But after thinking a while about the concept of "blowing up" the Qrsrc.prc-Resource Database I'm no longer sure it this would be the best strategy for builing "standard-looking" Palm-Apps. Indeed I'm sure is woudn't! Nevertheless it could be a good compromise for those who can't compile "own" Resouce-Databases (like me). Perhaps I had to upgrade to OS2+ now! (grrr).

On my "x-mas-list" of Qrsrc.prc would be:

- Text-Input (you solved that already)
- Number-Input
- Date- and Time-Input
- Singe OK, Cancel and usernamable-Buttons
- Checkboxes
- Lists to chhose from
- menus.

as well as the relating "helper-words" (like "get-input")

I'm not sure if all of these could be done in Qrsrc.prc.

2nd. Point:

I am not able to build a correct running stand-alone-app using this stuff. I'm able to build one without errors during building it, but when running it "alone", after your splash screen the Fatal Error "HwrRes.c, Line:68, Form rsrc not found - Reset" appears. Running theses apps inside Quartus works fine. Any suggestions for me who to manage it - or is it (unlikely, but possible) a bug?

Matthias

Re: Feedback on input.txt and Qrsrc.prc

Posted by [Neal Bridges](#) on December 14, 1998 at 10:57:30:

In Reply to: *Feedback on input.txt and Qrsrc.prc* posted by Matthias Schneider on December 14, 1998 at 02:43:02:

> Hi Neal,

> as discussed below, I like input.txt. But after thinking a while about the
> concept of "blowing up" the Qrsrc.prc-Resource Database I'm no longer sure it
> this would be the best strategy for builing "standard-looking" Palm-Apps.
Indeed
> I'm sure is woudn't! Nevertheless it could be a good compromise for those who
> can't compile "own" Resouce-Databases (like me). Perhaps I had to upgrade to
> OS2+ now! (grrr).

You can compile them, Matthias -- you just can run RsrcEdit on a PalmOS1 device.

You'd need to use PilRC/Pila on the PC-side (with the method shown in YearSrc.zip), and HotSync the resulting PRC file.

> On my "x-mas-list" of Qrsrc.pcr would be:
> - Text-Input (you solved that already)
> - Number-Input
> - Date- and Time-Input
> - Single OK, Cancel and usernamable-Buttons
> - Checkboxes
> - Lists to choose from
> - menus.
> as well as the relating "helper-words" (like "get-input")
> I'm not sure if all of these could be done in Qrsrc.pcr.

Number-input, yes; at least PalmOS2 devices and later will enforce numeric field input.

Date- the system already provides; there's a SelectDay PalmOS function. I'll put up some code.

Time input -- I've already done this in the Swatch program, should be easy to extract.

Dialog boxes -- can do.

Checkboxes -- harder. Checkboxes are persistent (non-popup) GUI elements with potentially complex state (they can be grouped); I think they should be handled as standard resources.

Lists -- possibly a simple list module that will display an array of strings.

Menus -- A Help/About menu, certainly; maybe an Edit menu.

Neal

Re: Feedback on input.txt and Qrsrc.prc

Posted by [Matthias Schneider](#) on December 15, 1998 at 09:43:25:

In Reply to: *Re: Feedback on input.txt and Qrsrc.prc* posted by Neal Bridges on December 14, 1998 at 10:57:30:

> > On my "x-mas-list" of Qrsrc.pcr would be:
> > - Text-Input (you solved that already)
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> extract.
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> potentially complex state (they can be grouped); I think they should be
handled
> as standard resources.
> Lists -- possibly a simple list module that will display an array of strings.
> Menus -- A Help/About menu, certainly; maybe an Edit menu.

> Neal

Sounds superior! If I send you a hot lemon tea against the flu, would it be possible for you.....

Re: Feedback on input.txt and Qrsrc.prc

Posted by [Neal Bridges](#) on December 14, 1998 at 10:59:05:

In Reply to: *Re: Feedback on input.txt and Qrsrc.prc* posted by Neal Bridges on December 14, 1998 at 10:57:30:

> > Hi Neal,

> > as discussed below, I like input.txt. But after thinking a while about the
> > concept of "blowing up" the Qrsrc.prc-Resource Database I'm no longer sure
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> > I'm sure is woudn't! Nevertheless it could be a good compromise for those
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> > OS2+ now! (grrr).

> You can compile them, Matthias -- you just can run RsrcEdit on a PalmOS1
device.

Sorry; make that ' you just CAN'T run RsrcEdit on a PalmOS1 device.' Getting over the 'flu; prone to typos.

Neal

Re: Feedback on input.txt and Qrsrc.prc

Posted by [Matthias Schneider](#) on December 15, 1998 at 09:58:56:

In Reply to: *Re: Feedback on input.txt and Qrsrc.prc* posted by Neal Bridges on December 14, 1998 at 10:59:05:

> > > Hi Neal,

> > > as discussed below, I like input.txt. But after thinking a while about the
> > > concept of "blowing up" the Qrsrc.prc-Resource Database I'm no longer sure

> it
> > > this would be the best strategy for builing "standard-looking" Palm-Apps.
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> > You can compile them, Matthias -- you just can run RsrcEdit on a PalmOS1
> device.
> Sorry; make that ' you just CAN'T run RsrcEdit on a PalmOS1 device.' Getting
> over the 'flu; prone to typos.
> Neal

Yes, I know. But I'm not familiar with ASDK at all. No problem, this was only
the opening to my X-Mas-List.

Re: Feedback on input.txt and Qrsrc.prc

Posted by [Neal Bridges](#) on December 14, 1998 at 10:50:00:

In Reply to: *Feedback on input.txt and Qrsrc.prc* posted by Matthias Schneider on
December 14, 1998 at 02:43:02:

> I am not able to build a correct running stand-alone-app using this stuff.
> I'm able to build one without errors during building it, but when running it
> "alone", after your splash screen the Fatal Error "HwrRes.c, Line:68, Form
rsrc
> not found - Reset" appears. Running theses apps inside Quartus works fine. Any
> suggestions for me who to manage it - or is it (unlikely, but possible) a bug?

Not a bug. You need to copy the resource into your target executable, like
this:

```
needs input
... ( your program here )
' go (ID) Demo MakePRC MyProgram ( or similar)
inputFormID (ID) tFRM CopyRsrc
```

Neal

Re: Feedback on input.txt and Qrsrc.prc

Posted by [Matthias Schneider](#) on December 15, 1998 at 09:55:24:

In Reply to: *Re: Feedback on input.txt and Qrsrc.prc* posted by Neal Bridges on December 14, 1998 at 10:50:00:

> > I am not able to build a correct running stand-alone-app using this stuff.
> > I'm able to build one without errors during building it, but when running it
> > "alone", after your splash screen the Fatal Error "HwrRes.c, Line:68, Form
> > rsrc
> > not found - Reset" appears. Running theses apps inside Quartus works fine.
Any
> > suggestions for me who to manage it - or is it (unlikely, but possible) a
bug?

> Not a bug. You need to copy the resource into your target executable, like
> this:

```
> needs input  
> ... ( your program here )  
  
> ' go (ID) Demo MakePRC MyProgram ( or similar)  
  
> inputFormID (ID) tFRM CopyRsrc  
  
>  
> Neal
```

Oops. Sorry for taking your time instead of reading YourScr.zip.

Newbie questions

Posted by [Steve Odendahl](#) on December 14, 1998 at 00:39:22:

Greetings -

I recently downloaded Quartus 0.9.5b, and have just finished my first killer app - a graphical version of "Hello, World!" (and in the process setting a personal best for number of crashes (at least 20 & all my own fault - I'm a Forth novice) while implementing that application :-)

I have a few questions -

1) I created a "Hello" form replete with menus and buttons, using RsrcEdit, and then cribbed heavily from everybody's sample code. (Thanks!) All is well, except that when I hit the Menu silk-screen button, the menubar appears (and works), but the first menu is not displayed (unlike the typical Pilot app). I ran "Year" in the interpreter, and the menu does get displayed. Does this ring any bells? I'm using "ekey" for both the button and menu events.

2) I think I'm starting to grok "create ... does>" and "postpone", but "immediate" still leaves me puzzled (more the reason for using it than the definition). Where's a good example in the sample code?

3) Moving on to my second program, I found that WinSetPattern doesn't seem to

work correctly on my Palm Pro. Using "41508 systrap 2drop" does work. It looks like the stack diagrams for WinSetPattern and WinGetPattern in stackdia.txt should be taking an absolute address CustomPatternType. (judging by "window.h") instead of a [>byte] (which I guess came from the enum PatternType instead).

Thanks & looking forward to the release,

Steve O.

Re: Newbie questions

Posted by [Neal Bridges](#) on December 14, 1998 at 11:10:42:

In Reply to: *Newbie questions* posted by Steve Odendahl on December 14, 1998 at 00:39:22:

> I recently downloaded Quartus 0.9.5b, and have just finished my first killer app
> - a graphical version of "Hello, World!" (and in the process setting a personal
> best for number of crashes (at least 20 & all my own fault - I'm a Forth novice)
> while implementing that application :-)

Glad to have you on-board, Steve.

> 1) I created a "Hello" form replete with menus and buttons, using RsrcEdit, and
> then cribbed heavily from everybody's sample code. (Thanks!) All is well, except
> that when I hit the Menu silk-screen button, the menubar appears (and works),
> but the first menu is not displayed (unlike the typical Pilot app). I ran
> "Year"
> in the interpreter, and the menu does get displayed. Does this ring any bells?
> I'm using "ekey" for both the button and menu events.

I'm not sure what you mean by 'the first menu is not displayed'. If you like, mail me your menu resources and I'll see what I can see.

> 2) I think I'm starting to grok "create ... does>" and "postpone", but
> "immediate" still leaves me puzzled (more the reason for using it than the
> definition). Where's a good example in the sample code?

IMMEDIATE flags the last compiled word such that it will execute during compilation, rather than be compiled. ; is an immediate word, for instance. So are POSTPONE, DOES>, DO, LOOP, to name a few. Normal non-immediate words are compiled directly into new words; immediate words are executed instead, and often lay down special code, and/or parse the input buffer (as does POSTPONE)

> 3) Moving on to my second program, I found that WinSetPattern doesn't seem to
> work correctly on my Palm Pro. Using "41508 systrap 2drop" does work. It looks
> like the stack diagrams for WinSetPattern and WinGetPattern in stackdia.txt
> should be taking an absolute address CustomPatternType. (judging by
> "window.h")

> instead of a [`>byte`] (which I guess came from the enum `PatternType` instead).

You're right. I've fixed the `stackdia.zip` file. You may need to flush your browser cache to retrieve it.

> Thanks & looking forward to the release,

Me too. Working against a handicap this last week; hit pretty hard with the 'flu, but I'm getting back on my feet. Having Quartus on the PalmPilot meant I could work on code while lying in bed, which helped take my mind off the illness.

I'm very close now; just finishing registration-key related code, and documentation.

Neal

Re: Newbie questions

Posted by [Steve Odendahl](#) on December 14, 1998 at 20:50:33:

In Reply to: *Re: Newbie questions* posted by Neal Bridges on December 14, 1998 at 11:10:42:

> Glad to have you on-board, Steve.

I like that :-)

> I'm not sure what you mean by 'the first menu is not displayed'. If you like, > mail me your menu resources and I'll see what I can see.

Sorry, let me explain it better - that might save you the trouble. I have a form with a menubar. The menubar has two menus (e.g. File and Help). The File menu has two menuitems (e.g. Load and Save). I display the form using its id and `ShowForm`. When the menu silk-screen button is pressed, the menubar is displayed, but the items under the File menu are not. The standard behavior for Pilot apps seems to be to display the menubar, and display the first menu. The Year program and the Duco program do the standard thing, even when run from the interpreter. The menubar works otherwise normally in my program.

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Whoa, I feel pretty stupid - I didn't even realize `;` was a word. I just thought it was a delimiter (which gives you some idea of what languages I'm coming from). OK, I think light is starting to dawn - I need to mull this over a little and look at some of your source.

Thanks much,

Steve O.

Re: Newbie questions

Posted by [Neal Bridges](#) on December 14, 1998 at 21:26:01:

In Reply to: *Re: Newbie questions* posted by Steve Odendahl on December 14, 1998 at 20:50:33:

> Sorry, let me explain it better - that might save you the trouble. I have a form
> with a menubar. The menubar has two menus (e.g. File and Help). The File menu
> has two menuitems (e.g. Load and Save). I display the form using its id and
> ShowForm. When the menu silk-screen button is pressed, the menubar is displayed,
> but the items under the File menu are not. The standard behavior for Pilot apps
> seems to be to display the menubar, and display the first menu. The Year program
> and the Duco program do the standard thing, even when run from the interpreter.
> The menubar works otherwise normally in my program.

Mail me that resource anyway, Steve; I'd like to look it over. Maybe it's the way RsrcEdit positions menus.

[snip]

> Whoa, I feel pretty stupid - I didn't even realize ; was a word. I just thought
> it was a delimiter (which gives you some idea of what languages I'm coming from). OK, I think light is starting to dawn - I need to mull this over a little
> and look at some of your source.

Don't feel stupid by any means; Forth is an unusual language. All its syntactic elements are *active*; that is to say, they have code associated with them. For instance, each VARIABLE is a small code snippet that pushes an address onto the stack. A CONSTANT is a small code snippet that pushes a fixed value onto the stack. + is a small code snippet that adds the top two stack items together, and leaves the result on the stack... etc.

You can give a name to any concept you can write code for, and the new names become immediately accessible just as any other language element -- in fact, these 'language elements' are just a collection of built-in code snippets, with names like : ; IF THEN DUP DROP . @ ! and so on. If you're curious as to the actions of any of the built-in words, look first to the ISO/ANSI Forth Standard, and second to my own documentation.

This ability to create new language elements gives you an amazing degree of power and freedom; one of the first hurdles in learning Forth is accepting that freedom. Most other languages define what a developer can and can't do; Forth

allows you to define what can and can't be done.

Forth is as much a programming language as it is a method for problem solving. One of the best mindsets for writing a Forth program to solve a given task is to think not of writing a program, but rather of creating a new set of words that allow you to manipulate the elements of the task itself, and then to express the task in terms of these new words.

I can think of three benefits to this process: first, it can give you extraordinary insight into a given problem, often revealing solutions you might never otherwise have considered; second, breaking the task into small conceptual elements lets you test-bench each element thoroughly and independently, so that your confidence in the resulting program becomes far stronger; and third, the new words thus defined frequently find use in other applications.

Neal

Re: Newbie questions

Posted by [Steve Odendahl](#) on December 14, 1998 at 21:58:40:

In Reply to: *Re: Newbie questions* posted by Neal Bridges on December 14, 1998 at 21:26:01:

> Mail me that resource anyway, Steve; I'd like to look it over. Maybe it's the
> way RsrcEdit positions menus.

Will do.

> Don't feel stupid by any means; Forth is an unusual language. All its
> syntactic
> elements are *active*; that is to say, they have code associated with
> them. For instance, each VARIABLE is a small code snippet that pushes an
> address onto the stack. A CONSTANT is a small code snippet that pushes a
> fixed
> value onto the stack. + is a small code snippet that adds the top two stack
> items together, and leaves the result on the stack... etc.

Is the 2 then in something like : foo 2 + ; a little
bit of syntactic sugar for the code that says "push the value 2 onto the stack"?
(I'm guessing that "2" itself doesn't achieve full word-hood).

> You can give a name to any concept you can write code for, and the new names
> become immediately accessible just as any other language element -- in fact,
> these 'language elements' are just a collection of built-in code snippets,
with
> names like : ; IF THEN DUP DROP . @ ! and so on. If you're
curious
> as to the actions of any of the built-in words, look first to the ISO/ANSI
Forth
> Standard, and second to my own documentation.

I have the Standard, but I haven't been able to always grok it so far. I plan to
revisit it with this discussion in mind.

> This ability to create new language elements gives you an amazing degree of

> power and freedom; one of the first hurdles in learning Forth is accepting that
> freedom. Most other languages define what a developer can and can't do; Forth
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> elements lets you test-bench each element thoroughly and independently, so
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> your confidence in the resulting program becomes far stronger; and third, the
> new words thus defined frequently find use in other applications.

> Neal

Your last two paragraphs immediately bring to mind OO, but the previous paragraph about defining language elements is the new idea for me.

Steve O.

Re: Newbie questions

Posted by [Neal Bridges](#) on December 14, 1998 at 22:16:38:

In Reply to: *Re: Newbie questions* posted by Steve Odendahl on December 14, 1998 at 21:58:40:

> Is the 2 then in something like : foo 2 + ; a little
> bit of syntactic sugar for the code that says "push the value 2 onto the
stack"?
> (I'm guessing that "2" itself doesn't achieve full word-hood).

You have it. Naming all the numbers would be prohibitive in terms of dictionary space :)

Effectively all numbers in the current base are considered words whose action is to push their value. Numbers ending in a . are double-cell (32-bit) numbers; numbers with an embedded 'e' are floating-point numbers, and so on. When the interpreter encounters a word that isn't found in the dictionary, and can be translated to a number in the current base, it pushes that number onto the stack; if compiling, it then executes LITERAL, which writes code into the current definition to later push that value onto the stack.

> > This ability to create new language elements gives you an amazing degree of
> > power and freedom; one of the first hurdles in learning Forth is accepting
> that
> > freedom. Most other languages define what a developer can and can't do;
Forth
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the
> > new words thus defined frequently find use in other applications.

> Your last two paragraphs immediately bring to mind OO, but the previous
> paragraph about defining language elements is the new idea for me.

Forth has always embodied the techniques referred to in recent years as 'object
orientation'. That, along with the extensibility and reflective nature of the
compiler, and the ability to intermix interpretation and compilation, gives a
remarkably powerful development environment. And all this in an 18K kernel!

Neal

Saving and restoring screen data

Posted by [Neal Bridges](#) on December 10, 1998 at 17:01:06:

I've had questions about accessing the currently displayed PalmOS screen, saving
it, restoring it, etc. Here's a few notes.

There's a bug in 2@a (Quartus 0.9.5), so use this for the moment:

```
: 2@a ( addr. -- xd. ) 2dup @a >r 2 m+ @a r> ;
```

```
WinGetCurrentWindow 4 m+ 2@a
```

The stack now contains the 32-bit address of the display-buffer. It's 3600
bytes long (160 pixels across=20 bytes, 160 rows of 20 bytes=3600 bytes); you

can copy it, write to it, etc. The downside is that the emulator will complain that you've directly accessed the screen memory.

The alternative is to use WinCreateOffscreenWindow, copy your image via WinCopyRectangle to its display-buffer, and likewise use WinCopyRectangle to bring an image on-screen; this will accomplish the same thing without the emulator complaining.

Neal

Re: Saving and restoring screen data

Posted by [Mike Wilson](#) on December 10, 1998 at 17:28:31:

In Reply to: *Saving and restoring screen data* posted by Neal Bridges on December 10, 1998 at 17:01:06:

> The alternative is to use WinCreateOffscreenWindow, copy your image via
> WinCopyRectangle to its display-buffer, and likewise use WinCopyRectangle to
> bring an image on-screen; this will accomplish the same thing without the
> emulator complaining.

>

I've tried this strategy (with Quartus), and was successful at it. It's the "official" way to save your screen contents, so it's more likely to keep working if they ever do finally get around to building a color version of the PalmOS.

McQ.

Function lookup tables

Posted by [Neal Bridges](#) on December 10, 1998 at 16:58:08:

Here's my first take on a syntax for function lookup tables.

needs asm68k

```
code getxt ( +n -- xt )
```

```
2 # TOS asl
```

```
6 TOS PCDI) TOS move
```

```
end-code inline
```

```
: xt ( -- ) ' compile, ; inline
```

```
: lookup ( -- )
```

```
: postpone getxt postpone exit ;
```

```
: end-lookup postpone ; ; immediate
```

\ Example:

```
lookup mytable
```

xt page
xt beep
xt about
end-lookup

2 mytable execute

Let me know what you think of these; if lookup/end-lookup and xt look workable, I'll build them into the kernel.

Neal

Re: Function lookup tables

Posted by [Mike Wilson](#) on December 10, 1998 at 17:21:33:

In Reply to: *Function lookup tables* posted by Neal Bridges on December 10, 1998 at 16:58:08:

> Let me know what you think of these; ...

>

Just a thought: Does the o/s use function tables anywhere, and if so do your function tables match that shape?

McQ.

Re: Function lookup tables

Posted by [Neal Bridges](#) on December 10, 1998 at 17:29:24:

In Reply to: *Re: Function lookup tables* posted by Mike Wilson on December 10, 1998 at 17:21:33:

> > Let me know what you think of these; ...

> >

> Just a thought: Does the o/s use function tables anywhere, and if so do your
> function tables match that shape?

No, nothing accessible through an api, anyway. A function table is just a list of addresses of functions; the lookup/end-lookup as described adds a bit of overhead to cause the resulting 16-bit addresses to be properly relocated in the target PRC.

Neal

undefined word

Posted by [Jim Hendricks](#) on December 10, 1998 at 09:18:30:

I don't know what the behavior of an undefined word is supposed to be but I didn't notice this until I happened to pick up and play with the new 9.5 beta.

When I receive an undefined word, the data stack is wiped out. Is this the way it should be?

Re: undefined word

Posted by [Mike Will](#) on December 10, 1998 at 18:28:47:

In Reply to: *undefined word* posted by Jim Hendricks on December 10, 1998 at 09:18:30:

Neal: excellent work -- one of the best Forth's I've seen

I'm trying to run 'Year' from source on a Palm III. The compiled version runs fine, but when I load from source, it's throwing an 'undefined word' exception right near the end on the word 'menuitem'. Any ideas? Thanks

Re: undefined word

Posted by [Neal Bridges](#) on December 10, 1998 at 19:50:19:

In Reply to: *Re: undefined word* posted by Mike Will on December 10, 1998 at 18:28:47:

> Neal: excellent work -- one of the best Forth's I've seen

Thanks!

> I'm trying to run 'Year' from source on a Palm III. The compiled version runs
> fine, but when I load from source, it's throwing an 'undefined word' exception
> right near the end on the word 'menuitem'. Any ideas? Thanks

Yes, that's now called 'itemid'. Grab the new Events.txt and put it in.

Neal

Re: undefined word

Posted by [Neal Bridges](#) on December 10, 1998 at 11:49:57:

In Reply to: *undefined word* posted by Jim Hendricks on December 10, 1998 at 09:18:30:

> I don't know what the behavior of an undefined word is supposed to be but I didn't notice this until I happened to pick up and play with the new 9.5 beta.

> When I receive an undefined word, the data stack is wiped out. Is this the way it should be?

Yes. Any exception not 'caught' by you (using CATCH) results in an error message display, followed by the action of ABORT, which clears the data stack and calls QUIT. This is specified by the ISO/ANSI Standard.

Neal

RsrcEdit: Feedback requested

Posted by [Neal Bridges](#) on December 10, 1998 at 00:37:13:

I've been corresponding with Roger Lawrence, author of RsrcEdit, the onboard resource editor.

He's already fixed the one bug I found, and asked me to post a message requesting feedback, enhancement suggestions, and so on.

Neal

- [RsrcEdit](#)

Re: RsrcEdit: Feedback requested

Posted by [Tony Sanders](#) on December 10, 1998 at 11:05:34:

In Reply to: *RsrcEdit: Feedback requested* posted by Neal Bridges on December 10, 1998 at 00:37:13:

When I upgraded to the current RsrcEdit I could no longer generate Disassembly dumps -- it crashes and requires a soft-reset.

Re: RsrcEdit: Feedback requested

Posted by [Neal Bridges](#) on December 10, 1998 at 11:39:34:

In Reply to: *Re: RsrcEdit: Feedback requested* posted by Tony Sanders on December 10, 1998 at 11:05:34:

> When I upgraded to the current RsrcEdit I could no longer generate
> Disassembly dumps -- it crashes and requires a soft-reset.

I'm able to do this successfully on a Palm III with the version I downloaded from his site -- perhaps it's been recently updated.

Re: RsrcEdit: Feedback requested

Posted by [Mike Wilson](#) on December 10, 1998 at 09:16:00:

In Reply to: *RsrcEdit: Feedback requested* posted by Neal Bridges on December 10, 1998 at 00:37:13:

> He's already fixed the one bug I found, and asked me to post a message
> requesting feedback, enhancement suggestions, and so on.
>

There seems to be a few fit&finish level problems, such as

- when the list of databases is scrolled, it sometimes corrupts the box around the list, and

- if you select a Tbmp, it automatically goes into hex edit mode (which is ok), but when you then select some *other* resource, it doesn't automatically *leave* hex edit mode.

The only feature I wanted which was not included so far, was the ability to edit Tbmp resources in something other than hex edit mode. Even a little "toggle the bits" editor like the one for icons would be better.

McQ.

Re: RsrcEdit: Feedback requested

Posted by [Jim Hendricks](#) on December 10, 1998 at 09:12:46:

In Reply to: *RsrcEdit: Feedback requested* posted by Neal Bridges on December 10, 1998 at 00:37:13:

There is the problem with changing the number of a resource from the one assigned. This was previously discussed when I encountered a problem using a resource in Quartus and the resource number had not been properly updated. This was correctable by entering in the hex edit mode and changing the number directly.

From the features standpoint, any chance that the hex editor and the associated menu

options can be extended to a Data database where you are working with records instead of resources?

> I've been corresponding with Roger Lawrence, author of RsrcEdit, the onboard resource editor.

> He's already fixed the one bug I found, and asked me to post a message requesting feedback, enhancement suggestions, and so on.

> Neal

Re: RsrcEdit: Feedback requested

Posted by [Neal Bridges](#) on December 10, 1998 at 11:35:56:

In Reply to: *Re: RsrcEdit: Feedback requested* posted by Jim Hendricks on December 10, 1998 at 09:12:46:

> There is the problem with changing the number of a resource from the one assigned. This was previously discussed when I encountered a problem using a resource in Quartus and the resource number had not been properly updated. This was correctable by entering in the hex edit mode and changing the number directly.

I believe that bug has been fixed in the version now available at his site.

> From the features standpoint, any chance that the hex editor and the associated menu options can be extended to a Data database where you are working with records instead of resources?

Does this not already work? I just went into a data database and was able to edit it with the hex editor.

Neal

Re: RsrcEdit: Feedback requested

Posted by [Jim Hendricks](#) on December 10, 1998 at 12:08:35:

In Reply to: *Re: RsrcEdit: Feedback requested* posted by Neal Bridges on December 10, 1998 at 11:35:56:

Oops, yes, you can edit it, what you can't do is create a new record.

> > There is the problem with changing the number of a resource from the one assigned. This was previously discussed when I encountered a problem using a resource in Quartus and the resource number had not been properly updated. This was correctable by entering in the hex edit mode and changing the number directly.

> I believe that bug has been fixed in the version now available at his site.

> > From the features standpoint, any chance that the hex editor and the
> associated menu options can be extended to a Data database where you are working
> with records instead of resources?

> Does this not already work? I just went into a data database and was able to
> edit it with the hex editor.

> Neal

Feedback on 0.9.5?

Posted by [Neal Bridges](#) on December 09, 1998 at 16:34:01:

How's it going with the new beta?

Neal

Re: Feedback on 0.9.5?

Posted by [Matthias Schneider](#) on December 14, 1998 at 03:01:11:

In Reply to: *Feedback on 0.9.5?* posted by Neal Bridges on December 09, 1998 at 16:34:01:

> How's it going with the new beta?

> Neal

Hi Neal,

I remember with former releases I sometimes used startup.quartus to set the stack with a few "default" values (for test issues)
With D.9.5 this isn't possible any more. Now you delete the stack after interpreting startup.quartus and before bringring up the blinking cursor. Is this standard-dependig so that it is not possible for you to change it? I found it very nice without the stack-delete.

Matthias

Re: Feedback on 0.9.5?

Posted by [Neal Bridges](#) on December 14, 1998 at 12:40:58:

In Reply to: *Re: Feedback on 0.9.5?* posted by Matthias Schneider on December 14, 1998 at 03:01:11:

> > How's it going with the new beta?

> > Neal

> Hi Neal,

> I remember with former releases I sometimes used startup.quartus to set the
> stack with a few "default" values (for test issues)
> With D.9.5 this isn't possible any more. Now you delete the stack after
> interpreting startup.quartus and before bringring up the blinking cursor. Is
> this standard-dependig so that it is not possible for you to change it? I
found
> it very nice without the stack-delete.

I'll check the archives later, but I thought it always did an 'ABORT' after
reading startup.quartus. Practially, it only needs to do a QUIT; I can
certainly change that.

Neal

Re: Feedback on 0.9.5?

Posted by [Matthias Schneider](#) on December 15, 1998 at 10:11:10:

In Reply to: *Re: Feedback on 0.9.5?* posted by Neal Bridges on December 14, 1998 at
12:40:58:

> > I remember with former releases I sometimes used startup.quartus to set the
> > stack with a few "default" values (for test issues)
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> > interpreting startup.quartus and before bringring up the blinking cursor. Is
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> I'll check the archives later, but I thought it always did an 'ABORT' after
> reading startup.quartus. Practially, it only needs to do a QUIT; I can
> certainly change that.

> Neal

Would be a little nice feature (if I am not the only one who used / will use it)

Matthias

Re: Feedback on 0.9.5?

Posted by [Neal Bridges](#) on December 15, 1998 at 11:01:27:

In Reply to: *Re: Feedback on 0.9.5?* posted by Matthias Schneider on December 15, 1998 at 10:11:10:

> > I'll check the archives later, but I thought it always did an 'ABORT' after
> > reading startup.quartus. Practially, it only needs to do a QUIT; I can
> > certainly change that.

>
> Would be a little nice feature (if I am not the only one who used / will use
it)

Already implemented. Thanks, Matthias.

Neal

Re: Feedback on 0.9.5?

Posted by [Jim Hendricks](#) on December 10, 1998 at 09:15:21:

In Reply to: *Feedback on 0.9.5?* posted by Neal Bridges on December 09, 1998 at 16:34:01:

Sorry to say, the seasons got me beat back too on time I can devote to Quartus, I haven't touched it since I loaded 9.0 except to load 9.5.

> How's it going with the new beta?

> Neal

Re: Feedback (sic) on 0.9.5?

Posted by [Mike Wilson](#) on December 09, 1998 at 20:00:46:

In Reply to: *Feedback on 0.9.5?* posted by Neal Bridges on December 09, 1998 at 16:34:01:

> How's it going with the new beta?

>

sigh. Sorry, Neal. It's crunch time at work, and christmas shopping time at not-work.

I've downloaded 0.9.5 and done some simple tests, but that's about all. I tried the example of the prompter code that you did, but I haven't had a chance to bolt it into my app yet.

btw, I got challenged by one of the guys I work with to add an alarm to my "internet time" app. I'm not sure how to do this yet, but it sounds interesting.

McQ.

Re: FeeDback on 0.9.5?

Posted by [Neal Bridges](#) on December 09, 1998 at 20:23:19:

In Reply to: *Re: Feeback (sic) on 0.9.5?* posted by Mike Wilson on December 09, 1998 at 20:00:46:

> > How's it going with the new beta?

> >

> *sigh*. Sorry, Neal. It's crunch time at work, and christmas shopping time at > not-work.

> I've downloaded 0.9.5 and done some simple tests, but that's about all. I tried

> the example of the prompter code that you did, but I haven't had a chance to > bolt it into my app yet.

> btw, I got challenged by one of the guys I work with to add an alarm to my > "internet time" app. I'm not sure how to do this yet, but it sounds interesting.

It does indeed. I'll be interested to see how it goes.

Neal

ALLOT and ALLOCATE

Posted by [Ron Doerfler](#) on December 08, 1998 at 20:15:23:

Hi!

First off, I'm thrilled to see Forth on a Palm[Pilot]. My background in Forth began in about 1981 when I typed in the HEX code of FIG-Forth into a 6502 microprocessor board I wire-wrapped from the chip up and bootstrapped from a switchbox I built. What a relief to move from op-codes into a real language! I've liked Forth ever since. What a fun language. GCC looks so tedious and boring that Quartus has me really excited.

Anyway, I have a basic question.

I was playing around trying to ALLOT large amounts of memory (5000 or 10000 bytes) to a variable to make an array. I was getting error messages saying there was insufficient dynamic memory. I tried to

ALLOCATE memory, but I had the same problem. Then, "include"-ing the DOC routine starting failing (it allots 4K for a buffer area). Exiting Quartus didn't help with the latter problem, nor did turning the Pilot off and on. A soft reset ultimately did the trick, and now I can ALLOT 10000 bytes to a variable, and I can include DOC, etc. Was I somehow leaving memory allocated when I left Quartus? Should I have been un-allocating memory areas (I guess that should be FREE-ing them) before quitting Quartus? Or maybe my unit just had some weird unrelated problem that the reset fixed. I was adding and deleting programs, although the final amount of free memory was about 150K when the problem started.

Also, I assume that when you ALLOT space to a variable, you can retrieve data by offsetting the address returned by executing the variable name. How is ALLOCATE different, other than that you have to retrieve the starting address off the stack and assign it to a variable after you do the ALLOCATE? Also, any problem with ALLOT-ing up to the 32K limit of my PalmPilot Pro (other than backward compatibility with the 14K limit of PalmOS1.0)?

Thanks for answering such basic questions.

Ron Doerfler

Re: ALLOT and ALLOCATE

Posted by [Neal Bridges](#) on December 08, 1998 at 20:33:12:

In Reply to: *ALLOT and ALLOCATE* posted by Ron Doerfler on December 08, 1998 at 20:15:23:

> First off, I'm thrilled to see Forth on a Palm[Pilot].
> My background in Forth began in about 1981 when I typed
> in the HEX code of FIG-Forth into a 6502 microprocessor
> board I wire-wrapped from the chip up and bootstrapped
> from a switchbox I built. What a relief to move from
> op-codes into a real language! I've liked Forth ever
> since. What a fun language. GCC looks so tedious and
> boring that Quartus has me really excited.

Glad to hear it!

> Anyway, I have a basic question.

> I was playing around trying to ALLOT large amounts
> of memory (5000 or 10000 bytes) to a variable to
> make an array. I was getting error messages saying
> there was insufficient dynamic memory. I tried to
> ALLOCATE memory, but I had the same problem. Then,
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> with the latter problem, nor did turning the Pilot

> off and on. A soft reset ultimately did the trick, and now I
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> etc. Was I somehow leaving memory allocated when I left
> Quartus? Should I have been un-allocating memory
> areas (I guess that should be FREE-ing them) before
> quitting Quartus? Or maybe my unit just had some weird
> unrelated problem that the reset fixed. I was adding and
> deleting programs, although the final amount of free memory
> was about 150K when the problem started.

Exiting Quartus frees all dynamic RAM; something else must have been keeping it locked.

> Also, I assume that when you ALLOT space to a variable,
> you can retrieve data by offsetting the address returned
> by executing the variable name. How is ALLOCATE different,
> other than that you have to retrieve the starting address
> off the stack and assign it to a variable after you
> do the ALLOCATE? Also, any problem with ALLOT-ing up to
> the 32K limit of my PalmPilot Pro (other than backward
> compatibility with the 14K limit of PalmOS1.0)?

ALLOT'd memory all comes from one contiguous block of dynamic RAM (called 'dataspace') that, during compile-time, is dynamically increased in size by Quartus. VARIABLES live here; CREATE words point here; strings are stored here, etc. HERE is a pointer into this block.

ALLOT'd memory can't be freed; ALLOCATE is there for those occasions when you don't know at compile-time how much RAM you'll need, or for transient areas that you wish to discard. ALLOT can't be used at run-time (in a stand-alone PRC), but ALLOCATE can.

ALLOCATED memory is not part of the dataspace contiguous block of RAM. Each ALLOCATED block is at its own memory location, and can be resized or freed.

If you plan to do ALLOCATES at compile-time (rather than just at run-time), be sure and do this...

```
needs memory  
8192 allot -8192 allot
```

There's a lengthy discussion of this elsewhere in the discussion forum, but the gist of it is that by doing the balanced allot as shown, you'll stop Quartus from dynamically resizing dataspace until HERE reaches near 8192 bytes (or whatever value you specify). This is required because when dataspace resizes, the dynamic RAM base pointer can change, which causes problems for ALLOCATED blocks (which are referenced via the same base pointer).

If you're using ALLOT at compile-time, and ALLOCATE (if required) at run-time, as is the usual practice, you'll have no problems and won't require the balanced ALLOT above.

> Thanks for answering such basic questions.

Anytime!

Neal

Re: ALLOT and ALLOCATE

Posted by [Ron Doerfler](#) on December 09, 1998 at 00:12:42:

In Reply to: *Re: ALLOT and ALLOCATE* posted by Neal Bridges on December 08, 1998 at 20:33:12:

Hi Neal,

Thank you for your response!

> Exiting Quartus frees all dynamic RAM; something else must have been
> keeping it locked.

Happened again. Time to start ripping hacks out one by one...

> There's a lengthy discussion of this elsewhere in the discussion
> forum, but the gist of it is...

Oops! You know, I searched through the archived messages, but I didn't review the unarchived ones because I had read through them all recently. However, I forgot that this WAS discussed, and I appreciate you being nice enough to summarize it. Next time I'll look over the messages more closely.

Thanks again,

Ron Doerfler

Re: ALLOT and ALLOCATE

Posted by [Neal Bridges](#) on December 09, 1998 at 02:12:55:

In Reply to: *Re: ALLOT and ALLOCATE* posted by Ron Doerfler on December 09, 1998 at 00:12:42:

> Hi Neal,

> Thank you for your response!

> > Exiting Quartus frees all dynamic RAM; something else must have been
> > keeping it locked.

> Happened again. Time to start ripping hacks out one by one...

Hmm. If you can reproduce the problem, send me the steps, and I'll try it here.

> > There's a lengthy discussion of this elsewhere in the discussion
> > forum, but the gist of it is...

> Oops! You know, I searched through the archived messages, but I didn't review the unarchived ones because I had read through them all recently. However, I forgot that this WAS discussed, and I appreciate you being nice enough to summarize it. Next time I'll look over the messages more closely.

It's not a problem; the difference between ALLOT and ALLOCATE is subtle and bears repeating. Effectively, ALLOT is what globals are in C, and ALLOCATE/FREE correspond to malloc/free.

Neal

New version of stackdia.zip in the Quartus File Area

Posted by [Neal Bridges](#) on December 08, 1998 at 19:54:50:

I've fixed a few errors and added the stack diagrams for all Hwr* traps (appearing in the next release of Quartus). There are now 828 documented systrips. If you downloaded this before, grab it again-- make sure to delete the old Doc version from your Pilot first, as I've changed the title.

Neal

- [File Area](#)

Missing Hwr* systrips

Posted by [Neal Bridges](#) on December 07, 1998 at 22:59:12:

Nobody's complained yet, but there the 32 systrips beginning with Hwr* are currently missing from Quartus. Don't panic; they're already put back in.

Neal

Interesting Forth article in Dr. Dobbs

Posted by [Neal Bridges](#) on December 07, 1998 at 22:38:20:

#295, January 1998 Dr. Dobbs has an article on 'Ficl: A Forth-Like Embedded Interpreter'. Looks like ANS Forth to me. Worth a read.

Neal

Re: Interesting Forth article in Dr. Dobbs

Posted by [William Tanksley](#) on December 07, 1998 at 23:57:14:

In Reply to: *Interesting Forth article in Dr. Dobbs* posted by Neal Bridges on December 07, 1998 at 22:38:20:

> #295, January 1998 Dr. Dobbs has an article on 'Ficl: A Forth-Like Embedded
> Interpreter'. Looks like ANS Forth to me. Worth a read.

Sure is! It's AND Forth, and it also has some other interesting extensions.
Sure, object orientation is nothing new -- but this Forth has well-documented
object orientation! Wow. It's designed to play well with other languages; you
can even wrap a class around any arbitrary thing. Might be nice here...

BSD adopted it as the bootloader system. Now Forth isn't only in every PowerPC
and SPARC; it's also on everything running FreeBSD.

> Neal

-Billy

- [Docs for FICL](#)

Re: Interesting Forth article in Dr. Dobbs

Posted by [Neal Bridges](#) on December 08, 1998 at 00:13:31:

In Reply to: *Re: Interesting Forth article in Dr. Dobbs* posted by William Tanksley on December 07, 1998 at 23:57:14:

> > #295, January 1998 Dr. Dobbs has an article on 'Ficl: A Forth-Like Embedded
> > Interpreter'. Looks like ANS Forth to me. Worth a read.

> Sure is! It's AND Forth, and it also has some other interesting extensions.
> Sure, object orientation is nothing new -- but this Forth has well-documented
> object orientation! Wow. It's designed to play well with other languages;
you
> can even wrap a class around any arbitrary thing. Might be nice here...

I'll have to look at his OO extensions; perhaps they're a good fit for Quartus,
for those who wish to experiment with such things.

> BSD adopted it as the bootloader system. Now Forth isn't only in every
PowerPC
> and SPARC; it's also on everything running FreeBSD.

Tip of the iceberg.

Neal

Re: Interesting Forth article in Dr. Dobbs

Posted by [Neal Bridges](#) on December 08, 1998 at 10:21:40:

In Reply to: *Re: Interesting Forth article in Dr. Dobbs* posted by Neal Bridges on December 08, 1998 at 00:13:31:

> I'll have to look at his OO extensions; perhaps they're a good fit for Quartus,
> for those who wish to experiment with such things.

Actually I've had a look at it since; it uses an odd sort of late binding that searches the Forth dictionary for each method, something that wouldn't work in turnkey applications. But it's interesting code nonetheless.

Neal

Re: Interesting Forth article in Dr. Dobbs

Posted by [Neal Bridges](#) on December 07, 1998 at 23:29:58:

In Reply to: *Interesting Forth article in Dr. Dobbs* posted by Neal Bridges on December 07, 1998 at 22:38:20:

> #295, January 1998 Dr. Dobbs has an article on 'Ficl: A Forth-Like Embedded
> Interpreter'. Looks like ANS Forth to me. Worth a read.

Er, make that January 1999.

Neal

New files: input, Forms, Fields, resources

Posted by [Neal Bridges](#) on December 07, 1998 at 21:25:10:

A collection of new files in the Quartus File Area:

Forms.txt: Useful GUI form manipulation words.

Fields.txt: Useful GUI field manipulation words.

resources.txt: Provides use-resources, a word to simplify resource access in your applications.

input.txt: Provides get-input, a popup graphical dialog for text input.

qrsrsrc.zip: Contains *Qrsrsrc.PRC*, a resource database containing forms useful in Quartus apps. The present release contains one form, used by *input.txt*.

Let me know what you think!

Neal

- [File Area](#)

where is tools-ext???

Posted by [Tony Sanders](#) on December 08, 1998 at 16:23:23:

In Reply to: *New files: input, Forms, Fields, resources* posted by Neal Bridges on December 07, 1998 at 21:25:10:

input.txt has a "needs tools-ext" but I don't have it and didn't see it in the File Area.

Re: where is tools-ext???

Posted by [Neal Bridges](#) on December 08, 1998 at 16:40:06:

In Reply to: *where is tools-ext???* posted by Tony Sanders on December 08, 1998 at 16:23:23:

> input.txt has a "needs tools-ext" but I don't have it and didn't
> see it in the File Area.

It's a PilotFORTH file I hadn't yet moved. I've put the most recent version in the Quartus File Area. Sorry for the confusion.

Neal

Re: New files: input, Forms, Fields, resources

Posted by [Matthias Schneider](#) on December 08, 1998 at 04:05:11:

In Reply to: *New files: input, Forms, Fields, resources* posted by Neal Bridges on December 07, 1998 at 21:25:10:

> A collection of new files in the Quartus File Area:

> *Forms.txt*: Useful GUI form manipulation words.

> *Fields.txt*: Useful GUI field manipulation words.

> *resources.txt*: Provides use-resources, a word to simplify

> resource access in your applications.

> *input.txt*: Provides get-input, a popup graphical dialog
> for text input.

> *qrsrc.zip*: Contains *Qrsrc.PRC*, a resource database
containing

> forms useful in Quartus apps. The present release contains one form, used by
> *input.txt*.

> Let me know what you think!

> Neal

Wow! This is a first, great step on the way closing the missing link between Quartus and a "real"-Pilot-App! A resource database with all the common things in and a few helper words - would that be possible for anyone to write? (I know that I could do it on my own using PILA & Co., but, I'm sorry, that isn't so easy like it sounds for people with no experiences on that field like me!)

Matthias

Re: New files: input, Forms, Fields, resources

Posted by [Neal Bridges](#) on December 08, 1998 at 08:20:14:

In Reply to: *Re: New files: input, Forms, Fields, resources* posted by Matthias Schneider on December 08, 1998 at 04:05:11:

> Wow! This is a first, great step on the way closing the missing link between
> Quartus and a "real"-Pilot-App! A resource database with all the common things
> in and a few helper words - would that be possible for anyone to write? (I
know
> that I could do it on my own using PILA & Co., but, I'm sorry, that isn't so
> easy like it sounds for people with no experiences on that field like me!)

It's possible to generate 'real' apps now with Quartus, with PalmOS GUI objects, etc. -- see Year, Duco, and Swatch as examples.

I'd be happy to extend Qrsrc beyond the input-dialog form it currently has; let me know what you'd like to see, I'll consider it for inclusion.

Neal

stackdia.zip: Stack diagrams for all PalmOS systrops

Posted by [Neal Bridges](#) on December 07, 1998 at 01:27:35:

I've put up *stackdia.zip*, containing Doc (.pdb) and ASCII versions of stack diagrams for all 796 PalmOS III systrops built into Quartus Forth.

Let me know what you think.

Neal

- [File Area](#)

Re: stackdia.zip: Stack diagrams for all PalmOS systraps

Posted by [Erwin Schomburg](#) on December 07, 1998 at 06:21:19:

In Reply to: *stackdia.zip: Stack diagrams for all PalmOS systraps* posted by Neal Bridges on December 07, 1998 at 01:27:35:

"Most helpful" would be the least to say.

Thanks

/Erwin

> I've put up *stackdia.zip*, containing Doc (.pdb) and ASCII versions of
> stack diagrams for all 796 PalmOS III systraps built into Quartus Forth.
> Let me know what you think.
> Neal

Quartus 0.9.5B Now Available!

Posted by [Neal Bridges](#) on December 07, 1998 at 00:38:30:

Quartus 0.9.5B is now available in the Quartus File Area. Some interesting changes:

- PgUp can now retrieve the last typed line after a "non-existent file" error
- ALLOT now accurately reports dynamic RAM resizing errors
- The target size of a number of kernel words has been reduced
- appStopEvents now generate a Quartus exception (-257) which propagates up through code and can be used to intercept program exit for special handling
- No more 'field overlocked' messages in MemoPad when exiting during an INCLUDE
- menuEvents are now available via EKEY & friends
- ACCEPT now allows multi-line shortcuts

Neal

- [File Area](#)

Upcoming Changes in Quartus Forth 0.9.5B

Posted by [Neal Bridges](#) on December 05, 1998 at 14:17:46:

I've made a few important enhancements -- I'll be releasing a new beta tonight once the changes have passed my regression testing:

Upcoming changes in Quartus Forth version 0.9.5B:

- appStopEvents now generate a Quartus exception (-257) which propagates up through code and can be used (via CATCH) to intercept application exit for special handling
- Fixed 'field overlocked' errors in MemoPad after exiting Quartus during an INCLUDE
- Menu events are now available via EKEY & friends, virtually eliminating the need for 'eventhandler' routines in most applications
- Modified ACCEPT to enable multi-line shortcuts while correctly clearing the menu status indicator

Neal

I need a new template.

Posted by [Mike Wilson](#) on December 05, 1998 at 09:06:49:

sigh. Well, I finally got my "internet time" app going... all except for setting the timezone.

All I wanted to do was pop up a little modal dialog with a numeric field and a button. ResEdit worked great for creating the form, but I don't actually understand enough about Pilot programming to be able to get it going. It seems like I would have to open it, plug in a new event handler, watch for the ok button, pull out the field, and then close the form again. Is there no simpler way to do this?

So far, I've been getting a log of mileage out of using Neal's sample programs as templates. So what I would *really* like would be a "\ Prompter" memo which did all the steps for some generic single line prompter. In fact, I suspect that this would get used quite a bit.

McQ.

Re: I need a new template.

Posted by [Neal Bridges](#) on December 05, 1998 at 10:56:21:

In Reply to: *I need a new template.* posted by Mike Wilson on December 05, 1998 at 09:06:49:

> *sigh*. Well, I finally got my "internet time" app going... all except for
> setting the timezone.

> All I wanted to do was pop up a little modal dialog with a numeric field and a
> button. ResEdit worked great for creating the form, but I don't actually
> understand enough about Pilot programming to be able to get it going. It seems
> like I would have to open it, plug in a new event handler, watch for the ok
> button, pull out the field, and then close the form again. Is there no simpler
> way to do this?

That's basically it, but you could do it without using 'eventhandler' --
just write an ekey loop that watches for ctlSelectEvent (the 'ok' button
press), and then extracts the field data before dismissing the form. By the
way, watch out for the 'numeric' setting on your field, as PalmOS version 1 ROMs
don't pay any attention to the setting and will allow alphabetic characters
anyway.

> So far, I've been getting a log of mileage out of using Neal's sample programs
> as templates. So what I would *really* like would be a "\ Prompter" memo which
> did all the steps for some generic single line prompter. In fact, I suspect
> that this would get used quite a bit.

By 'prompter', do you mean an app to do the kind of input you suggest above?

Neal

Re: I need a new template.

Posted by [Mike Wilson](#) on December 05, 1998 at 11:59:32:

In Reply to: *Re: I need a new template.* posted by Neal Bridges on December 05, 1998 at 10:56:21:

> By 'prompter', do you mean an app to do the kind of input you suggest above?

>

Yup. It just struck me that this is the kind of thing that many apps need to do
(or at least could use instead of doing real work ;-).

Anyway, I'm going to go off and see what I can do. Input is definately still
the big bugaboo for me. I don't understand the relationship between
eventHandler, EKEY, callbacks (ok to open a modal form in a menu callback?,
etc.), and so forth. For example, can everything be done with EKEY? If not, is
there some way Quartus could hide the difference?

I'm still looking for that "uses all the features" Quartus program that I can
blatently steal all of the standard bits from. Something say, as complex as the
Address Book, or even something like Andrew Low's List program. I've looked at

the C source code for them. They definately do everything I want to be able to do, and I know that I could transliterate them directly into Quartus, but that doesn't leave you with a good Quartus program. Quartus **does** provide features which make some of that stuff easier. It also has a certain "style" of its own. :-)

McQ.

Re: I need a new template.

Posted by [Neal Bridges](#) on December 05, 1998 at 13:23:08:

In Reply to: *Re: I need a new template.* posted by Mike Wilson on December 05, 1998 at 11:59:32:

> > By 'prompter', do you mean an app to do the kind of input you suggest above?
> >
> Yup. It just struck me that this is the kind of thing that many apps need to do
> (or at least could use instead of doing real work ;-).

I'm writing a 'prompt' module right now.

> Anyway, I'm going to go off and see what I can do. Input is definately still
> the big bugaboo for me. I don't understand the relationship between
> eventHandler, EKEY, callbacks (ok to open a modal form in a menu callback?,
> etc.), and so forth. For example, can everything be done with EKEY? If not, is
> there some way Quartus could hide the difference?

Here's the thumbnail sketch:

(EKEY) (and EKEY and KEY, which use (EKEY)) is Quartus' event handling loop. It takes care of handling system events, passing events to form handlers, etc. When it finds an event that isn't handled by the system or a form handler, it passes it to you as an eventtype on the stack, with the event data stored at 'event'. In this way Quartus hides virtually all event processing.

By default, all forms displayed with ShowForm are established with a simple handler that calls the xt in 'eventhandler' whenever events are passed to that form.

MainForm is a special case; it has its own handler to take care of the Quarus menu items.

So in one way or another, it is all handled by EKEY. The reason for the 'eventhandler' hook is that the PalmOS expects forms to handle their own menu events within a form handler; if they aren't handled, it beeps every time you choose a menu option. Let me think about it; maybe there's a way to suppress the silly beep, and let menu events pass out of EKEY. That would simplify things a bit, and eliminate the need for 'eventhandler' routines except in special cases. It's a good thought!

> I'm still looking for that "uses all the features" Quartus program that I can
> blatantly steal all of the standard bits from. Something say, as complex as the

> Address Book, or even something like Andrew Low's List program. I've looked at
> the C source code for them. They definately do everything I want to be able to
> do, and I know that I could transliterate them directly into Quartus, but that
> doesn't leave you a with good Quartus program. Quartus *does* provide features
> which make some of that stuff easier. It also has a certain "style" of its
own.
> :-)

It's a question of human resources, Mike. I'm dancing as fast as I can. I'll
post the 'prompt' module when it's tested; it brings up a modal dialog box and
lets you enter a string with your own title and prompt text.

Neal

Re: I need a new template.

Posted by [Mike Wilson](#) on December 05, 1998 at 21:54:31:

In Reply to: *Re: I need a new template.* posted by Neal Bridges on December 05, 1998
at 13:23:08:

> It's a question of human resources, Mike. I'm dancing as fast as I can.
>
(not sure if this will work -- I'm sending from the Pilot)

No worries, Neal! You're already improving Quartus, writing demo apps, and keeping up
with the bbs at a rate that makes you seem super-human (You aren't 4 people working
full time on this, are you?).

I'm just being a typical, whiny luser.

Peace,
McQ

Re: I need a new template.

Posted by [Neal Bridges](#) on December 05, 1998 at 23:49:31:

In Reply to: *Re: I need a new template.* posted by Mike Wilson on December 05, 1998 at
21:54:31:

> > It's a question of human resources, Mike. I'm dancing as fast as I can.
> >
> (not sure if this will work -- I'm sending from the Pilot)

> No worries, Neal! You're already improving Quartus, writing demo apps, and
keeping up with the bbs at a rate that makes you seem super-human (You aren't 4
people working full time on this, are you?).

1 person with a day-job. Thanks for the compliment!

> I'm just being a typical, whiny luser.

I appreciate the input; actually the impatience of the user base keeps me honest & working on the task at hand.

Neal

New behavior in D.9.0B

Posted by [Mike Wilson](#) on December 04, 1998 at 13:31:21:

I have been using a shortcut to load and run my test code in Quartus for quite a while now. The shortcut looks like...

```
needs inetTime  
t
```

... with line breaks at the end of each line. This has been working perfectly so far, but when I ran it in the latest drop of Quartus, invoking the shortcut generated:

```
needs inetTimet
```

I tried firing the shortcut in the notepad and it correctly displayed on multiple lines. I also tried a different multi-line shortcut and it too entered all the text on a single line in Quartus.

McQ.

Re: New behavior in D.9.0B

Posted by [Neal Bridges](#) on December 04, 1998 at 15:01:03:

In Reply to: *New behavior in D.9.0B* posted by Mike Wilson on December 04, 1998 at 13:31:21:

> I have been using a shortcut to load and run my test code in Quartus for quite
> a while now. The shortcut looks like...
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> ... with line breaks at the end of each line. This has been working perfectly
> so far, but when I ran it in the latest drop of Quartus, invoking the shortcut
> generated:

>

> needs inetTimet

>

> I tried firing the shortcut in the notepad and it correctly displayed on
> multiple lines. I also tried a different multi-line shortcut and it too
> entered
> all the text on a single line in Quartus.

I had no idea you *could* do multiline shortcuts, Mike. Interesting.

What has happened is that the fix for the bug you reported (wherein the system did odd things if you hit Enter while "Paste" or "Copy" was still displayed on the screen) is effectively clearing the input queue after Enter is received.

Neal

Re: New behavior in D.9.0B

Posted by [Mike Wilson](#) on December 04, 1998 at 16:33:20:

In Reply to: *Re: New behavior in D.9.0B* posted by Neal Bridges on December 04, 1998 at 15:01:03:

> What has happened is that the fix for the bug you reported
> (wherein the system did odd things if you hit Enter while
> "Paste" or "Copy" was still displayed on the screen) is
> effectively clearing the input queue after Enter is received.>

>

Hmm... I just read this again. The situation may be even stranger than you describe, since all of the non-enter characters from the second line appear on the first line, so the buffer can't exactly be getting "cleared".

McQ.

Re: New behavior in D.9.0B

Posted by [Neal Bridges](#) on December 04, 1998 at 16:43:31:

In Reply to: *Re: New behavior in D.9.0B* posted by Mike Wilson on December 04, 1998 at 16:33:20:

> > What has happened is that the fix for the bug you reported
> > (wherein the system did odd things if you hit Enter while
> > "Paste" or "Copy" was still displayed on the screen) is
> > effectively clearing the input queue after Enter is received.>

> >

> > Hmm... I just read this again. The situation may be even stranger than you
> > describe, since all of the non-enter characters from the second line appear on
> > the first line, so the buffer can't exactly be getting "cleared".

What it does is process and discard events after you hit Enter until the first nilEvent is received. There may be another way to handle this; I'm going to check today and let you know.

Neal

Re: New behavior in D.9.0B

Posted by [Mike Wilson](#) on December 04, 1998 at 16:27:34:

In Reply to: *Re: New behavior in D.9.0B* posted by Neal Bridges on December 04, 1998 at 15:01:03:

> What has happened is that the fix for the bug you reported
> (wherein the system did odd things if you hit Enter while
> "Paste" or "Copy" was still displayed on the screen) is
> effectively clearing the input queue after Enter is received.>

>
Bummer. The old behavior is very nice, since it means you can switch between the notepad and Quartus, and start your test running in as little as 1 tap + 2 gestures:

- tap on calculator button (with it mapped to Quartus)
- write "shortcut-y" or any other unused letter

poof, your app runs. Very nice.

McQ.

Re: New behavior in D.9.0B

Posted by [Mark Beckman](#) on December 04, 1998 at 17:34:59:

In Reply to: *Re: New behavior in D.9.0B* posted by Mike Wilson on December 04, 1998 at 16:27:34:

Unrelated to the behavior but an even "quicker" way to use Quartis/Memopad:

- 1) Load and run the word you working on from your startup.quartis file.
- 2) Use switch hack to switch back and forth between Memopad and Quartis.

This even works with Neal's new /E (last error) command, and it only takes 1 graffiti stroke. (By the way Neal, I LIKE /E !)

P.S. don't forget to take the calls to your new words out of startup.quartis

> > What has happened is that the fix for the bug you reported
> > (wherein the system did odd things if you hit Enter while
> > "Paste" or "Copy" was still displayed on the screen) is

> > effectively clearing the input queue after Enter is received.>
> >
> Bummer. The old behavior is very nice, since it means you can switch between
> the notepad and Quartus, and start your test running in as little as 1 tap +
> 2
> gestures:
>
>
>
● tap on calculator button (with it mapped to Quartus)
>
● write "shortcut-y" or any other unused letter
>
>
> *poof*, your app runs. Very nice.
> McQ.

Re: New behavior in D.9.0B

Posted by [Mike Wilson](#) on December 04, 1998 at 20:08:35:

In Reply to: *Re: New behavior in D.9.0B* posted by Mark Beckman on December 04, 1998 at 17:34:59:

> Unrelated to the behavior but an even "quicker" way to use Quartis/Memopad:
> 1) Load and run the word you working on from your startup.quartis file.
> 2) Use switch hack to switch back and forth between Memopad and Quartis.
>

I tried this for a while, but I found that I too often wanted to just start Quartus and try something. Having it attempt to load the app every time seemed like it got in the way as often as it helped.

The other nice attribute of doing it my way is that you can have several projects on the go, and pick which one to load just by drawing a different character.

Oh well,
McQ.

Re: New behavior in D.9.0B

Posted by [Neal Bridges](#) on December 04, 1998 at 19:20:16:

In Reply to: *Re: New behavior in D.9.0B* posted by Mark Beckman on December 04, 1998 at 17:34:59:

> Unrelated to the behavior but an even "quicker" way to use Quartis/Memopad:
> 1) Load and run the word you working on from your startup.quartis file.
> 2) Use switch hack to switch back and forth between Memopad and Quartis.
> This even works with Neal's new /E (last error) command, and it only takes 1
> graffiti stroke. (By the way Neal, I LIKE /E !)

Thanks-- so do I! :)

Neal

Re: New behavior in D.9.0B

Posted by [Jim Hendricks](#) on December 04, 1998 at 17:33:14:

In Reply to: *Re: New behavior in D.9.0B* posted by Mike Wilson on December 04, 1998 at 16:27:34:

Hate to sound stupid so what I am about to say may be from a lack of knowledge but couldn't you make your shortcut do the needs xxx and within xxx call the first work of your app at the bottom of the memo?

> > What has happened is that the fix for the bug you reported
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> Bummer. The old behavior is very nice, since it means you can switch between
> the notepad and Quartus, and start your test running in as little as 1 tap + 2
> gestures:
>

>
> ● tap on calculator button (with it mapped to Quartus)

> >
> ● write "shortcut-y" or any other unused letter
>

> *poof*, your app runs. Very nice.

> McQ.

Re: New behavior in D.9.0B

Posted by [Mike Wilson](#) on December 04, 1998 at 20:03:07:

In Reply to: *Re: New behavior in D.9.0B* posted by Jim Hendricks on December 04, 1998 at 17:33:14:

> Hate to sound stupid so what I am about to say may
> be from a lack of knowledge but couldn't you make your
> shortcut do the needs xxx and within xxx call the first
> work of your app at the bottom of the memo?
>

Yup. And that's probably easier to configure too. But I was having fun doing it the old way :-). Anyway, I reported the difference in behavior because I noticed it, and I wasn't sure Neal had.

McQ.

Quartus 0.9.0B now available!

Posted by [Neal Bridges](#) on December 04, 1998 at 01:33:53:

The latest beta, 0.9.0, is now available in the File Area. The development beta has gone out under separate cover -- if you expected to receive the development beta and didn't, let me know.

I've updated the systrap table to reflect all function names and arguments from PalmOS3 -- there are now 796 defined systraps in the Quartus Forth system.

Another feature I can't believe I lived without before now is the Last Error feature -- command-E (or "Last Error" from the "Go" menu) takes you to the exact point in the MemoPad where your last error occurred, and highlights the source in question.

EKEY has been enhanced to generate a nilEvent at power-up; this is handy if your app is active and you want it to refresh the screen at the moment when the device is turned on.

I've added (bye) in the interest of allowing developers to entirely override Quartus' event handling in favour of their own, and (ekey) to allow you to specify a different event timeout than the default 50 ms that EKEY provides.

BlankFormID, TitledFormID, and MainFormID are provided so you don't have to remember 1001, 1002, and 1000 anymore.

There are one or two other changes & bug-fixes; have fun and let me know how it's going!

Neal

- [File Area](#)

Re: Quartus 0.9.0B now available!

Posted by [Matthias Schneider](#) on December 04, 1998 at 07:25:49:

In Reply to: *Quartus 0.9.0B now available!* posted by Neal Bridges on December 04, 1998 at 01:33:53:

Hi Neal,

sorry for being "Quartus-absend" quite a long time.

> The latest beta, 0.9.0, is now available in the File Area. The development
> beta
> has gone out under separate cover -- if you expected to receive the
> development
> beta and didn't, let me know.

It works fine, as always! One thing I'm not sure why it is AS it is: my
Stand-alone-Apps become bigger and bigger every time I compile them with a new
Quartus-Version (without changing anything in the sources). I remember that you
said (long, long ago) that apps will become smaller in newer Quartus-releases.
The "size-gap" between D.8.2 and D.9.0 is enourmous : about 5%. Do you know
about that?

> Another feature I can't believe I lived without before now is the Last Error
> feature -- command-E (or "Last Error" from the "Go" menu) takes you to the
> exact point in the MemoPad where your last error occured, and highlights the
> source in question.

simply great!

> Neal

Matthias

PS: This is only a first impression - I'll tell you after playing around a
little bit more....

Re: Quartus 0.9.0B now available!

Posted by [Neal Bridges](#) on December 04, 1998 at 11:30:08:

In Reply to: *Re: Quartus 0.9.0B now available!* posted by Matthias Schneider on
December 04, 1998 at 07:25:49:

> It works fine, as always! One thing I'm not sure why it is AS it is: my
> Stand-alone-Apps become bigger and bigger every time I compile them with a new
> Quartus-Version (without changing anything in the sources). I remember that
> you
> said (long, long ago) that apps will become smaller in newer Quartus-releases.

> The "size-gap" between D.8.2 and D.9.0 is enormous : about 5%. Do you know
> about that?

That's odd, Matthias. Ship me a before and after PRC, I'll find out where the growth is occurring. Dataspace overhead has grown very slightly, but not so much as to be 5% across even the smallest program. Additional optimization for size is coming, but not until the base features are completely tested -- throwing new optimization in the mix makes problem diagnosis painfully difficult.

One thing just occurred to me -- there's a new form (tFRM) resource, TitledFormID, that exists by default in all compiled targets. You can delete it (with delsrc) if you're not using it; in fact you can delete MainFormID and BlankFormID if you have no use for them, also.

> > Another feature I can't believe I lived without before now is the Last Error
> > feature -- command-E (or "Last Error" from the "Go" menu) takes you to the
> > exact point in the MemoPad where your last error occurred, and highlights the
> > source in question.

> simply great!

Thanks!

Neal

Re: Quartus 0.9.0B now available!

Posted by [Matthias Schneider](#) on December 07, 1998 at 04:14:02:

In Reply to: *Re: Quartus 0.9.0B now available!* posted by Neal Bridges on December 04, 1998 at 11:30:08:

> > It works fine, as always! One thing I'm not sure why it is AS it is: my
> > Stand-alone-Apps become bigger and bigger every time I compile them with a
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> > Quartus-Version (without changing anything in the sources). I remember that
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> > said (long, long ago) that apps will become smaller in newer
Quartus-releases.
> > The "size-gap" between D.8.2 and D.9.0 is enormous : about 5%. Do you know
> > about that?

> That's odd, Matthias. Ship me a before and after PRC, I'll find out where the
> growth is occurring. Dataspace overhead has grown very slightly, but not so
> much as to be 5% across even the smallest program. Additional optimization
for
> size is coming, but not until the base features are completely tested --
> throwing new optimization in the mix makes problem diagnosis painfully
> difficult.

Hi Neal, I have compiled three versions of exactly the same code for you:

Version bytes on Pilot -134= bytes on PC
D.8.2: 14378 14244

D.9.0: 15108 14974

D.9.5: 14550 14416

So you see the gap between D.8.2 and D.9.0 (but it's smaller again with D.9.5)

I have mailed the three sources to you.

Matthias

Bug in WinDeleteWindow?

Posted by [Mike Wilson](#) on December 03, 1998 at 20:57:11:

sigh. This code seems pretty obvious to me...

```
: releaseDigitsWindow
  0
  digitsWindow 2@
  WinDeleteWindow
;
```

... but generates a stack underflow. WinDeleteWindow is defined as:

```
void WinDeleteWindow (WinHandle winHandle, Boolean eraseIt)
```

McQ.

Re: Bug in WinDeleteWindow?

Posted by [Neal Bridges](#) on December 03, 1998 at 21:04:05:

In Reply to: *Bug in WinDeleteWindow?* posted by Mike Wilson on December 03, 1998 at 20:57:11:

> *sigh*. This code seems pretty obvious to me...

```
>
>
> : releaseDigitsWindow
>   0
>   digitsWindow 2@
>   WinDeleteWindow
> ;
>
```

> ... but generates a stack underflow. WinDeleteWindow is defined as:

```
>
> void WinDeleteWindow (WinHandle winHandle, Boolean eraseIt)
>
```

> McQ.

There's an error in several sysstraps that take a final 'boolean' parameter. I'm fixing them now. You're using all the sysstraps I've never used :)

You can fix WinDeleteWindow for the moment--

```
: WinDeleteWindow
41464 sysstrap 2drop drop ;
```

Neal

Bug in WinCopyRectangle?

Posted by [Mike Wilson](#) on December 03, 1998 at 20:09:03:

I've been experimenting with WinCopyRectangle and it appears that after calling it there is a 0 left on the stack. It's spec'ed to be return type void, so I expect this is wrong.

The alternative is that my code is bogus -- it certainly wouldn't be the first time -- so I've included the offending bits here. "paintDigit" is trying to pull a particular rectangular area out of an offscreen window ("digitsWindow") containing glyphs for the numbers 0..9 (and "@", of course ;-).

```
40 CONSTANT digitHeight
32 CONSTANT digitWidth
2VARIABLE digitsWindow
CREATE srcRect 0 , 0 , 0 , 0 ,

: digitRect ( n rectPtr -- )
  SWAP
  digitWidth * OVER !
  3 OVER CELL+ !
  digitWidth OVER 2 CELLS + !
  digitHeight SWAP 3 CELLS + !
;

: paintDigit ( y x n -- )
  srcRect digitRect
  0 ROT ROT
  srcRect >abs
  WinGetDrawWindow
  digitsWindow 2@
  WinCopyRectangle
;
```

McQ.

Re: Bug in WinCopyRectangle?

Posted by [Neal Bridges](#) on December 03, 1998 at 20:20:50:

In Reply to: *Bug in WinCopyRectangle?* posted by Mike Wilson on December 03, 1998 at 20:09:03:

> I've been experimenting with WinCopyRectangle and it appears that after calling
> it there is a 0 left on the stack. It's spec'ed to be return type void, so I
> expect this is wrong.

It's a bug. Temporarily redefine WinCopyRectangle as follows:

```
: WinCopyRectangle WinCopyRectangle drop ;
```

That'll fix it for now. Remember to take this out once I ship a build with the change in it.

Neal

Constants and structs.

Posted by [Mike Wilson](#) on December 03, 1998 at 10:00:51:

It seems like whenever I go to do something close to the o/s with Quartus, I have to find the header file with the associated structs and #defines, and manually build matching forth constructs.

It would be nice if there was some way to auto-generate a set of memos (or a DOC file) with the converted versions of all the standard header files. You would probably still want to pick and choose which pieces out of them you needed to include in your app, but it would save a lot of pain.

I understand that this would represent some work, but it would definately add value, both for each of us individually, and because it would mean we would be more likely to have a consistant base when sharing/discussing our code.

McQ.

Re: Constants and structs.

Posted by [Neal Bridges](#) on December 03, 1998 at 12:48:22:

In Reply to: *Constants and structs.* posted by Mike Wilson on December 03, 1998 at 10:00:51:

> It seems like whenever I go to do something close to the o/s with Quartus, I
> have to find the header file with the associated structs and #defines, and
> manually build matching forth constructs.

> It would be nice if there was some way to auto-generate a set of memos (or a
> DOC file) with the converted versions of all the standard header files. You
> would probably still want to pick and choose which pieces out of them you
> needed to include in your app, but it would save a lot of pain.

> I understand that this would represent some work, but it would definately add
> value, both for each of us individually, and because it would mean we would be
> more likely to have a consistant base when sharing/discussing our code.

Mike, I'll be doing this for all enums in the headers; most of the structs
themselves are not required, and are better accessed through systrap calls. But
I'm going to automatically convert a fair number of them.

Neal

Best Pilot docs for beginner

Posted by [Cyril Elkaim](#) on December 03, 1998 at 08:20:05:

Hello piloteers,

First, I say kudo! to Neil for his superb implementation of Forth! Thanks, my
dream comed true to be able to program in my favourite language everywhere I am.

I'm an old Forth programmer but a complete newbie in Pilot's programming, so
my question is: where are the best documents to master this little beast?

Thanks again Neil,
Cyril

Re: Best Pilot docs for beginner

Posted by [Neal Bridges](#) on December 03, 1998 at 13:59:46:

In Reply to: *Best Pilot docs for beginner* posted by Cyril Elkaim on December 03, 1998
at 08:20:05:

> I'm an old Forth programmer but a complete newbie in Pilot's programming, so
> my question is: where are the best documents to master this little beast?

I'd also recommend looking at the Year and Duco sources in my File Area --
you'll find that a lot of what seems to be required in C is taken care of for
you by Quartus.

Neal

Re: Best Pilot docs for beginner

Posted by [Neal Bridges](#) on December 03, 1998 at 13:50:29:

In Reply to: *Best Pilot docs for beginner* posted by Cyril Elkaim on December 03, 1998 at 08:20:05:

> Hello piloteers,

> First, I say kudo! to Neil for his superb implementation of Forth! Thanks, my
> dream comed true to be able to program in my favourite language everywhere I
am.

> I'm an old Forth programmer but a complete newbie in Pilot's programming, so
> my question is: where are the best documents to master this little beast?

> Thanks again Neil,
> Cyril

Thank you, Cyril. I'd recommend you download 3Com's Palm SDK documentation in Adobe Acrobat (PDF) format, along with the header files, as reference material. There's a fair amount of explanatory material in the PDF files.

Neal

Re: Best Pilot docs for beginner

Posted by [Mark Beckman](#) on December 03, 1998 at 09:41:39:

In Reply to: *Best Pilot docs for beginner* posted by Cyril Elkaim on December 03, 1998 at 08:20:05:

I have not read it yet (since it has yet to be released). But the OReilly book:

Palm Programming: The Developer's Guide
By Neil Rhodes & Julie McKeehan
1st Edition December 1998 (est.)
1-56592-525-4, Order Number: 5254
464 pages (est.), \$32.95 (est.), Includes CD-ROM

looks like it might be a good one. It is however oriented to C programing not assembly or forth. The good news is that a pre-release version of it is online, for you to peruse ! Take a look at :

<http://palmpilot.3com.com/devzone/resources.html>

> Hello piloteers,

> First, I say kudo! to Neil for his superb implementation of Forth! Thanks,
my
> dream comed true to be able to program in my favourite language everywhere I
am.

> I'm an old Forth programmer but a complete newbie in Pilot's programming, so
> my question is: where are the best documents to master this little beast?

> Thanks again Neil,
> Cyril

The web is ruled by hype (programming contest?)

Posted by [Mike Wilson](#) on December 02, 1998 at 17:01:22:

I was wandering around the web today and I noticed the upswell in hype about the new universal time standard proposed by the Swatch watch company, called "internet time". Basically, there's 1000 beats per day, starting from midnight at their factory. If you want to know more, take a look at:

http://www.swatch.com/internettime/fs_main.html

There are currently apps which will tell you the "internet time" for the PC and for the Mac, but none for the Pilot (oh, for shame!). Thus, here's the chance for some intrepid Quartus programmer to go down in history as the "person who provided the internet time clock for the Pilot" (said with tongue *firmly* in cheek).

Anyway, I'm going to write such an app just for grins, and it occurred to me that since it's such a clear problem statement, and ought to be pretty darn simple to write, some of the rest of you might want to give it a try too.

Have fun,
McQ.

First result!

Posted by [Neal Bridges](#) on December 03, 1998 at 03:13:13:

In Reply to: *The web is ruled by hype (programming contest?)* posted by Mike Wilson on December 02, 1998 at 17:01:22:

> I was wandering around the web today and I noticed the upswell in hype about
> the new universal time standard proposed by the Swatch watch company, called
> "internet time". Basically, there's 1000 beats per day, starting from midnight
> at their factory. If you want to know more, take a look at:

> http://www.swatch.com/internettime/fs_main.html

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> for the Mac, but none for the Pilot (oh, for shame!). Thus, here's the chance
> for some intrepid Quartus programmer to go down in history as the "person who
> provided the internet time clock for the Pilot" (said with tongue *firmly* in

> cheek).

> Anyway, I'm going to write such an app just for grins, and it occurred to me
> that since it's such a clear problem statement, and ought to be pretty darn
> simple to write, some of the rest of you might want to give it a try too.

Exactly the sort of project I needed to test the latest changes to the
Quartus Forth system. Check out swatch.zip in the Quartus File Area.

Neal

- [File Area](#)

Re: First result!

Posted by [Mike Wilson](#) on December 03, 1998 at 09:50:40:

In Reply to: *First result!* posted by Neal Bridges on December 03, 1998 at 03:13:13:

> Exactly the sort of project I needed...

>

Excellent productivity, Neal. It doesn't look bad either. ;-)

I see you went for the "draw leds using lines" look. I'm going to go for the
"bitblt from the bitmap of digit glyphs" style, but I don't expect I'll be done
as quickly as you were.

McQ.

Re: First result!

Posted by [Neal Bridges](#) on December 03, 1998 at 12:40:21:

In Reply to: *Re: First result!* posted by Mike Wilson on December 03, 1998 at
09:50:40:

> I see you went for the "draw leds using lines" look. I'm going to go for the
> "bitblt from the bitmap of digit glyphs" style, but I don't expect I'll be
done
> as quickly as you were.

Actually those digits are bitmaps also. I considered smoothing them out, but
liked the look.

Neal

Re: First result! (bug.)

Posted by [Mike Wilson](#) on December 03, 1998 at 13:44:00:

In Reply to: *Re: First result!* posted by Neal Bridges on December 03, 1998 at 12:40:21:

One thing I noticed is that if you leave the app going, power off the Pilot, wait a while and power it up, it doesn't set the time immediately.

McQ.

Re: First result! (bug.)

Posted by [Neal Bridges](#) on December 03, 1998 at 15:19:25:

In Reply to: *Re: First result! (bug.)* posted by Mike Wilson on December 03, 1998 at 13:44:00:

> One thing I noticed is that if you leave the app going, power off the Pilot,
> wait a while and power it up, it doesn't set the time immediately.

> McQ.

It's a design feature. Rather than update the display continually, I do so at 5 second intervals.

I'll be modifying EKEY to return a keystroke result for power-on, possibly for power-off.

Neal

No bug!

Posted by [Neal Bridges](#) on December 03, 1998 at 15:30:25:

In Reply to: *Re: First result! (bug.)* posted by Neal Bridges on December 03, 1998 at 15:19:25:

> > One thing I noticed is that if you leave the app going, power off the Pilot,
> > wait a while and power it up, it doesn't set the time immediately.

> > McQ.

> It's a design feature. Rather than update the display continually, I do so at 5
> second intervals.

> I'll be modifying EKEY to return a keystroke result for power-on, possibly for
> power-off.

Actually, I spoke too soon -- Mike, are you using version 1.2? It appears to

update immediately on power-up, though I think version 1.1 didn't.

Neal

Re: No bug!

Posted by [Mike Wilson](#) on December 03, 1998 at 16:29:12:

In Reply to: *No bug!* posted by Neal Bridges on December 03, 1998 at 15:30:25:

> Actually, I spoke too soon -- Mike, are you using version 1.2? It appears to
> update immediately on power-up, though I think version 1.1 didn't.>

>

Hmmm... It claims to be version 1.2. I'll try it again.

McQ.

Re: No bug!

Posted by [Neal Bridges](#) on December 03, 1998 at 18:02:53:

In Reply to: *Re: No bug!* posted by Mike Wilson on December 03, 1998 at 16:29:12:

> > Actually, I spoke too soon -- Mike, are you using version 1.2? It appears
> to

> > update immediately on power-up, though I think version 1.1 didn't.>

> >

> Hmmm... It claims to be version 1.2. I'll try it again.

> McQ.

Ah, interesting; on my PIII it updates immediately, on my Professional it does not. Curiouser and curiouser. It would seem power-on generates a nilEvent under PalmOS3, and not under PalmOS2. I will continue to investigate.

N.

Semi-bug! Caught and killed. Swatch 1.3 now available.

Posted by [Neal Bridges](#) on December 03, 1998 at 20:14:45:

In Reply to: *Re: No bug!* posted by Neal Bridges on December 03, 1998 at 18:02:53:

> Ah, interesting; on my PIII it updates immediately, on my Professional it does
> not. Curiouser and curiouser. It would seem power-on generates a nilEvent

> under PalmOS3, and not under PalmOS2. I will continue to investigate.

Investigated and fixed. The kernel EKEY has been modified to generate a nilEvent on power-up on PalmOS2 and earlier ROMs, just as it does with PalmIII ROMs.

Download Swatch 1.3 and have a look!

Neal

Re: No bug! (they don't do it either)

Posted by [Mike Wilson](#) on December 03, 1998 at 20:14:32:

In Reply to: *Re: No bug!* posted by Neal Bridges on December 03, 1998 at 18:02:53:

> Ah, interesting; on my PIII it updates immediately, on my Professional it does

> not. Curiouser and curiouser. It would seem power-on generates a nilEvent
> under PalmOS3, and not under PalmOS2. I will continue to investigate.

>

It seems you may not be able to rely on that. I definately do **not** get the update immediately after power on on my P3. There is a random delay (i.e. 0..5 seconds) before it updates.

It occurs to me that the built in Pilot apps don't appear to update immediately either. It looks like they are just checking every second, instead of every 5 seconds.

McQ.

Re: No bug! (they don't do it either)

Posted by [Neal Bridges](#) on December 03, 1998 at 20:23:55:

In Reply to: *Re: No bug! (they don't do it either)* posted by Mike Wilson on December 03, 1998 at 20:14:32:

> It seems you may not be able to rely on that. I definately do **not** get the
> update immediately after power on on my P3. There is a random delay (i.e. 0..5
> seconds) before it updates.

> It occurs to me that the built in Pilot apps don't appear to update
immediately
> either. It looks like they are just checking every second, instead of every 5
> seconds.

Those apps may not be checking for nilEvents.

It's an oddity; my PIII at least is definitely generating the nilEvent on powerup. Perhaps it's a hack that's doing this.

At any rate, let me know if Swatch 1.3 does the trick; if it does, I'll keep the change in the kernel, and that behaviour (generation of a nilEvent at power-on) will be standard for any use of EKEY.

Neal

Re: No bug! (they don't do it either)

Posted by [Mike Wilson](#) on December 03, 1998 at 20:36:02:

In Reply to: *Re: No bug! (they don't do it either)* posted by Neal Bridges on December 03, 1998 at 20:23:55:

> It's an oddity; my PIII at least is definitely generating the nilEvent on
> powerup. Perhaps it's a hack that's doing this.

>

Confusion reigns... With version 1.3 at least, I am getting immediate time set on power up. If you are only pushing the nilEvent for p2 and lower, then I don't know why it's working now, and not before.

Oh well,
McQ.

p.s. It's currently @107, I guess we're both on right now.

Re: No bug! (they don't do it either)

Posted by [Neal Bridges](#) on December 03, 1998 at 21:05:27:

In Reply to: *Re: No bug! (they don't do it either)* posted by Mike Wilson on December 03, 1998 at 20:36:02:

> > It's an oddity; my PIII at least is definitely generating the nilEvent on
> > powerup. Perhaps it's a hack that's doing this.

> >

> Confusion reigns... With version 1.3 at least, I am getting immediate time set
> on power up. If you are only pushing the nilEvent for p2 and lower, then I
> don't know why it's working now, and not before.

> Oh well,
> McQ.

> p.s. It's currently @107, I guess we're both on right now.

The logic is such that the nilEvent is only pushed if the system doesn't do it, so it covers all possibilities.

Neal

Re: The web is ruled by hype (programming contest?)

Posted by [Tony Sanders](#) on December 02, 1998 at 19:36:13:

In Reply to: *The web is ruled by hype (programming contest?)* posted by Mike Wilson on December 02, 1998 at 17:01:22:

> Anyway, I'm going to write such an app just for grins, and it occurred to me
> that since it's such a clear problem statement, and ought to be pretty darn
> simple to write, some of the rest of you might want to give it a try too.

First problem, the palm doesn't support timezone's so you'll have to create a timezone preference in the preferences database.

The really big general problem is converting "local" time to something you can actually work with because internationally, timezone rules get *really* complex. The simplest solution will be to accept a value in hr:min:sec of the users offset from Beil, Switzerland -- but things like daylight savings time would cause many users to have to adjust this value several times during a year.

For some background on the whole mess of timezones goto:

<http://www.bsdi.com/date>

and follow the link to elsie.nci.nih.gov. They maintain a database of known timezone translation rules, 380K of data files.

(BTW: I worked at BSDI and did the date web page :)

What I don't get is why don't they just use Coordinated Universal Time? Guess I just don't get "it"

Re: The web is ruled by hype (programming contest?)

Posted by [Mike Wilson](#) on December 02, 1998 at 21:21:15:

In Reply to: *Re: The web is ruled by hype (programming contest?)* posted by Tony Sanders on December 02, 1998 at 19:36:13:

> For some background on the whole mess of timezones goto:
> <http://www.bsdi.com/date>
> and follow the link to elsie.nci.nih.gov. They maintain a database
> of known timezone translation rules, 380K of data files.
> (BTW: I worked at BSDI and did the date web page :)

>
I did a bunch of TZ work for VisualAge for Java. Believe me, I understand how thorny the problem is if you want to do it right. The point is, setting the time once (or twice per year if you live with daylight savings time) is no worse than most clocks, and ought to be good enough for this program too, given how little value it would actually have.

> What I don't get is why don't they just use Coordinated Universal Time?

> Guess I just don't get "it"

>

It's ok, it really **doesn't** make any sense -- but it sure generates hype. Look how much free PR they've gotten already.

In any case, I'm more interested in the presentation issues. I'm currently working on trying to display pieces out of a large bitmap which contains images for all the digits (and the "@" sign, of course).

Let me know if you decide to do some "smart" time support for Quartus, McQ.

Re: The web is ruled by hype (programming contest?)

Posted by [Neal Bridges](#) on December 02, 1998 at 22:09:44:

In Reply to: *Re: The web is ruled by hype (programming contest?)* posted by Mike Wilson on December 02, 1998 at 21:21:15:

> Let me know if you decide to do some "smart" time support for Quartus,

What kind of smart time support?

Neal

Re: smart time

Posted by [Tony Sanders](#) on December 03, 1998 at 12:40:54:

In Reply to: *Re: The web is ruled by hype (programming contest?)* posted by Neal Bridges on December 02, 1998 at 22:09:44:

> What kind of smart time support?

We're talking about timezone & DST support based on accurate locale information at a level of accuracy that can only be described as insanely anal retentive.

E.g., Dec 31 23:59:60 is a leap second
(there are 21 leap seconds since 1972 that have to be taken into account).

Starke County, Indiana switched from Central to Eastern time on 1991-10-27 at 02:00.

And of course, DST changes are always moving around.

So, if you know something happened in Dallas on
July 22, 1955 06:23:24, how many seconds ago was that?

Re: smart time

Posted by [Neal Bridges](#) on December 04, 1998 at 16:07:21:

In Reply to: *Re: smart time* posted by Tony Sanders on December 03, 1998 at 12:40:54:

> > What kind of smart time support?

> We're talking about timezone & DST support based on
> accurate locale information at a level of accuracy that
> can only be described as insanely anal retentive.

> E.g., Dec 31 23:59:60 is a leap second
> (there are 21 leap seconds since 1972 that have to be
> taken into account).
[etc.]

Such a library could certainly be coded. *calendar.txt* has the day
calculations down pat, so multiplying the number of days by 86400 will give you
a rough answer; adding leap seconds and timezone/DST calculations on top of that
shouldn't be exceptionally hard.

Neal

Status Update

Posted by [Neal Bridges](#) on December 01, 1998 at 16:16:22:

Hi folks. I'm working on the docs for the official release of Quartus. I've
caught and killed one subtle bug in the interpreter interface, and added a new
feature -- an 'error locator' that launches the MemoPad and highlights the last
word parsed at the time an error occurred.

Neal

Tail Recursion?

Posted by [Mike Wilson](#) on December 01, 1998 at 10:47:07:

Neal, I was wondering if Quartus did tail recursion elimination. In other words
if the last thing in a word is a call to another word, it can just branch there
instead of doing "brs otherWord, rts"(as long as no branches target the rts, of
course).

In addition to being faster, this optimization has the nice attribute that it
frequently avoids growing the return stack, which is quite useful on systems

with limited ram.

Mike Wilson

Re: Tail Recursion?

Posted by [Neal Bridges](#) on December 01, 1998 at 12:08:24:

In Reply to: *Tail Recursion?* posted by Mike Wilson on December 01, 1998 at 10:47:07:

> Neal, I was wondering if Quartus did tail recursion elimination. In other words
> if the last thing in a word is a call to another word, it can just branch there
> instead of doing "brs otherWord, rts"(as long as no branches target the rts, of
> course).

> In addition to being faster, this optimization has the nice attribute that it
> frequently avoids growing the return stack, which is quite useful on systems
> with limited ram.

> Mike Wilson

Yes. Quartus does tail-call elimination; if the last thing in a word is a call to another word, it's converted to a jump, for the reasons you specify. It's one of a number of optimizations the compiler performs.

Neal

strings

Posted by [Jim Hendricks](#) on December 01, 1998 at 08:13:29:

OK, I think I am missing the obvious but here goes, how do I allocate and initialize a string variable? I need to pass the string to a OS function so I need to obtain the address of the string and then zero terminate which is not the problem, I just can't figure out how to create the variable. Thanks.

Jim

Re: strings

Posted by [Neal Bridges](#) on December 01, 1998 at 09:41:42:

In Reply to: *strings* posted by Jim Hendricks on December 01, 1998 at 08:13:29:

> OK, I think I am missing the obvious but here goes, how do I allocate and initialize a string variable? I need to pass the string to a OS function so I need to obtain the address of the string and then zero terminate which is not the problem, I just can't figure out how to create the variable. Thanks.

Jim, have a look at the 'title' example posted a few threads back (use the search engine at the top of the discussion forum). It shows an example of passing a zero-delimited string into a PalmOS system call.

Neal

Re: strings

Posted by [Jim Hendricks](#) on December 01, 1998 at 10:03:08:

In Reply to: *Re: strings* posted by Neal Bridges on December 01, 1998 at 09:41:42:

> > OK, I think I am missing the obvious but here goes, how do I allocate and initialize a string variable? I need to pass the string to a OS function so I need to obtain the address of the string and then zero terminate which is not the problem, I just can't figure out how to create the variable. Thanks.

> Jim, have a look at the 'title' example posted a few threads back (use the search engine at the top of the discussion forum). It shows an example of passing a zero-delimited string into a PalmOS system call.

Thanks, I looked at it and it reminded me I also have to >abs the address for the OS call.

Re: strings

Posted by [Tony Sanders](#) on December 01, 1998 at 09:34:36:

In Reply to: *strings* posted by Jim Hendricks on December 01, 1998 at 08:13:29:

> how do I allocate and initialize a string variable?

If it's a single constant string I wouldn't assign it a name, just do something like:

```
: foo s" hello, world" ( caddr u ) use-the-string ;
```

If you want a null terminated string use the zstrings library

from the Quartus file download area like so:

```
needs zstrings
: foo z" hello, world" ( caddr u ) drop palms-system-call ;
```

s" and z" compile code to load the string address and count at runtime. If you wanted to create a "string variable" you could use:

```
: string-variable z" hello, world" ;
```

Re: strings

Posted by [Jim Hendricks](#) on December 01, 1998 at 09:58:08:

In Reply to: *Re: strings* posted by Tony Sanders on December 01, 1998 at 09:34:36:

```
> s" and z" compile code to load the string address and count
> at runtime. If you wanted to create a "string variable" you could use:
```

Thanks, I figured it was something easy, but just using the ANSI Docs can be kinda tough to find what your looking for since you have no idea where it might be! Thanks again.

rsrcredit (part of OnBoard tools)

Posted by [Jim Hendricks](#) on November 30, 1998 at 09:55:29:

Great news, the author of OnBoard tools has posted a non-timeout version of the tools at <http://www.individeo.net/Onboard/OnboardC/Dox/OnBoardDev1.html>

Since development for these tools have been discontinued, take the opportunity now to download since there is no mention of how long this link will be available.

On a side note, I have been trying to reach the author of OnBoard to see if there is any way for the Quartus group to carry the torch for the rsrcredit tool within the OnBoard package. The rsrcredit tool is a great complimentary tool to Quartus but does have many bugs. If we can convince the author (who has still not replied to any of my e-mails, although I hope that through my e-mail and the e-mail of others motivated the removal of the timeout) that we can continue the development of the resrcredit tool as a freeware tool, we may be able to mature the tool into a truely useful addition to Quartus. Please, don't let me be the only voice to the author of OnBoard, e-mail yourself as well just to lend support, maybe if enough people e-mail, he may actually answer someone!

Thanks, Jim

ALLOT and ALLOCATE

Posted by [Neal Bridges](#) on November 26, 1998 at 11:29:00:

I've had some further questions about the previous ALLOCATE/ALLOT discussion. I thought I'd add a few more words.

ALLOT is used during compile-time to create static buffers, allocate space for variables, etc. ALLOT adjusts the value of HERE -- HERE is a pointer into dataspace.

When Quartus starts up, it allocates only a minimal dataspace for itself in dynamic RAM; dynamic RAM is precious and I leave most of it available. The start of this dataspace is recorded in a base-pointer register.

If HERE approaches the end of that dataspace, Quartus will resize the dataspace upward by 1K. This will frequently cause the value of the base pointer to change, which is normally transparent.

Now, ALLOCATE (in memory.txt) is used to allocate arbitrarily-sized blocks of dynamic RAM, which are also referenced relative to the Quartus dataspace base-pointer.

If you use ALLOCATE to set aside a buffer during compile-time, and then Quartus resizes its dataspace (causing a base-pointer change), the ALLOCATED blocks won't be found at the right location.

Note that there is *exactly one* condition under which memory ALLOCATED can be disturbed; that's if you do an ALLOT (or other operation that moves HERE) past the end of currently-ALLOTed Quartus dataspace, causing Quartus to resize its own dataspace. There are no other conditions that can cause any problem whatsoever with ALLOCATE.

The only time this condition can arise is during compile-time; the problem was discovered while modifying docinc to use ALLOCATE -- docinc compiles new code, which can move HERE, causing Quartus dataspace resizing, causing the condition I describe.

This condition can be completely prevented. Using a balanced ALLOT after you include memory.txt will resize Quartus' dataspace once, and remove the need for Quartus to do any dataspace resizing, thus eliminating even the chance that you'll be mixing ALLOTs and ALLOCATEs during compile-time (itself a rare situation).

```
neesd memory.txt
8192 allot -8192 allot
```

The balanced ALLOT is effectively a null operation; it won't change the size of dataspace in a generated PRC. 8192 can be another value, depending on how much dataspace you wish to ALLOT during the compile-time. 8192 bytes is a fairly large globals area for most apps, however.

Neal

Re: ALLOT and ALLOCATE

Posted by [Erwin Schomburg](#) on November 29, 1998 at 06:31:45:

In Reply to: *ALLOT and ALLOCATE* posted by Neal Bridges on November 26, 1998 at 11:29:00:

For all not having seen the beginning of the discussion (as part of it was non-public), note that this balanced allot operation proposed by Neal is a compromise between having ALLOCATE use absolute addresses (non-standard) and a standard implementation of MEMORY using cell size addressing. TANSTAAFL (No free lunch).

/Erwin

```
> needd memory.txt
> 8192 allot -8192 allot
>
```

```
> The balanced ALLOT is effectively a null operation; it won't change the size
of
> dataspace in a generated PRC. 8192 can be another value, depending on how
much
> dataspace you wish to ALLOT during the compile-time. 8192 bytes is a fairly
> large globals area for most apps, however.

> Neal
```

Re: ALLOT and ALLOCATE

Posted by [Neal Bridges](#) on November 29, 1998 at 12:27:55:

In Reply to: *Re: ALLOT and ALLOCATE* posted by Erwin Schomburg on November 29, 1998 at 06:31:45:

```
> For all not having seen the beginning of the discussion (as part of it was
> non-public), note that this balanced allot operation proposed by Neal is a
> compromise between having ALLOCATE use absolute addresses (non-standard) and a
```

```
> standard implementation of MEMORY using cell size addressing. TANSTAAFL (No
free
> lunch).
```

Hi Erwin. Erwin's quite right; it's possible (and easy) to implement non-standard versions of ALLOCATE, FREE, etc. that return 32-bit (double-cell) addresses. These don't use the Quartus dataspace base-register. They are, however, non-standard.

Neal

Find the DFA?

Posted by [Mike Wilson](#) on November 26, 1998 at 10:53:24:

I built this trivial RECORD package [Neal, feel free to add it to the File Area, if you like it.] ...

```
\ RECORD
\ Mike Wilson
\ mcq@earthling.net

\ A very simple record package

\ Usage
\ RECORD Point
\   SHORT .x
\   SHORT .y
\ ENDRECORD
\
\ Point p
\ 0 p .x ! 0 p .y !

: RECORD
  CREATE HERE 0 , 0
DOES>
  CREATE @ ALLOT ;

: BYTES ( n -- )
  CREATE OVER , +
DOES> @ +
;

: BYTE 1 BYTES ;
```

```
: SHORTS ( n -- )
  CREATE OVER , 2* +
  DOES> @ +
;
: SHORT 1 SHORTS ;

: LONGS ( n -- )
  CREATE OVER , 4 * +
  DOES> @ +
;
: LONG 1 LONGS ;

: ENDRECORD
  SWAP !
;
```

... and I wanted to include the ability to answer the size of the RECORD. Now, the value I want to return is stored in the dataspace at the place where the record is defined, but I don't know the proper ANS-FORTH way to get to there.

Basically, all I want is to write a word which looks at the following word and returns the value at its dataspace address, so I can write, for example:

```
sizeOf Point
```

Any help would be appreciated,
McQ.

p.s. Just to make things a bit more exciting, I'd like it to work both in compiled code, and when interpreted.

p.p.s. Anybody got a better RECORD package to share?

Re: Find the DFA?

Posted by [Neal Bridges](#) on November 26, 1998 at 11:18:05:

In Reply to: *Find the DFA?* posted by Mike Wilson on November 26, 1998 at 10:53:24:

> I built this trivial RECORD package [Neal, feel free to add it to the File

> Area, if you like it.] ...

```
>
> \ RECORD
> \ Mike Wilson
> \ mcq@earthling.net
> \ A very simple record package
> \ Usage
> \   RECORD Point
> \     SHORT .x
> \     SHORT .y
> \   ENDRECORD
> \
> \   Point p
> \   0 p .x ! 0 p .y !
```

```
> : RECORD
>   CREATE HERE 0 , 0
>   DOES>
>     CREATE @ ALLOT ;
>
> : BYTES ( n -- )
>   CREATE OVER , +
>   DOES> @ +
> ;
> : BYTE 1 BYTES ;
>
> : SHORTS ( n -- )
>   CREATE OVER , 2* +
>   DOES> @ +
> ;
> : SHORT 1 SHORTS ;
>
> : LONGS ( n -- )
>   CREATE OVER , 4 * +
>   DOES> @ +
> ;
> : LONG 1 LONGS ;
>
> : ENDRECORD
>   SWAP !
> ;
```

> ... and I wanted to include the ability to answer the size of the RECORD. Now,
 > the value I want to return is stored in the dataspace at the place where the
 > record is defined, but I don't know the proper ANS-FORTH way to get to there.

> Basically, all I want is to write a word which looks at the following word and
 > returns the value at its dataspace address, so I can write, for example:

```
>
>   sizeOf Point
>
```

> Any help would be appreciated,
> McQ.

Mike, >BODY will do this for a CREATED word.

```
CREATE MOO 5 ,  
' MOO >BODY @ . 5 ok
```

> p.s. Just to make things a bit more exciting, I'd like it to work both in
> compiled code, and when interpreted.

> p.p.s. Anybody got a better RECORD package to share?

I built a 'struct' package a while back; it's in the PilotForth file area. It
will likely run without changes.

Neal

Re: Find the DFA? (+ discussion forum code formatting)

Posted by [Mike Wilson](#) on November 26, 1998 at 11:51:25:

In Reply to: *Re: Find the DFA?* posted by Neal Bridges on November 26, 1998 at 11:18:05:

> Mike, >BODY will do this for a CREATED word.

>
Excellent. Thanks.

Hey Neal: Any idea how to get the discussion forum software to stop removing
preceding blanks on what we post? I though .. would do it, but it
seems I failed.

McQ.

Re: Find the DFA? (+ discussion forum code formatting)

Posted by [Neal Bridges](#) on November 26, 1998 at 12:04:06:

In Reply to: *Re: Find the DFA? (+ discussion forum code formatting)* posted by Mike Wilson on November 26, 1998 at 11:51:25:

> Hey Neal: Any idea how to get the discussion forum software to stop removing
> preceding blanks on what we post? I though .. would do it, but it
> seems I failed.

Use `pre` and `/pre`, not `code` and `/code` (note I can't type the greater-than and less-than signs around those to show you).

Neal



Memory Management - Data Base

Posted by [Lou Solomon](#) on November 24, 1998 at 15:32:36:

All:

I was just reading the thread regarding memory management, and I have a question about using a 'database' instead of dynamic ram.

Since the Palm-OS is based upon a complete "RAM" based file system, is it pretty much OK to use the file system (databases) to read/write/sort, what

would normally be considered temporary (but large) arrays?

I understand the overhead of database reading/writing might be too much in some kind of looping/iterative situation, but for 400 or so writes, I would assume the database writing would be just fine, and probably be an advantage in that the list would be sorted (I guess if you set it up that way), easy deletions, etc.

Lou

Re: Memory Management - Data Base

Posted by [Neal Bridges](#) on November 24, 1998 at 16:36:20:

In Reply to: *Memory Management - Data Base* posted by Lou Solomon on November 24, 1998 at 15:32:36:

> All:

> I was just reading the thread regarding memory management, and I have a question about using a 'database' instead of dynamic ram.

> Since the Palm-OS is based upon a complete "RAM" based file system, is it pretty much OK to use the file system (databases) to read/write/sort, what would normally be considered temporary (but large) arrays?

> I understand the overhead of database reading/writing might be too much in some kind of looping/iterative situation, but for 400 or so writes, I would assume the database writing would be just fine, and probably be an advantage in that the list would be sorted (I guess if you set it up that way), easy deletions, etc.

Using the DataMgr functions to manage a list would be very slow indeed. If your list items are very large, it might be a good solution; otherwise, I recommend you manage your own list sorting/deletions, etc.

Neal

Re: Memory Management - Data Base

Posted by [Lou Solomon](#) on November 24, 1998 at 18:08:19:

In Reply to: *Re: Memory Management - Data Base* posted by Neal Bridges on November 24, 1998 at 16:36:20:

Neal:

Why? It is RAM, isn't it? Shouldn't I consider it at least as fast, as say, a PC RAM disk (circa 1984?)

How inefficient can the palm-os database services be?

Could you (or anyone) shed any light on it?

Lou

PS: I remember using dbase files for arrays back in 83, on a Osborne CP/M machine, 64K RAM, with 2 180KB disk drives.

PSS: Now there's an idea... a DBASE/XBASE port to palm os! The original dbase2 fit on a single 180K floppy, a 64K code AND data space (though it did use overlays for the code if I remember). And, in my humble opinion, was probably the best/simplest/elegant language ever made to do business oriented tasks (indexed file i/o, reports, etc). Ah... probably just nostalgia on my part (it was my '3rd' language, and did support me after college).

Re: Memory Management - Data Base

Posted by [Jim Hendricks](#) on November 25, 1998 at 08:38:27:

In Reply to: *Re: Memory Management - Data Base* posted by Lou Solomon on November 24, 1998 at 18:08:19:

> PSS: Now there's an idea... a DBASE/XBASE port to palm os! The original
> dbase2 fit on a single 180K floppy, a 64K code AND data space (though it did
> use overlays for the code if I remember). And, in my humble opinion, was
> probably the best/simplest/elegant language ever made to do business oriented
> tasks (indexed file i/o, reports, etc). Ah... probably just nostalgia on my
> part (it was my '3rd' language, and did support me after college).

Nostalgia maybe, out of the question? Perhaps not. I too am a ex xbase programmer forced by the business into the higher level OOP environments (the lastest OOP DBase and Visual FoxPro lost all of the advantages of the lightweight originals!) One of the things that is drawing me to Quartus as it relates to Pilot programming is it's ultimate simplicity (although I still think my brain is fighting the rewiring!). Reading and writing DBF files I beleive has already been done on the pilot, I will have to look at all the crap I have downloaded in the past and see if I can find it. Based on the DBF layout though I would gravitate more toward using another format maybe jfile (although I have no experience with jfile) to get the best format advantage, then look at slowly implementing the data access commands. One nice thing is that there would be very little buffering of data required since the file itself resides in RAM. This would cut down on all the buffer management build into the xbase languages! It would be interesting to mix Quartus with data management words similar to xbase.



Um... Neal. (I toasted my Pilot)

Posted by [Mike Wilson](#) on November 24, 1998 at 01:04:32:

I just had a very odd (and quite unpleasant) experience.

I had been using your 0.81 development beta to build standalone versions of my app, and I got into a state where building would sometimes leave the callback handler of the new app completely broken (i.e. hitting any hard button, or the menu silk button would cause it to fatal error) and sometime it would work fine. Note that `_just_rebuilding_` the app without changing any code, could cause either behavior.

What's worse I eventually completely crashed the Pilot and have just finished (mostly) recovering it. [Time to by Backup Buddy!]

Now, I strongly suspect that the problem is my fault, whatever it is, but at this point I'm too tired to figure it out. I'll see if I can get all the pieces together and mail them to you (tomorrow). If it is something screwy in the app builder, you need to figure it out.

McQ.

Re: Um... Neal. (I toasted my Pilot)

Posted by [Neal Bridges](#) on November 24, 1998 at 01:07:56:

In Reply to: *Um... Neal. (I toasted my Pilot)* posted by Mike Wilson on November 24, 1998 at 01:04:32:

> I just had a very odd (and quite unpleasant) experience.

> I had been using your 0.81 development beta to build standalone versions of my
> app, and I got into a state where building would sometimes leave the callback
> handler of the new app completely broken (i.e. hitting any hard button, or the
> menu silk button would cause it to fatal error) and sometime it would work
> fine. Note that `_just_rebuilding_` the app without changing any code, could
> cause either behavior.

D.8.2 is the latest development beta; it fixes a problem with `[]`. You may have encountered the problem.

> What's worse I eventually completely crashed the Pilot and have just finished
> (mostly) recovering it. [Time to by Backup Buddy!]

> Now, I strongly suspect that the problem is my fault, whatever it is, but at
> this point I'm too tired to figure it out. I'll see if I can get all the

pieces

> together and mail them to you (tomorrow). If it is something screwy in the app
> builder, you need to figure it out.

I'd like to see that code. As I say I suspect the problem was with [''], and has
been fixed; but it can't hurt to confirm.

Neal

Re: Um... Neal. (I toasted my Pilot)

Posted by [Mike Wilson](#) on November 24, 1998 at 10:06:21:

In Reply to: *Re: Um... Neal. (I toasted my Pilot)* posted by Neal Bridges on November
24, 1998 at 01:07:56:

> I'd like to see that code. As I say I suspect the problem was
> with [''], and has been fixed; but it can't hurt to confirm.

>

Indeed I was using [''], so that certainly could be it. I'll send you the code
anyway.

McQ.

Quartus file distribution

Posted by [Tony Sanders](#) on November 23, 1998 at 13:21:08:

Neal, what are your thoughts on distributing the supporting Quartus modules (toolkit, core-ext, etc)? Having to copy/paste each one into the memopad is a lot of overhead for those getting started (or in my case, starting over).

Under the theory that it's pretty easy to delete memo's but harder to get them in perhaps we could have a .prc that you hotsync and it loads them up -- or alternatively, distribute a .mpa format collection.

I would also like to suggest that we adopt some form of naming convention. Here are some ideas:

```
lib/blocks lib/core-ext lib/double
doc/inc doc/tools doc/Helper
memo/...
tools/kit tools/condthens tools/safe
asm/68k (and eventually asm/68kdis)
palm/events palm/fonts
```

This has the added benefit of making similar resources sort together in the memopad reducing the number of categories needed to hold these files if your an organizational freak like me.

I will happily do the work if you want.

Re: Quartus file distribution

Posted by [Neal Bridges](#) on November 23, 1998 at 16:01:39:

In Reply to: *Quartus file distribution* posted by Tony Sanders on November 23, 1998 at 13:21:08:

> Neal, what are your thoughts on distributing the supporting Quartus

> modules (toolkit, core-ext, etc)? Having to copy/paste each one
> into the memopad is a lot of overhead for those getting started
> (or in my case, starting over).

> Under the theory that it's pretty easy to delete memo's but harder to
> get them in perhaps we could have a .prc that you hotsync and it
> loads them up -- or alternatively, distribute a .mpa format collection.

An .mpa is not a bad idea, in fact it's the idea I'm going with for the release.

> I would also like to suggest that we adopt some form of naming convention.
> Here are some ideas:

> lib/blocks lib/core-ext lib/double
> doc/inc doc/tools doc/Helper
> memo/...
> tools/kit tools/condthens tools/safe
> asm/68k (and eventually asm/68kdis)
> palm/events palm/fonts

> This has the added benefit of making similar resources sort together
> in the memopad reducing the number of categories needed to hold
> these files if your an organizational freak like me.

Renaming them means I have to revisit all my apps. Hmm. What I'm doing now is keeping all library code in a 'Library' category, so I haven't run into an issue with the number of categories. Say, are you working on a 68kdis?

> I will happily do the work if you want.

Sadly, since I'll be making changes to the library code from time to time, I'm probably the best one to be stuck with the chore of assembling an .mpa. Fortunately I have a second PalmPilot that I'm using strictly for testing, and that gives me a good place to set up a clean Library and Apps category.

Neal

Re: Quartus file distribution

Posted by [Tony Sanders](#) on November 23, 1998 at 20:19:16:

In Reply to: *Re: Quartus file distribution* posted by Neal Bridges on November 23, 1998 at 16:01:39:

> An .mpa is not a bad idea, in fact it's the idea I'm going with for
> the release.

Excellent

> > I would also like to suggest that we adopt some form of naming convention.
> > Here are some ideas: (lib/ doc/ memo/ tools/ asm/ palm/)

...

> > This has the added benefit of making similar resources sort together
> > in the memopad reducing the number of categories needed to hold
> > these files if your an organizational freak like me.

> Renaming them means I have to revisit all my apps.

Well, you have to look at the long term benefits vs. the cost to implement it. I think it will help promote more organized code in the long run as it will cause people to think more along those lines and not tend to lump a bunch of misc functions together. I also think it will help people reuse code by making it easier to find what your looking for: "palm/events" is more descriptive than just "events".

> keeping all library code in a 'Library' category, so I haven't run
> into an issue with the number of categories.

I split everything up (catagories: Quartus/Library Quartus/Dev Quartus/Doc Quartus/Tools etc) but now I have too many catagories.

If you don't rename them, then I'll probably rename mine locally and write a wrapper around needs to translate (just call me AR).

> Say, are you working on a 68kdis?

I was about to but then the On-Board resource editor had one built-in so I started using it (though you have to re-typify the resource to get it to decode the quartus application code :) I'm not totally happy with their output though and it would be really nice to be able to type:

```
dis someword
```

Even better, if it was Quartus aware, put the forth equiv in comments, generated asm68k output, popped you into an editor, and recompiled the word when you "saved".

Which brings me back to wanting "plug-ins" for Quartus (really more like shared-libraries that are sepearate palm resources implementing a wordlist for Quartus. They could use (id) Qlib and have a word ("extension") to load them. So you might put something like this in your startup.quartus:

```
needs ids
```

```
(id) Q68k extension assembler \ from asm68k.pdb
(id) QIDE extension IDE       \ Integrated Development Environment
(id) Qrsc extension Rsrc      \ GUI Resource Builder
(id) Qdev extension PRC       \ MakePRC and friends
(id) Qhlp extension Help      \ interactive help database
(id) Qip4 extension IPV4      \ net-enable ourself
(id) Qinx extension Qinx      \ replaces PalmOS ;)
(id) Qweb extension Web       \ web development support tools
(id) QGML extension SGML      \ SGML parser
```

```
also SGML parse HTML-DDT-4.0 previous
```

```
URL: http://www.interlog.com/~nbridges/ document nbridges
```

nbridges browse \ ok, so I got carried away

That way you can "instantly" load these more complex things without the hit of parsing a lot of forth (an initialization vector would be executed after loading so it could do whatever setup it needed to integrate itself with Quartus). You also enable binary-distribution of commercial development tools.

Anyway, if you want to conquer the world those are the kinds of things I think we need to be working towards.

> > I will happily do the work if you want.

I meant that I would do the rename for everything in the file area as a one-shot deal.

> Fortunately I have a second PalmPilot that I'm using strictly for testing, and
> that gives me a good place to set up a clean Library and Apps category.

I use the Emulator a lot. I sure wish it would HotSync at 56k though. The Emulator running on my PII/400Mhz seems to be a good bit faster than my actual PIII.

Memory managment and input source

Posted by [Jim Hendricks](#) on November 23, 1998 at 10:11:23:

I am a little confused about the memory management of Quartus and/or Forth. It seems all the tutorials you can look at only discuss the data stack and the return stack. It seems through referencing the various words that there is a code heap and a data heap. When a word is defined, it seems it's added to a dictionary, is this in the code heap? When a create is encountered, this is added to the dictionary but there is also the data element assigned to it that I would assume is in the data heap. When using Allot where is the memory reserved, and where does the handle for this allocation get retrieved from? I see there are also various words for getting pointers like HERE. When allocating, do I then use HERE to get a pointer followed by Allot to actually reserve the space? I see also that Quartus provides a CSHERE to retrieve a pointer into Code space, what uses would a pointer into code space provide? Both HERE and CSHERE I assume are providing a pointer to the next available chunk of memory within the associated heap? Finally, I was experimenting with buffering some input data from a Pilot function, at design time I don't know what the size of the data will be but I do know at runtime. I attempted to use a word with CREATE CELLS ALLOT ("CCC" n --) which works fine when the word is called from the

interpreter but if I call 5 MYWORD VARNAME from within another word def (which I would be doing at runtime since the 5 would be dynamic) I get a VARNAME doesn't exist. I realize this is due to the compiler symantics where varname is assumed to be a word on the dictionary. I also realize that CREATE looks to the input buffer for the name for the word it will create. How can I code into a word a string that can be used as the name of a word I will create, as well as divert CREATE to pick up this string instead of something coming from the interpreters command line? I guess also how would I then refer within other words to this dynamic created variable? I imagine there must be another way, but since I have only done variable allocation using VARIABLE or a CREATE of my own from an interpreted line, I am ignorant of how to do this from within a word def. I realize I am asking alot but any help in understanding all this would be appreciated, it would save me lots of time crashing my pilot trying to learn on my own how to properly do dynamic allocations.

Thanks, Jim.

Re: Memory managment and input source

Posted by [Neal Bridges](#) on November 23, 1998 at 15:02:52:

In Reply to: *Memory managment and input source* posted by Jim Hendricks on November 23, 1998 at 10:11:23:

> I am a little confused about the memory management of Quartus and/or
> Forth. It seems all the tutorials you can look at only discuss the
> data stack and the return stack. It seems through referencing the
> various words that there is a code heap and a data heap. When a word
> is defined, it seems it's added to a dictionary, is this in the code
> heap?

The two memory areas are called 'codespace' and 'dataspace'.

> When a create is encountered, this is added to the dictionary
> but there is also the data element assigned to it that I would assume
> is in the data heap.

That's right.

> When using Allot where is the memory reserved,
> and where does the handle for this allocation get retrieved from?

When using ALLOT, space is reserved at HERE, and HERE is incremented

accordingly.

```
CREATE foo 5 ,
```

This creates a header 'foo' in codespace, along with a bit of code that returns the value of HERE at the time 'foo' was defined.

5 , writes the value 5 to HERE, and performs a 1 CELLS ALLOT (which increments HERE by 1 cell -- two bytes).

> I

> see there are also various words for getting pointers like HERE. When allocating, do I then use HERE to get a pointer followed by Allot to actually reserve the space?

That's correct.

> I see also that Quartus provides a CSHERE
> to retrieve a pointer into Code space, what uses would a pointer into code space provide?

CSHERE is generally of no use during development. The assembler asm68k makes use of it.

> Both HERE and CSHERE I assume are providing a
> pointer to the next available chunk of memory within the associated
> heap? Finally, I was experimenting with buffering some input data from
> a Pilot function, at design time I don't know what the size of the
> data will be but I do know at runtime.

In most cases, I would ALLOT a buffer large enough to handle the maximum. That way I'm certain that I won't have difficulty allocating the space at run-time.

> [how to dynamically allocate RAM]

I see what you're getting at, but it's the wrong end of the telescope. Here's the scoop on dynamically allocating data space:

If you want to dynamically allocate space, use *memory.txt* from the Quartus File Area. There is one thing to watch out for, however, due to certain implementation details I haven't yet documented...

Use *memory.txt* as follows:

```
needs memory  
8192 allot -8192 allot
```

```
...other code using ALLOCATE FREE RESIZE SIZE...
```

The 8192 in the snippet above could be another value; it depends on how much dataspace you expect to use. If you exceed that amount, dataspace will be resized, which can potentially move the dataspace base pointer and lead to problems with the memory set aside by ALLOCATE. Beyond this one caveat, though, ALLOCATE FREE and RESIZE are the words you need to do dynamic memory allocation.

Neal

Re: Memory managment and input source

Posted by [Jim Hendricks](#) on November 23, 1998 at 17:29:02:

In Reply to: *Re: Memory managment and input source* posted by Neal Bridges on November 23, 1998 at 15:02:52:

Thanks for clearing up my facts about memory!

> If you want to dynamically allocate space, use *memory.txt*
> from the Quartus File Area. There is one thing to watch out for,
> however, due to certain implementation details I haven't yet
> documented...

> Use *memory.txt* as follows:

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> how much dataspace you expect to use. If you exceed that amount,
> dataspace will be resized, which can potentially move the dataspace
> base pointer and lead to problems with the memory set aside by
> ALLOCATE. Beyond this one caveat, though, ALLOCATE FREE and RESIZE
> are the words you need to do dynamic memory allocation.

I would assume then that *memory.txt* allocates memory from the dataspace?

I was also messing around with someone elses code I obtained from targeta and the general idea was to reserve 1 cell within the word created by CREATE, then using DOES> to manipulate that 1 cell to point to data alloc'd using HERE and ALLOT. I know this breaks the rules that some have established about keeping 1 word = 1 function but it did seem like a neat idea where using 1 word you could dynamically manage buffers yourself. What's your thoughts on that?

Jim

Re: Memory managment and input source

Posted by [Neal Bridges](#) on November 24, 1998 at 01:19:25:

In Reply to: *Re: Memory managment and input source* posted by Jim Hendricks on November 23, 1998 at 17:29:02:

> I would assume then that memory.txt allocates memory from the dataspace?

ALLOCATE (in memory.txt) allocates memory from dynamic RAM, not from dataspace. However, in terms of the underlying implementation, both ALLOCATED blocks and the standard dataspace both share the same base pointer; this is only relevant in terms of the memory shuffling that can occur when dataspace is resized-- hence my trick of pre-ALLOTing and then de-ALLOTing the space you'll be needing; that way you avoid any future resizing of the dataspace, and there's no problem.

> I was also messing around with someone elses code I obtained from targeta and the general idea was to reserve 1 cell within the word created by CREATE, then using DOES> to manipulate that 1 cell to point to data alloc'd using HERE and ALLOT. I know this breaks the rules that some have established about keeping 1 word = 1 function but it did seem like a neat idea where using 1 word you could dynamically manage buffers yourself. What's your thoughts on that?

I'm not entirely clear on the idea you outline. CREATED words each already point at an area in dataspace; that's their function.

```
CREATE foo 10 CELLS ALLOT
foo . 500 ok
HERE . 520 ok
```

'foo' now points at a 10-cell area in dataspace. HERE has been advanced past that point.

It's important not to use ALLOT at all during runtime, as the target stand-alone PRC won't resize dataspace.

Neal

Re: Memory managment and input source

Posted by [Jim Hendricks](#) on November 24, 1998 at 08:58:16:

In Reply to: *Re: Memory managment and input source* posted by Neal Bridges on November 24, 1998 at 01:19:25:

> > I was also messing around with someone elses code I obtained from targeta and
> the general idea was to reserve 1 cell within the word created by CREATE, then
> using DOES> to manipulate that 1 cell to point to data alloc'd using HERE and
> ALLOT. I know this breaks the rules that some have established about keeping 1
> word = 1 function but it did seem like a neat idea where using 1 word you could
> dynamically manage buffers yourself. What's your thoughts on that?

> I'm not entirely clear on the idea you outline. CREATED words each already
> point at an area in dataspace; that's their function.

>

```
> CREATE foo 10 CELLS ALLOT  
> foo . 500 ok  
> HERE . 520 ok  
>
```

> 'foo' now points at a 10-cell area in dataspace. HERE has been advanced past
> that point.

> It's important not to use ALLOT at all during runtime, as the target stand-alone
> PRC won't resize dataspace.

Here is the code I was refering to although it is much more complex then the idea's I was planning on ripping out of it. As you can see, the author reserves 2 cells, 1 holds the size, the other holds a pointer to memory that will be allocated at runtime. As you can see, HERE 20 ALLOT -> ADDR JACK is how he is initializing the 2nd cell pointer, his example does the allocation from the interpreter, my example would do this within another worddef. Now, about using ALLOT during runtime, Wouldn't that break your example for using memory.txt by allot then de-allot to lockin the dataspace size? Wouldn't that also then stop all variable defs? I think I may be confused about what we are calling runtime. My understanding (of course it could be way off base) is that when at the prompt you are in interpreter mode, when a worddef is encountered you go into compiler mode until the end of the def (I know there are other ways into the compile mode). When actually refering to a worddef in the dictionary you are in runtime mode. My guess would be that VARIABLE etc that are stated outside of a worddef get reserved space within the PRC for standalone. But it

seems based on what you are saying, if I were to use this sample code within Quartus, and do the HERE 20 ALLOT -> ADDR JACK within a word def, then the ALLOT would not work when compiled into a PRC. When working with memory.txt, is this also static at runtime within a standalone PRC? Just to let you know, I know you don't like re-inventing the wheel, but I thought it would be a good exercise just to start looking at what it would take to duplicate the efforts of OnBoard ResEdit. This is what got me into the whole situation of dynamic memory allocation. The first step of just getting the database names requires that I build a buffer to receive all the names individually, trimming trailing garbage and being left with a string array that I can pass to a list control. Since at design time I don't know how many databases I have, I didn't think it fair to set an arbitrary buffer size for the databases since I don't know what would be a reasonable size, I would rather dynamically ALLOT the buffer once I know how many databases I am dealing with. I know I am getting in over my head, but I learn best by drowning in a new env. and before I know it I know how to swim! Thanks for the time, Jim.

```
\ AUTHOR:    Jack W Brown
\ Date:      June 8, 1988
\ Subject:   Dynamic arrays.
```

```
( DYNAMIC ARRAYS: Allocate both size and storage at run time!! )
```

```
VARIABLE DFLAG    DFLAG OFF
VARIABLE SFLAG    SFLAG OFF
```

```
: -> SFLAG ON ;
: ADDR 1 DFLAG ! ;
: SIZE -1 DFLAG ! ;
```

```
: DARRAY ( -- -- )
  CREATE 0 , ( size defaults to 0 )
          0 , ( storage address defaults to 0 )
DOES> DFLAG @ ?DUP DFLAG OFF
      IF ( non data operation )
        SFLAG @ SFLAG OFF
        IF ( storing size or address )
          1+ IF 2+ ! ( current storage address )
              ELSE ! ( current array size )
              THEN
        ELSE ( fetching size or address )
          1+ IF 2+ @ ( save array size )
              ELSE @ ( save array storage address )
              THEN
        THEN
      ELSE ( data fetch or store )
        DUP @ 1 < ABORT" Undefined or invalid size."
        DUP 2+ @ 0= ABORT" Undefined storage space."
        2DUP @ > ABORT" Index out of range."
        SFLAG @ SFLAG OFF
        IF ( data store operation )
          ( stack: num index pfa )
          SWAP 2+ 2* + !
        ELSE ( data fetch )
          ( stack: index pfa )
          SWAP 2+ 2* + @
        THEN
```

THEN ;

\ Sample usage:

```
DARRAY JACK ( Make one of the suckers )
SIZE JACK . ( 0 OK )
ADDR JACK . ( 0 OK )
\ Set size of JACK to 10
10 -> SIZE JACK
\ Make some space
HERE 20 ALLOT -> ADDR JACK

SIZE JACK . ( 10 OK )
ADDR JACK . ( 33102 or value of HERE OK )
1234 1 -> JACK ( OK )
1 JACK . ( 1234 OK
)
4567 2 -> JACK ( OK )
2 JACK . ( 4567 OK )

\ Now how would you like to make me a version of DARRAY that will
\ work with external ( to forth's code segment ) memory?
```

Re: Memory managment and input source

Posted by [Neal Bridges](#) on November 24, 1998 at 09:44:22:

In Reply to: *Re: Memory managment and input source* posted by Jim Hendricks on November 24, 1998 at 08:58:16:

It's actually fairly straightforward. Dataspace (accessed by ALLOT) holds globals: strings, variables, and whatever other constructs you wish to create statically at compile-time. If you want to allocate dynamic RAM at run-time (rather than compile-time), use ALLOCATE (from memory.txt), not ALLOT.

One caveat about memory.txt: in order to ensure that any ALLOCATEs you do during compile-time aren't dislocated as a side-effect of the dataspace resizing that can occur when using ALLOT, you must do this...

needs memory.txt

8192 allot -8192 allot

...other code using ALLOCATE and FREE,
etc....

...where 8192 could be another value, depending on how much dataspace (globals space) you feel you'll be needing for the current app. These two ALLOTs, one positive, one negative, have a net cancelling effect; they cause dataspace to be pre-allocated to at least 8192 available bytes. What that means, in Quartus, is that dataspace won't be resized until HERE passes 8192 bytes, thus ensuring any memory areas ALLOCATED won't be disturbed by a dataspace resizing.

Neal

Re: Memory managment and input source

Posted by [Jim Hendricks](#) on November 24, 1998 at 09:54:46:

In Reply to: *Re: Memory managment and input source* posted by Neal Bridges on November 24, 1998 at 09:44:22:

So then you are saying the example code I listed would not work in a standalone PRC.

8192 allot -8192 allot, since this has a canceling effect, this would not actually reserve space in the PRC? As well, since I don't know in the case of obtaining a list of the DB's installed on the Pilot the actual space I will need, can I still use memory.txt without the ALLOT reserve? If I use memory.txt to ALLOCATE, do my manipulations, then DEALLOCATE (or whatever the release word is), so long as there are no ALLOT's in my manipulations, would I still be hit with memory reorg in the dataspace? I looked at memory.txt and I see that you are using the OS to obtain memory, why then can't the memory provided from memory.txt be independent from the dataspace so that the 2 don't war over management?

Re: Memory managment and input source

Posted by [Neal Bridges](#) on November 24, 1998 at 10:25:30:

In Reply to: *Re: Memory managment and input source* posted by Jim Hendricks on November 24, 1998 at 09:54:46:

> So then you are saying the example code I listed would not work in a standalone PRC.

That's right.

> 8192 allot -8192 allot, since this has a canceling effect, this would not actually reserve space in the PRC?

No. The extracted dataspace in a stand-alone PRC goes only as high as `HERE`; the balanced `ALLOT`s leave `HERE` at the same point.

> As well, since I don't know in the case of obtaining a list of the DB's installed on the Pilot the actual space I will need, can I still use `memory.txt` without the `ALLOT` reserve? If I use `memory.txt` to `ALLOCATE`, do my manipulations, then `DEALLOCATE` (or whatever the release word is), so long as there are no `ALLOT`'s in my manipulations, would I still be hit with `memory reorg` in the dataspace?

The word is `FREE`. You could do this, but there's no reason to. The balanced `ALLOT`s as shown above are harmless and will prevent any issues as relate to dataspace resizing.

> I looked at `memory.txt` and I see that you are using the OS to obtain memory, why then can't the memory provided from `memory.txt` be independent from the dataspace so that the 2 don't war over management?

They don't 'war over management'. The only issue that can arise is due to dataspace resizing during compile-time; the balanced `ALLOT`s above prevent it from occurring.

Quartus is a 16-bit Forth. This means all memory addresses are also 16-bits wide, and are accessed (via `!` and `@` etc.) relative to a base pointer. `ALLOCATE` reserves memory that can be accessed just as readily as dataspace (via `!` and `@` etc.), and as such must share the same base pointer.

Neal.

Re: Memory managment and input source

Posted by [Jim Hendricks](#) on November 24, 1998 at 11:08:59:

In Reply to: *Re: Memory managment and input source* posted by Neal Bridges on November 24, 1998 at 10:25:30:

> The word is FREE. You could do this, but there's no reason to. The balanced
> ALLOTs as shown above are harmless and will prevent any issues as relate to
> dataspace resizing.

The reason I am concerned about the ALLOTs is if I try to assume the worst case scenario and say you have 400 databases on your pilot. Since the names from the databases can all be 32 chars, I would to be safe allocate 400*32 chars which is 12.8 k. Now 400 db's is probably high but since I can't really predict what each pilot may have on it, I just make the assumption of 400. This means my canceling ALLOT's would use 12.8k. Later in the code when I actually ALLOCATE, I will allocate based on the actual number of DB's that I know are on your pilot, let's just say you have 50 db's which is 1.6k. Now for free mem you have say 8k. The real allocation will work because that space is available but the ALLOT will fail because I am trying to guess at worst case. You mention that the problem is with the dataspace pointer moveing when the dataspace is expanded, wouldn't this only be a problem when you go over 64k?

Since Quartus is a 16bit forth, this then means that 64k is the max dataspace ever available correct?

Jim

Re: Memory managment and input source

Posted by [Neal Bridges](#) on November 24, 1998 at 13:16:45:

In Reply to: *Re: Memory managment and input source* posted by Jim Hendricks on

November 24, 1998 at 11:08:59:

> The reason I am concerned about the ALLOTs is if I try to assume the worst case scenario and say you have 400 databases on your pilot. Since the names from the databases can all be 32 chars, I would to be safe allocate 400*32 chars which is 12.8 k. Now 400 db's is probably high but since I can't really predict what each pilot may have on it, I just make the assumption of 400. This means my canceling ALLOT's would use 12.8k. Later in the code when I actually ALLOCATE, I will allocate based on the actual number of DB's that I know are on your pilot, let's just say you have 50 db's which is 1.6k. Now for free mem you have say 8k. The real allocation will work because that space is available but the ALLOT will fail because I am trying to guess at worst case. You mention that the problem is with the dataspace pointer moveing when the dataspace is expanded, wouldn't this only be a problem when you go over 64k?

The base pointer can move at any time when dataspace is resized. Don't use ALLOT to store your database names; use ALLOCATE. But in order to ensure you won't have any problems at compile-time with ALLOCATE, be sure and do a pre-sizing of dataspace first, with the method I gave earlier.

> Since Quartus is a 16bit forth, this then means that 64k is the max dataspace ever available correct?

This is an issue that pertains to any application for the Palm, in any language. 64K is a limit not because Quartus is 16-bit, but because there is only that much dynamic RAM available on any Palm unit -- and earlier versions have much less RAM. If you want to be compatible with older devices, you have to assume you have less than 14K total available dynamic RAM.

In fact dataspace itself (the area tracked by HERE) can only be 32K in size (on machines with at least that much dynamic RAM) -- this is a limitation C programs have also. It's a result of using a 16-bit offset from a base-address to access globals. With ALLOCATE, you can make use of any additional dynamic RAM on Palm devices that have it, up to 64K in total. Should a device appear with more than 64K dynamic RAM available, you'll be able to use that too, via PalmOS Mem* systraps which return 32-bit absolute addresses, and using Quartus' @a and !a, etc.

An alternative when you need a large amount of dynamic RAM -- and a necessity on machines with only 14K dynamic RAM available in total -- is to create a temporary database in the storage heap, accessed with DmWrite.

Neal

Re: Memory managment and input source

Posted by [Tony Sanders](#) on November 24, 1998 at 15:57:03:

In Reply to: *Re: Memory managment and input source* posted by Neal Bridges on November 24, 1998 at 13:16:45:

> This is an issue that pertains to any application for the Palm, in any
> language. 64K is a limit not because Quartus is 16-bit, but because there is
> only that much dynamic RAM available on any Palm unit -- and earlier versions
> have much less RAM. If you want to be compatible with older devices, you have
> to assume you have less than 14K total available dynamic RAM.

Ref3.pdf on 3COM's website (HREF="<http://www.palm.com/devzone/docs/Ref3.zip>">Part
III: Memory and Comm
Management)

has a lot of info on this aspect of palm programming.

> An alternative when you need a large amount of dynamic RAM -- and a necessity
on
> machines with only 14K dynamic RAM available in total -- is to create a
> temporary database in the storage heap, accessed with DmWrite.

Yes, Databases are your window into the vast storage resources
of the Palm computing platform :)

If you need a buffer larger than about 4K then you
need probably to redesign your application.

tinylocals.txt available in the File Area

Posted by [Neal Bridges](#) on November 23, 1998 at 00:09:50:

tinylocals.txt is a module providing named locals L0 through L7.
It's not a Standard implementation of locals, in that they can't be renamed, but

nevertheless it should be of use to those of you wanting locals support. use-locals must appear in a definition before these locals are referenced -- it nests the previous values, which are restored upon leaving the definition. There's test code in the module that illustrates this.

The implementation method is based on a clever idea of Bill Volk's.

Neal

- [File Area](#)

Simple pilot question.

Posted by [mike wilson](#) on November 22, 1998 at 21:13:28:

I want to set the title of the active form... (all the *real* Pilot programmers go "*sigh*") ... and so I tried this:

```
{address of new title} >abs FrmGetActiveForm FrmSetTitle
```

Which appears to work, but does not grow the size of the "tab" (i.e. the rounded rectangular area around the title) when the new title is longer than the old one. Am I supposed to do hide/set/show instead? The programmers ref seems to indicate that just setting it would work.

Mike Wilson

p.s. Anybody got a code fragment to do this right?

Re: Simple pilot question.

Posted by [Neal Bridges](#) on November 22, 1998 at 23:43:17:

In Reply to: *Simple pilot question.* posted by mike wilson on November 22, 1998 at 21:13:28:

> p.s. Anybody got a code fragment to do this right?

Here's the code I tried (it works):

```
\ title
needs zstrings

: title ( &title. -- )
  FrmGetActiveForm FrmSetTitle ;

: mytitle z" MyTitle" ;

: go
  1002 showform cr cr
  mytitle drop >abs title ;
```

Neal

Re: Simple pilot question.

Posted by [Neal Bridges](#) on November 22, 1998 at 21:35:16:

In Reply to: *Simple pilot question.* posted by mike wilson on November 22, 1998 at 21:13:28:

> I want to set the title of the active form... (all the *real* Pilot
programmers
> go "*sigh*") ... and so I tried this:

```
> {address of new title} >abs FrmGetActiveForm FrmSetTitle  
> Which appears to work, but does not grow the size of the "tab" (i.e. the  
> rounded rectangular area around the title) when the new title is longer than  
> the old one. Am I supposed to do hide/set/show instead? The programmers ref  
> seems to indicate that just setting it would work.  
> Mike Wilson  
> p.s. Anybody got a code fragment to do this right?
```

Mike, this works fine for me under PalmOS 2 and 3 -- the tab expands appropriately. Are you running PalmOS 1? I haven't tested that yet.

Neal

Re: Simple pilot question.

Posted by [Mike Wilson](#) on November 23, 1998 at 10:50:13:

In Reply to: *Re: Simple pilot question.* posted by Neal Bridges on November 22, 1998 at 21:35:16:

```
> Mike, this works fine for me under PalmOS 2 and 3 -- the tab expands  
> appropriately. Are you running PalmOS 1? I haven't tested that yet.  
>
```

Hmm... I've got a P3, so that's not the problem. I saw the code fragment in your other followup, and it certainly **looks** like what I'm doing. If I get a chance tonight, I'll try to pull out just the title setting chunk of my app and post it.

Just so you know, I'm trying to do a "Memo 1 of 237" style title. I can see that the size is set properly the **first** time I set it, but when I get to "Memo 10 of 237" it doesn't resize the tab. I wonder if it could be related to the fact that I'm passing in the same buffer each time...

It seems that more experimenting is required [And yes, that **is** why FORTH wins. Imagine doing that when you've got to do a C-compile and a download before each attempt (ugh!)].

McQ.

Re: Simple pilot question.

Posted by [Neal Bridges](#) on November 23, 1998 at 15:46:14:

In Reply to: *Re: Simple pilot question.* posted by Mike Wilson on November 23, 1998 at 10:50:13:

...
> Just so you know, I'm trying to do a "Memo 1 of 237" style title. I can see
> that the size is set properly the **first** time I set it, but when I get to
> "Memo 10 of 237" it doesn't resize the tab. I wonder if it could be related to
> the fact that I'm passing in the same buffer each time...

Tried it with the same buffer each time; you're right, it doesn't work properly.
Here's what I found works--

```
\ title
needs zstrings

: (title) ( title-addr -- )
  >abs FrmGetActiveForm FrmSetTitle ;

create nullstring 0 c,

: title ( title-addr -- )
  nullstring (title)
  (title) ;

: shortstring z" Title" ;
: longstring z" Long Title" ;

: go
  1002 showform \ titled form
  shortstring drop title
  longstring drop title
;
```

'go' writes a short title, then a longer title, and updates the border around the title properly. It seems to be necessary to reset it to a null string from a different address, before changing it.

Neal

Re: Simple pilot question.

Posted by [Mike Wilson](#) on November 23, 1998 at 21:12:55:

In Reply to: *Re: Simple pilot question.* posted by Neal Bridges on November 23, 1998 at 15:46:14:

> It seems to be necessary to reset it to a null string from
> a different address, before changing it.

>
Excellent! I'll try it.

Much thanks,
McQ.

GoType! keyboard

Posted by [Lou Solomon](#) on November 22, 1998 at 20:01:59:

FYI:

got the gotype keyboard (from landware.com). Works great with everything so far. For most people, keyboard size is pretty ok.... i'm able to touchtype at 40-50 wpm it seems!

It also has 6 buttons which can move directly to an app... This is great for Quartus - memo pad switching... (buttons allow actually 24 apps to load with chording buttons with shift, etc)

It's a little heavier than a Palm Professional, but nothing to bad... Highly recommended if you are doing lots of typing on the PP.

Lou

Re: GoType! keyboard

Posted by [Mike Wilson](#) on November 22, 1998 at 20:27:16:

In Reply to: *GoType! keyboard* posted by Lou Solomon on November 22, 1998 at 20:01:59:

> got the gotype keyboard (from landware.com)

>

I use the PiloKey adapter (also from landware, although I don't think they support it any more) which lets you use a Newton keyboard with your Pilot. It's great. I'm not tempted to go find a pc, so I can enter that darn arcane FORTH syntax. ;-)

McQ.

Anyone with FlashBuilder experience?

Posted by [Neal Bridges](#) on November 22, 1998 at 16:17:58:

Is anyone running Quartus from flash RAM? I'm of the opinion that it'll work, but I'd like some anecdotal evidence.

Neal

Re: Anyone with FlashBuilder experience?

Posted by [Lou Solomon](#) on November 22, 1998 at 19:57:19:

In Reply to: *Anyone with FlashBuilder experience?* posted by Neal Bridges on November 22, 1998 at 16:17:58:

Neal:

I have Quartus 081b in Flash-rom. My programs (ok, fragments), don't really push Quartus too far, but it works perfectly running from flash. I'd be willing to do any testing you'd like.

Note: I'm using the 2Mb upgrade kit, not a 'real' p3.

Lou

Quartus 0.8.2B now available!

Posted by [Neal Bridges](#) on November 22, 1998 at 14:05:05:

I've fixed a couple of bugs (one in [''], one in the window-bounds handling).
Quartus 0.8.2B is now available in the Quartus File Area.

- [File Area](#)
-

Source to 'Duco' now available.

Posted by [Neal Bridges](#) on November 22, 1998 at 13:02:24:

The complete source to 'Duco', the Roman numeral calculator, is now available in
the Quartus File Area.

Have a look!

Neal

- [File Area](#)
-

Duco Source Discussion

Posted by [Tony Sanders](#) on November 23, 1998 at 15:27:50:

In Reply to: *Source to 'Duco' now available.* posted by Neal Bridges on November 22, 1998 at 13:02:24:

First, let me say your a sick puppy for making a roman numeral calculator :)

Bugs: I grabbed the latest files but it seems you changed "menuitem" to "itemid" (called from simple-handler) but the change didn't make it into Events. Could be a problem on my end though, I haven't looked at it more closely yet.

Here are a few project ideas for people to think about as exercises:

- 1) allow grafitti input
- 2) extend the range using double numbers
(need your own bitmap font to fit larger numbers on the display)
- 3) redesign the user interface to allow faster input of large numbers
- 4) interpreter-only: allow user defined functions in forth

BTW: that last comment brings up a question for those of us developing stand-alone applications. One project on my list is a serious text-editor for the palm, but I want it to be user-extensible in forth so I need pretty much everything except the outer-interpreter. One thought I had was to bind the resources I need right into the Quartus image and then modify the startup code (via startvector?) to start my application (which would could be contained in a resource). Basically, I would like to start a thread on embedded Quartus for our applications.

As for comments on the Duco sources:

I would really like to work on a data-driven event handler. Something along the lines of (I know this syntax won't exactly work, but this is just to give you some idea of what I'm talking about):

```
create HandlerList 8 cells allot \ make this dynamic
variable HandlerP  HandlerList HandlerP !
: EndHandler ( ^handler -- ) HandlerP !  HandlerP @ cell+ HandlerP ! ;
\ data driven event handler
: data-handler ( handlerData -- ) HandlerList deal-with-it ;
: (handle-event) ( &event. ^data -- ) ... ;
: EventHandler ( form type-of-event "name" -- ^handler )
  create here , , does> (handle-event) ;
: => swap , , ' , ;
...
```

```
DucoForm menuEvent EventHandler
  AboutMenuItem AboutBox => FrmAlert
  HelpMenuItem  HelpString => FrmHelp
EndHandler \ put it on the list for data-handler to call
```

...

```
['] data-handler eventhandler !
```

Anyway, the above syntax is just off the top of my head, I'm sure we can come up with something better. I think we'll need some more complex examples of event handlers before we can abstract out all the right info. But basically, we should be able to tie unique events (form+event+id) to the code that implements the action.

Implementing Duco's do-event in an eventhandler might be a good start.

Finally, we should consider if we need to tie this to a real state-machine or make the user implement state-machines as needed (hopefully the latter, even if we provide words to aid the user it would be nice to have the two be separate and not integrated).

Re: Duco Source Discussion

Posted by [Neal Bridges](#) on November 23, 1998 at 16:15:15:

In Reply to: *Duco Source Discussion* posted by Tony Sanders on November 23, 1998 at 15:27:50:

> First, let me say your a sick puppy for making a roman numeral calculator :)

Guilty as charged.

> Bugs: I grabbed the latest files but it seems you changed
> "menuitem" to "itemid" (called from simple-handler) but the change
> didn't make it into Events. Could be a problem on my end though,
> I haven't looked at it more closely yet.

I'll check that out.

> Here are a few project ideas for people to think about as exercises:

> 1) allow grafitti input

Thought about this, figured it was a waste of time.

> 2) extend the range using double numbers
> (need your own bitmap font to fit larger numbers on the display)

The other problem is that it becomes difficult to detect overflow.

> 3) redesign the user interface to allow faster input of large numbers

Again, figured for a novelty program it was a waste of time; the thoughts I had along those lines were for a "xM" button, but figured it might be misconstrued as "XM".

> 4) interpreter-only: allow user defined functions in forth

> BTW: that last comment brings up a question for those of us developing
> stand-alone applications. One project on my list is a serious text-editor
> for the palm, but I want it to be user-extensible in forth so I need
> pretty much everything except the outer-interpreter. One thought I had
> was to bind the resources I need right into the Quartus image and then
> modify the startup code (via startvector?) to start my application (which
> would could be contained in a resource). Basically, I would like to start
> a thread on embedded Quartus for our applications.

I have problems with this. Quartus is explicitly designed to produce headerless functions in the stand-alone PRCs; no dictionary search code can be extracted into a stand-alone program. StartVector will shortly be going away, as it is made redundant with the stand-alone PRC generation facilities. Beyond this, creating new definitions at run-time is a dicey issue indeed. I'd much rather see your editor contain its own mini-Forth interpreter/compiler; I'd be happy if it used the provided versions of whatever words from the kernel you'd like to make available, but not so happy if you try to provide the entirety of Quartus within your application. It comes down to my not being able to support you if you bolt Quartus on to the underbelly of your app; things become extremely complicated in that direction.

> As for comments on the Duco sources:

[data driven event handler snipped]

> Anyway, the above syntax is just off the top of my head, I'm sure we can
> come up with something better. I think we'll need some more complex
> examples of event handlers before we can abstract out all the right info.
> But basically, we should be able to tie unique events (form+event+id) to
> the code that implements the action.

> Implementing Duco's do-event in an eventhandler might be a good start.

I'm up for anything easily understood that makes the process simpler. The 'cond/thens' statement in Duco isn't terribly ugly, but certainly it could be made cleaner.

> Finally, we should consider if we need to tie this to a real state-machine
> or make the user implement state-machines as needed (hopefully the latter,
> even if we provide words to aid the user it would be nice to have the two
> be separate and not integrated).

I'd go with the latter idea also. Julian Noble did some work on a finite-state-machine wordset for Forth; that might be a good place to start.

Neal

Re: Duco Source Discussion

Posted by [Tony Sanders](#) on November 24, 1998 at 15:24:13:

In Reply to: *Re: Duco Source Discussion* posted by Neal Bridges on November 23, 1998 at 16:15:15:

> Again, figured for a novelty program it was a waste of time

Yeap, just exercises for people to think about how to do them since some people here (myself included) are still learning to program in the Palm environment.

> were for a "xM" button, but figured it might be misconstrued as "XM".

Label it BAR (or with an actual bar maybe)?

So you input LXIII BAR DCLVII to get 63657.

> [data driven event handler snipped]

...

> > Implementing Duco's do-event in an eventhandler might be a good start.

> I'm up for anything easily understood that makes the process simpler. The
> 'cond/thens' statement in Duco isn't terribly ugly, but certainly it could be
> made cleaner.

It's probably the right solution for Duco, I'm just thinking about applications with more complex interaction models. The most understable implementation of an interaction model will be one in which the solution mirrors the design. From looking at the code you want to be able to see that this Menu goes with that form and triggers this kind of action or state-change.

For the small interaction that Duco does that's easy to see from looking at the code, but if you were switching menu's based on state and had multiple views of your data (switching forms) then it would get more complicated.

> I'd go with the latter idea also. Julian Noble did some work on a
> finite-state-machine wordset for Forth; that might be a good place to start.
I have at least one forth FSM implementation sitting around.

New Files in the Quartus File Area

Posted by [Neal Bridges](#) on November 22, 1998 at 12:37:46:

graphics.txt: updated with erase-rectangle
Events.txt: updated with itemid
textalign.txt: provides type.left type.right type.center
pixel-width
fonts.txt: named constants for PalmOS font types
handler.txt: a simple menu handler for PalmOS apps
roman.txt: a module to manipulate Roman numerals.

Neal

- [File Area](#)

call/return overhead (was Stack control)

Posted by [Tony Sanders](#) on November 20, 1998 at 17:41:58:

I was re-reading the Stack control thread where Jim asks:

Neal: Third: define a couple of helper words for readability.

JH: I see how readability is improved, question is doesn't the extra definitions

JH: add overhead? In this example, overhead is not necessarily an issue, but in a

JH: full blown app, on a small platform like the pilot, I would assume that

JH: overhead should always be a major consideration.

There are two issues. The first is speed the other is code size.

Neal already mentioned that the overhead in forth for calling additional words is very small and that in the extreme case where you need to squeeze every bit of performance you could inline the code. Here is what I found:

```
: calibrate 1000 ms ;  
10 ' calibrate bench 1000 \ 10 ms / tick  
  
\ test 1.5 million iterations  
: overhead 30000 0 do loop ;  
: nothing ;  
: jsr/rts 30000 0 do nothing loop ;  
50 ' overhead bench 709  
50 ' jsr/rts bench 1281
```

I inspected the machine code and calling 'nothing' does indeed generate a jsr/rts with no additional code compared to the empty loop case -- so we're spending about 3.8 us per call/return on my Palm III, which is a little over 260,000 call/returns per second. That's pretty snappy so I would say that you will probably never need to worry about it.

Addressing the code size issues, I noticed that MakePRC generates "Headerless" words in the resulting PRC -- this means the space overhead for words is only 2 bytes (an RTS instruction at the end). Calls are made with an indexed JSR taking 4 bytes.

And as Neal pointed out, you can always declare the word inline.

Neal: Have you looked at/considered using PC relative jsr's with 8-bit displacements where you can? Hard for me to say without seeing the code but your branch threaded code should be able to tell when it can use it (dunno how much you float your CSP though).

On the interpreter side, there is a little more overhead (space for the name of the word and some other bits of info) but worry about that only when you must (good factoring will win you back much more than the overhead anyway, even in the interpreter).

Re: call/return overhead (was Stack control)

Posted by [Jim Hendricks](#) on November 23, 1998 at 08:38:54:

In Reply to: *call/return overhead (was Stack control)* posted by Tony Sanders on November 20, 1998 at 17:41:58:

```
: I was re-reading the Stack control thread where Jim asks:
: Neal: Third: define a couple of helper words for readability.
: JH: I see how readability is improved, question is doesn't the extra
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: JH: full blown app, on a small platform like the pilot, I would assume that
: JH: overhead should always be a major consideration.
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: Neal already mentioned that the overhead in forth for calling additional
: words is very small and that in the extreme case where you need to squeeze
: every bit of performance you could inline the code. Here is what I found:
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: Neal: Have you looked at/considered using PC relative jsr's with 8-bit
```

: displacements where you can? Hard for me to say without seeing the
: code but your branch threaded code should be able to tell when it can
: use it (dunno how much you float your CSP though).

:
: On the interpreter side, there is a little more overhead (space for the
: name of the word and some other bits of info) but worry about that only
: when you must (good factoring will win you back much more than the
: overhead anyway, even in the interpreter).

Thanks for the info, as I have been working with Quartus, I have been very happy with the performance as well as the PRC compiled footprint both in storage and at runtime. What has been drawing me toward using Quartus is that I have at my disposal a high level language at the cost of a medium to low level language (from the standpoint of performance and footprint) I think that's a fantastic tradeoff. I got my feet wet years ago programming on a Texas Instruments and later on a C64. In both cases, especially on the TI, ASM was always the choice for programming to gain the best performance/footprint. Now as a professional on the PC, I see that programmers who give a crap about performance/footprint are odd birds since the hardware industry seems to be happy to provide all the ram and CPU the standard "fat" programmer wants. I mean "fat" from the program standpoint, not to say there aren't any programmers who could stand to cut out a few pizza's. I have been suprised that now that I am interested in tinkering with the programming on a small device like the Pilot (where 2M of RAM is still great compared to the machines I grew up on, the pilot has to use that RAM for storage as well as execution) that the programming community has not returned to the roots of optimal programming. For USR/3Com to only officially support C as the programming environment I think is irrisponsible. There will always be programmers whose skills will only allow programming in a higher level programming env., and there will always be development deadlines that will encourage using higher level programming to deliver on these deadlines. This makes ASM an unreasonable choice for most. I beleive that 3Com needs to open up a little on there program certifications and allow for programs developed in other languages. I was reading some info from Eric Kenslaw, the author of the original Launch Pad where he had to move from the GCC compiler to the "official" C compiler so that he could receive certification for his program. This is despite the fact the the GCC seemed to be a better solution for him. It's a shame that Quartus being developed in Pila (ASM) can not receive certification as a program, let alone as a programming env. Even though Pila allows for development of a mature feature laden program that performs better and has probably 60% of the footprint of a comprable program written in C. It is even more a shame that programs written in Quartus which gains much of the same benifits of writing in raw ASM can not be certified. I guess I am barking up the wrong tree for all this since I sould probably vent at 3Com, but I guess I am one of the few weird birds out there who do still care about performance and footprint, especially now that I am putting my hand to the plow of programming in a limited resource env. like the pilot. BTW, Neal, thanks once again for a great development env. that can satisfy us weird birds!

Done preaching,
Preacher Jim

Re: call/return overhead (was Stack control)

Posted by [Neal Bridges](#) on November 23, 1998 at 15:25:53:

In Reply to: *Re: call/return overhead (was Stack control)* posted by Jim Hendricks on November 23, 1998 at 08:38:54:

...
> choice for most. I believe that 3Com needs to open up a little on there
> program certifications and allow for programs developed in other languages. I
> was reading some info from Eric Kenslaw, the author of the original Launch Pad
> where he had to move from the GCC compiler to the "official" C compiler so
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> he could receive certification for his program. This is despite the fact the
> the GCC seemed to be a better solution for him. It's a shame that Quartus
> being developed in Pila (ASM) can not receive certification as a program, let
> alone as a programming env. Even though Pila allows for development of a
...

Last time I checked, Platinum Certification was running about \$500 USD -- way too much for me to even consider it seriously.

They do publish the testing guidelines for Platinum Certification, though; you can download them. The most critical bit is the ability to pass a million or more Gremlin events in the Emulator -- and Quartus does. I'll provide a Gremlin-testable version of the compiler to anyone who wishes to run the Gremlin test. As well, Duco and Year (apps created with Quartus) both pass the million Gremlin mark.

3Com's motivation in only certifying products made with their compiler is quite clearly monetary, albeit near-sighted.

Neal

Quartus Platinum (has a nice ring to it)

Posted by [Tony Sanders](#) on November 23, 1998 at 20:58:18:

In Reply to: *Re: call/return overhead (was Stack control)* posted by Neal Bridges on November 23, 1998 at 15:25:53:

> Last time I checked, Platinum Certification was running about \$500 USD -- way
> too much for me to even consider it seriously.

Currently perhaps, but I for one would be willing to kick in \$100
to help you out should you ever decide to pursue it.

> 3Com's motivation in only certifying products made with their compiler is
quite
> clearly monetary, albeit near-sighted.

If it were monetary they would charge more for the Certification.
So I suspect there is another reason for it.

If anyone really cares then they should call and try to get hold of
the people at 3COM doing the Certification and find out what's really
going on.

If nothing else start up a thread on comp.sys.palmtops.pilot.

Re: Quartus Platinum (has a nice ring to it)

Posted by [Neal Bridges](#) on November 24, 1998 at 01:24:34:

In Reply to: *Quartus Platinum (has a nice ring to it)* posted by Tony Sanders on November 23, 1998 at 20:58:18:

> If it were monetary they would charge more for the Certification.
> So I suspect there is another reason for it.

It's not the profit from certification that I refer to -- rather the income

generated from sales of the Codewarrior compiler & associated products.

Neal

Re: Quartus Platinum (has a nice ring to it)

Posted by [Tony Sanders](#) on November 24, 1998 at 12:21:31:

In Reply to: *Re: Quartus Platinum (has a nice ring to it)* posted by Neal Bridges on November 24, 1998 at 01:24:34:

> > If it were monetary they would charge more for the Certification.
> > So I suspect there is another reason for it.

> It's not the profit from certification that I refer to -- rather the income
> generated from sales of the Codewarrior compiler & associated products.

That was understood. 3COM is profit motivated but their motivation is to sell more Palm's and not to sell more compilers. A product lives and dies by the applications available for it, you don't chase ISV's away if you want to survive. I believe that 3COM is aware of this.

Their reasoning for only supporting CodeWarrior in the certification process is probably because that is the only product with which they have expertise. I expect that the certification process consists of some code inspection as well as automated testing and verification (such as running your code through lint). The goal, I presume, is to give the customer confidence that the program will continue to run on future Palm platforms and to do that they need to make sure you aren't poking at the hardware, or doing other things that might break on future platforms.

That's all just a guess but I suspect it's not far from the mark.

More on certification

Posted by [Tony Sanders](#) on November 24, 1998 at 16:53:08:

In Reply to: *Re: Quartus Platinum (has a nice ring to it)* posted by Tony Sanders on November 24, 1998 at 12:21:31:

I read through the certification "toolkit" document.

First, I note that a third-party is doing the certifications. They aren't doing code inspections but they are doing a lot of UI testing. But they did mention a couple of CodeWarrior based tools they used to do some of the testing so I'm not sure what's going on there.

But the most important bit of new information was in section 11, Test Customization:

```
> If your product technology is a component other than an application,  
> or if your application technology does not apply to the majority of  
> the tests described in this kit, you may be eligible for test  
> customization. The following is the process used to assist ISVs  
> with customization of tests for obtaining the logo.
```

So basically, you can get anything certified if your willing to pay for it, which makes sense (they are spreading out the cost of developing the current test plan over many, similar applications).

I didn't see anything that would indicate collusion with 3COM to force people to buy CodeWarrior -- it was just the most logical choice for them to standardize on based on what they are trying to do.

If enough ISV's get together and say they want GCC supported I'm sure they could work something out (you just have to prove to them they are going to be able to cover their costs in developing it).



Re: More on certification

Posted by [Neal Bridges](#) on November 24, 1998 at 21:51:23:

In Reply to: *More on certification* posted by Tony Sanders on November 24, 1998 at 16:53:08:

> If enough ISV's get together and say they want GCC supported I'm
> sure they could work something out (you just have to prove to them
> they are going to be able to cover their costs in developing it).

My biggest concern with Platinum certification is the potential requirement for re-certification when changes are made to the program. Certainly I'm not prepared to pay to re-certify Quartus when I add features, or optimize parts of the kernel, and a 'certification' on an older version is essentially worthless.

What I am doing is applying the key parts of the published certification test (such as the Gremlin tests) myself, to ensure that I'm compliant with what 3Com considers decent guidelines for applications.

Neal

Re: More on certification

Posted by [Jim Hendricks](#) on November 25, 1998 at 08:53:10:

In Reply to: *Re: More on certification* posted by Neal Bridges on November 24, 1998 at 21:51:23:

Neal, Since I started this certification issue, I just wanted to make sure you understand that certification doesn't mean a whole lot to me. I as a developer do realize that there are a large body of people that do care about certification. I have always found the thought of certification to be too restrictive in general and have noticed that some of the most successful software endeavors on any platform have come without certification. This is not to say that certification is a bad thing,

just that I beleive some people put too much weight in it. All my pilot development will probably remain personal, or limited interest and therefore I don't care about certifying anything I write. Since I don't care about certifying my own work, I don't care if the tools I use are certified. When I spoke of certification, I was thinking mostly about serious programming on the pilot with possible commercial applications. Many of these types of programmers would probably care about certification of their programs since it is one more selling point. This is where I place the shame of the current certification process. I just hope that serious developers don't avoid Quartus because of the certification limitations.

Jim

Any opinions stated here are just the ramblings of a raving lunatic and may not have any link with reality!

Re: More on certification

Posted by [Neal Bridges](#) on November 25, 1998 at 11:07:45:

In Reply to: *Re: More on certification* posted by Jim Hendricks on November 25, 1998 at 08:53:10:

> I just hope that serious developers don't avoid Quartus because of the certification limitations.

Most OS manufacturers (Microsoft, IBM, etc.) do or at some point have sold a 'certification' process for applications... yet most applications are uncertified, even those produced by the OS manufacturer themselves.

I'm concerned primarily with product stability. All my testing goes into ensuring a close coupling between Quartus and the underlying PalmOS; both Quartus and apps generated in Quartus undergo rigorous testing to this end.

Neal

Re: call/return overhead (was Stack control)

Posted by [Neal Bridges](#) on November 20, 1998 at 18:29:31:

In Reply to: *call/return overhead (was Stack control)* posted by Tony Sanders on November 20, 1998 at 17:41:58:

: Neal: Have you looked at/considered using PC relative jsr's with 8-bit
: displacements where you can? Hard for me to say without seeing the
: code but your branch threaded code should be able to tell when it can
: use it (dunno how much you float your CSP though).

All subroutine calls are same size (4 bytes) so as to avoid codeshift (and
subsequent branch recalculation) during extraction. I've have considered using
BSRs where possible in the generated PRC. It's only a slight speed
optimization, but fairly easily implemented. It'll appear in a future build.

Neal

'Duco' now available in the File Area

Posted by [Neal Bridges](#) on November 19, 1998 at 13:43:14:



Duco is now available in the Quartus File Area. It's a standard four-function calculator with one key difference -- it works in Roman numerals.

I'll put the source up soon. It shows the use of full-fledged PalmOS GUI elements in Quartus apps.

Enjoy!

Neal

- [File Area](#)

newbie question...

Posted by [Kasper Jeppesen](#) on November 19, 1998 at 10:03:35:

hi all,

I'm pretty new to forth, so please excuse the stupidity of my questions :)

why does the following code create a fatal exception on my palmpilot :

```
: news create 40 allot ;
```

```
news test;
```

```
test 5 + @
```

I suspect I'm using create and alot in a wrong way...??

regards

Kasper

might have found the prob myself..

Posted by [Kasper Jeppesen](#) on November 19, 1998 at 10:33:29:

In Reply to: *newbie question...* posted by Kasper Jeppesen on November 19, 1998 at 10:03:35:

```
: hi all,  
: I'm pretty new to forth, so please excuse the stupidity of my questions :)  
: why does the following code create a fatal exception on my palmpilot :  
: : news create 40 allot ;  
: news test;  
: test 5 + @  
: I suspect I'm using create and alot in a wrong way...??
```

using even numbers does not cause a fatal exception, wich leads me to believe that my "fatal exception" was a segmentation violation..is this correct?

```
: regards  
: Kasper
```

Re: might have found the prob myself..

Posted by [Jim Hendricks](#) on November 19, 1998 at 10:46:43:

In Reply to: *might have found the prob myself..* posted by Kasper Jeppesen on November 19, 1998 at 10:33:29:

: using even numbers does not cause a fatal exception, wich leads me to believe
: that my "fatal exception" was a segmentation violation..is this correct?

You got it, it has to do with alignment. Since you are using an odd address, you need to use c@ to get the contents of that address. I am new to forth as well so I might not explain this correct, others will correct me I am sure if I am wrong. Most operations in forth are word aligned. Since a word in Quartus is 16 bits, most operations work against 16 bit aligned addresses. Since characters are 8 bit in quartus, if I will be accessing character data, I need to use operations specific to character aligned data.

Re: might have found the prob myself..

Posted by [Neal Bridges](#) on November 19, 1998 at 11:46:15:

In Reply to: *Re: might have found the prob myself..* posted by Jim Hendricks on November 19, 1998 at 10:46:43:

:
: : using even numbers does not cause a fatal exception, wich leads me to believe
: : that my "fatal exception" was a segmentation violation..is this correct?

It's an illegal memory access. The DragonBall CPU in the PalmPilot is Motorola 68000-based; word-sized memory reads must occur on even boundaries, or your "fatal exception" occurs.

If you load the module `safe.txt`, it will detect this and generate a kinder, gentler error.

Neal

Re: might have found the prob myself..

Posted by [Jim Hendricks](#) on November 19, 1998 at 11:59:27:

In Reply to: *Re: might have found the prob myself..* posted by Neal Bridges on November 19, 1998 at 11:46:15:

: :
: : : using even numbers does not cause a fatal exception, wich leads me to
: believe
: : : that my "fatal exception" was a segmentation violation..is this correct?
: It's an illegal memory access. The DragonBall CPU in the PalmPilot is Motorola
: 68000-based; word-sized memory reads must occur on even boundaries, or your
: "fatal exception" occurs.
: If you load the module `safe.txt`, it will detect this and generate a kinder,
: gentler error.

I assume though that C@ since it is planned for character data takes care to read the info from an even boundary and discard the 1st byte leaving the byte you actually desired which means that although the DragonBall CPU does not allow odd boundary memory access, all the character aligned words would simulate odd boundary memory access. Is this correct?

Re: might have found the prob myself..

Posted by [Neal Bridges](#) on November 19, 1998 at 12:08:23:

In Reply to: *Re: might have found the prob myself..* posted by Jim Hendricks on November 19, 1998 at 11:59:27:

```
: I assume though that C@ since it is planned for character data takes care to  
: read the info from an even boundary and discard the 1st byte leaving the byte  
: you actually desired which means that although the DragonBall CPU does not  
: allow odd boundary memory access, all the character aligned words  
: would simulate odd boundary memory access. Is this correct?
```

Not quite. The DragonBall even-boundary restriction on memory access only applies to word-sized (16-bit) reads/writes. Byte-sized (8-bit) reads and writes can occur from any memory address, whether even or odd.

If you had some pressing need for 16-bit reads from odd addresses, of course you can do two char-sized reads and combine them:

```
: w@ ( addr -- x )  
  dup c@ 8 lshift  
  swap char+ c@ or ;
```

I'll leave w! as an exercise.

Neal

Re: might have found the prob myself..

Posted by [Jim Hendricks](#) on November 20, 1998 at 08:56:25:

In Reply to: *Re: might have found the prob myself..* posted by Neal Bridges on November 19, 1998 at 12:08:23:

```
: : I assume though that C@ since it is planned for character data takes care to
: : read the info from an even boundary and discard the 1st byte leaving the byte
: : you actually desired which means that although the DragonBall CPU does not
: : allow odd boundary memory access, all the character aligned words
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: Not quite.  The DragonBall even-boundary restriction on memory access only
: applies to word-sized (16-bit) reads/writes.  Byte-sized (8-bit) reads and
: writes can occur from any memory address, whether even or odd.

: If you had some pressing need for 16-bit reads from odd addresses, of course you
: can do two char-sized reads and combine them:

:
: w@ ( addr -- x )
:   dup c@ 8 lshift
:   swap char+ c@ or ;
:

: I'll leave w! as an exercise.
```

I thought I posted a response to this yesterday but it doesn't show up so here goes again. I understand what your getting at from the technical point with the CPU. With forth in general though, isn't word alignment the expected behaviour except when using character aligned words? Now to the task at hand, w!

```
: W! ( x addr -- )
dup rot dup 8 rshift
rot c! 255 and swap char+ c! ;
```

I didn't test this so I'm not sure that it would work. I mimiced the byte order of your w@ in w!, what my question is that although since both the store and fetch instructions for odd address aligned word data are user implemented which means that the byte order is not important so long as both words use the same byte order, to be consistant with the existing word manipulation, shouldn't the byte order be the same as even bounded words? I thought that even bounded words are stored low order first.

Byte order

Posted by [Neal Bridges](#) on November 20, 1998 at 11:46:00:

In Reply to: *Re: might have found the prob myself..* posted by Jim Hendricks on

November 20, 1998 at 08:56:25:

: I thought I posted a response to this yesterday but it doesn't show up so here goes again. I understand what your getting at from the technical point with the CPU. With forth in general though, isn't word alignment the expected behaviour except when using character aligned words? Now to the task at hand, w!

Word-alignment is typical, yes. You'd only use words like W! and W@ if you had some pressing reason to do so.

```
: : W! ( x addr -- )  
: dup rot dup 8 rshift  
: rot c! 255 and swap char+ c! ;
```

: I didn't test this so I'm not sure that it would work. I mimiced the byte order of your w@ in w!, what my question is that although since both the store and fetch instructions for odd address aligned word data are user implemented which means that the byte order is not important so long as both words use the same byte order, to be consistant with the existing word manipulation, shouldn't the byte order be the same as even bounded words? I thought that even bounded words are stored low order first.

For the 68000 architecture, cells (16-bit words) are stored high-byte first, low-byte second.

```
hex  
create data 040f ,  
data c@ . 4 ok  
data char+ c@ . F ok
```

Neal

Form resources

Posted by [Jim Hendricks](#) on November 19, 1998 at 08:11:50:

Using year as my guide, I used onboard resource editor to create a database with a form resource in it, I provided a title on the form to prove that my form was being open instead of one of the internal one's. The form opened ok but none of the remaining code painted to that form. I looked briefly into

year to see if I was missing some kind of form activate but didn't see anything. Any help would be appreciated.

Jim

Re: Form resources

Posted by [Neal Bridges](#) on November 19, 1998 at 08:25:29:

In Reply to: *Form resources* posted by Jim Hendricks on November 19, 1998 at 08:11:50:

: Using year as my guide, I used onboard resource editor to create a database
: with a form resource in it, I provided a title on the form to prove that my
: form was being open instead of one of the internal one's. The form opened ok
: but none of the remaining code painted to that form. I looked briefly into
: year to see if I was missing some kind of form activate but didn't see
: anything. Any help would be appreciated.

Jim -- show me your source & describe your form, and I'll see what happens here.

Neal

Re: Form resources

Posted by [Jim Hendricks](#) on November 19, 1998 at 09:11:53:

In Reply to: *Re: Form resources* posted by Neal Bridges on November 19, 1998 at

08:25:29:

: Jim -- show me your source & describe your form, and I'll see what happens here.

Here goes:

```
form id 2000, t=0 l=0 w=160 h=160 defb=0 mb=0 hlp=0 usable & save behind
  1 widget = title
```

needs graphics

needs datamgr

needs ids

```
dmmodereadonly
```

```
(id) jehl (id) rsrc
```

```
dmopendatabasebytypecreator
```

```
2drop
```

```
:test
```

```
2000 showform
```

```
30 30 30 30 7 rounded-rectangle ;
```

If I change the showform to 1001 then I get the expected result, with 2000, I get my form with the title, but no rectangle

Thanks,

Jim



Re: Form resources

Posted by [Jim Hendricks](#) on November 19, 1998 at 08:52:18:

In Reply to: *Re: Form resources* posted by Neal Bridges on November 19, 1998 at 08:25:29:

: Jim -- show me your source & describe your form, and I'll see what happens here.

Give me a sec, I will try to minimize my code just to demonstrate the prob.

Jim

Re: Form resources

Posted by [Neal Bridges](#) on November 19, 1998 at 11:44:01:

In Reply to: *Re: Form resources* posted by Jim Hendricks on November 19, 1998 at 08:52:18:

Jim, I tried your code. At first I couldn't replicate, but I know the problem now -- it looks like a bug in Onboard's RsrcEdit. If after creating a new form you change its number, the change isn't properly made. Try this; make a new form, change its id, and then go in to edit it -- you'll see the title bar still has the old number in it.

If you just create a new form and use the number that's automatically given you, it works fine.

Neal

Re: Form resources

Posted by [Tony Sanders](#) on November 19, 1998 at 17:12:51:

In Reply to: *Re: Form resources* posted by Neal Bridges on November 19, 1998 at 11:44:01:

If you open the form with the hex editor you can change bytes 0x28 and 0x29 to correct this.

Re: Form resources

Posted by [Jim Hendricks](#) on November 20, 1998 at 11:08:34:

In Reply to: *Re: Form resources* posted by Tony Sanders on November 19, 1998 at 17:12:51:

: If you open the form with the hex editor you can change bytes
: 0x28 and 0x29 to correct this.

Yep, that did the trick

Re: Form resources

Posted by [Jim Hendricks](#) on November 19, 1998 at 12:10:37:

In Reply to: *Re: Form resources* posted by Neal Bridges on November 19, 1998 at 11:44:01:

: Jim, I tried your code. At first I couldn't replicate, but I know the problem

: now -- it looks like a bug in Onboard's RsrcEdit. If after creating a new form
: you change its number, the change isn't properly made. Try this; make a new
: form, change its id, and then go in to edit it -- you'll see the title bar still
: has the old number in it.

: If you just create a new form and use the number that's automatically given you,
: it works fine.

That did it! What's interesting is that the form did open with the 2000, even though
the form was showing in the title of the form edit that it was 1000 while on the
dbrecord screen it showed as 2000. This leads me to believe that the resource ID
must be stored in 2 different places within the db. BTW, I still haven't received
any response back from individeo about onboard, but as I have been messing around
with the product, it appears that something like this could be written in Quartus! I
don't know if I am over simplifying it. I would be interested in getting other
people's opinions on possibly starting a joint task group to try and write a resource
editing tool for the pilot in Quartus. Of course, I would be willing to join the
task force and put in my 2 cents and lend a hand in the codeing although since I am a
newbie to forth, my coding takes some time and is not factored as well as forth
should be.

Re: Form resources

Posted by [Neal Bridges](#) on November 19, 1998 at 12:19:24:

In Reply to: *Re: Form resources* posted by Jim Hendricks on November 19, 1998 at
12:10:37:

> BTW, I still
> haven't received any response back from individeo about onboard, but as I have
> been messing around with the product, it appears that something like this
> could
> be written in Quartus! I don't know if I am over simplifying it. I would be
> interested in getting other people's opinions on possibly starting a joint
> task
> group to try and write a resource editing tool for the pilot in Quartus. Of
> course, I would be willing to join the task force and put in my 2 cents and
> lend
> a hand in the codeing although since I am a newbie to forth, my coding takes
> some time and is not factored as well as forth should be.

Such a thing could certainly be re-written in Quartus; however I'd rather not reinvent the wheel where it can be avoided. Hopefully we'll hear back from the Onboard developer. At the ver least least it'd be nice to have a reference implmentation to examine.

Neal

Getting Started?

Posted by [Dave Price](#) on November 19, 1998 at 05:13:35:

I just got my palm-iii and am glad to learn that there is a forth for it.

I have used forth on 8088 systems under m\$DOS but not with a GUI -

I have looked at the example apps in the file area, and wonder - where do i start in learning to run forth and build data entry screens that will enter data into hot-sync files - i am interested in building input screens for time tracking that can be hot synced to a desktop system.

any clues will be appreciated.

aloha,
dave

Re: Getting Started?

Posted by [Neal Bridges](#) on November 19, 1998 at 11:48:44:

In Reply to: *Getting Started?* posted by Dave Price on November 19, 1998 at 05:13:35:

: I just got my palm-iii and am glad to learn that there is a forth for it.
: I have used forth on 8088 systems under m\$DOS but not with a GUI -
: I have looked at the example apps in the file area, and wonder - where do i
: start in learning to run forth and build data entry screens that will enter
data
: into hot-sync files - i am interested in building input screens for time
: tracking that can be hot synced to a desktop system.
: any clues will be appreciated.

Dave;

For what you're after, unless you want to reinvent the wheel, I'd recommend you look at something like Satellite Forms -- they've done all the overhead work in your specific domain already.

However, there's nothing preventing you from using Quartus to do the wheel re-inventing, if that's what you decided you want to do.

Neal

Re: Getting Started?

Posted by [Jim Hendricks](#) on November 19, 1998 at 10:57:06:

In Reply to: *Getting Started?* posted by Dave Price on November 19, 1998 at 05:13:35:

: I just got my palm-iii and am glad to learn that there is a forth for it.

: I have used forth on 8088 systems under m\$DOS but not with a GUI -
:
: I have looked at the example apps in the file area, and wonder - where do i
: start in learning to run forth and build data entry screens that will enter data
: into hot-sync files - i am interested in building input screens for time
: tracking that can be hot synced to a desktop system.
:
: any clues will be appreciated.
:
: aloha,
: dave

The problem you are facing is knowing the Palms API. Quartus like most environments relies on the OS to provide many features. While Quartus can be used to create data entry screens, it would probably make sense to create a form with your data entry fields on it and then use Quartus to program the forms logic. This requires having a resource compiler. It seems that PilRC from Wes Cherry is the defacto standard for resource compilation if you don't want to purchase the Application development package from 3com. You can find tools like PilRC from roadcoders.com. There is also the onboard c package which contains a resource compiler that runs on the palm pilot instead of on your pc. The problem is as I discovered yesterday, the onboard product line seems to be discontinued, I am awaiting a response from their webmaster to see if there's something we can do to at least keep the resource compiler alive. When it comes to hot syncing your stuff back to the pc, I beleive the accepted way for this would be to use the conduit development kit to pick up your data changes when you hot sync. I think, although I am not positive about this, you can also as part of your Quartus program, set the backup flag in the database when you change the data so that when the next hot sync runs, it will backup your database to your PC's backup directory. Not exactly the cleanest method since you are hot syncing the whole DB instead of syncing up the changes, thus requiring any PC based app that accesses this data to determine for itself what is new. Hope this helps.

Jim

Onboard tools

Posted by [Jim Hendricks](#) on November 18, 1998 at 14:42:35:

There have been numerous referals in this discussion group to the onboard resource editor. Because of this, I assumed that everyone would be interested to know that the web site for the onboard tools indicates that it is defunct!

I plan on e-mailing the author to find out info about the copyright to the beta, as well as info on obtaining a non-timed out version, I haven't had much time to mess with the resource editor myself but based on what little I have done, we either all need to send the message to the original author that it is indeed a useful tool (at least the resource editing part) and deserves either further development, or passing of the torch to someone capable of maintaining it. Let me know what you all think!

Re: Onboard tools

Posted by [Neal Bridges](#) on November 18, 1998 at 15:10:37:

In Reply to: *Onboard tools* posted by Jim Hendricks on November 18, 1998 at 14:42:35:

: There have been numerous referals in this discussion group to the onboard
: resource editor. Because of this, I assumed that everyone would be interested
: to know that the web site for the onboard tools indicates that it is defunct!

: I plan on e-mailing the author to find out info about the copyright to the
: beta, as well as info on obtaining a non-timed out version, I haven't had much
: time to mess with the resource editor myself but based on what little I have
: done, we either all need to send the message to the original author that it is
: indeed a useful tool (at least the resource editing part) and deserves
either
: further development, or passing of the torch to someone capable of maintaining
: it. Let me know what you all think!

Yikes! Looks like it went away today; it was there yesterday. Let me know what he says; I'd be happy to maintain RsrcEdit myself.

Neal

Re: Onboard tools

Posted by [Jim Hendricks](#) on November 18, 1998 at 16:19:33:

In Reply to: *Re: Onboard tools* posted by Neal Bridges on November 18, 1998 at 15:10:37:

Already fired off the e-mail, one of the suggestions I made to individeo is if the source could be release to you as the author of a product (Quartus) that has a synergy with the resource editing feature of onboard. I figured if they would release the source to you, then a team could be formed to maintain, or it could be a satalite product to Quartus.

: : There have been numerous referals in this discussion group to the onboard
: : resource editor. Because of this, I assumed that everyone would be interested
: : to know that the web site for the onboard tools indicates that it is defunct!

: : I plan on e-mailing the author to find out info about the copyright to the
: : beta, as well as info on obtaining a non-timed out version, I haven't had much
: : time to mess with the resource editor myself but based on what little I have
: : done, we either all need to send the message to the original author that it is
: : indeed a useful tool (at least the resource editing part) and deserves
: : either
: : further development, or passing of the torch to someone capable of maintaining
: : it. Let me know what you all think!

: Yikes! Looks like it went away today; it was there yesterday. Let me know what
: he says; I'd be happy to maintain RsrcEdit myself.

: Neal



insignificant error

Posted by [Jim Deakin](#) on November 18, 1998 at 05:21:02:

I was playing around with RsrcEdit, and examined Quartus' databases. I found that the Title of Talt 1005 is down as 'Execption Report' It's only a spelling error, but I think it must be a tribute to Quartus' stability that it's not been noticed and reported earlier!

Jim

Re: insignificant error

Posted by [Neal Bridges](#) on November 18, 1998 at 10:24:59:

In Reply to: *insignificant error* posted by Jim Deakin on November 18, 1998 at 05:21:02:

: I was playing around with RsrcEdit, and examined Quartus' databases. I found
: that the Title of Talt 1005 is down as 'Execption Report' It's only a spelling
: error, but I think it must be a tribute to Quartus' stability that it's not
: been
: noticed and reported earlier!
: Jim

Thanks Jim :) It's fixed.

Neal

Event Q. and some info

Posted by [Branko Znuderl](#) on November 17, 1998 at 03:34:04:

Hello,

Some questions concerning Events:

- where could I find examples how events are handled?
- how could I capture stylus tap position on the screen?

When will compiler for stand-alone PRC be available?

How could I get one for testing?

Regards, Branko

Re: Event Q. and some info

Posted by [Neal Bridges](#) on November 17, 1998 at 10:59:56:

In Reply to: *Event Q. and some info* posted by Branko Znuderl on November 17, 1998 at 03:34:04:

: Hello,

: Some questions concerning Events:

- : - where could I find examples how events are handled?
- : - how could I capture stylus tap position on the screen?

Branko, have a look at the Quartus File Area. There's source there (in particular Lines! comes to mind) that handles events and uses the pen position. Also, there's a word in Events.txt called coords@ that returns the pen xy coordinates.

I'll be putting up a new example soon called Duco that handles events coming from a GUI form.

: When will compiler for stand-alone PRC be available?
: How could I get one for testing?

It's available now in beta; I'll send it to you this evening.

Neal

Re: Event Q. and some info

Posted by [Branko Znuderl](#) on November 19, 1998 at 02:41:09:

In Reply to: *Re: Event Q. and some info* posted by Neal Bridges on November 17, 1998 at 10:59:56:

Dear Neal,

: Branko, have a look at the Quartus File Area. There's source there (in
: particular Lines! comes to mind) that handles events and uses the pen position.
I have begun to study it...

: Also, there's a word in Events.txt called coords@ that returns the pen xy
: coordinates.

Yes I have seen this. And till now I have managed to read one set of xy
coordinates from last pen stroke. Now I'm looking a way how to wait for
new pen stroke...any help apprichiated....

And I have little problem with Events.txt (and also with Graphics.txt)
example - it produces Fatal exception and reset and I don't know why.
I have rewritten basic graphics comm. myself. And in Events example
I have omit Eventypes after Penup or down event.

Any help welcomed...

: I'll be putting up a new example soon called Duco that handles events coming
: from a GUI form.

Neal, you make a terific job here....

But what I somehow miss (I'm really a begginer - alltrou I have programed
little bit with Forth in the times of Sicleir spectrum and QL machines) is
clear examples of some everyday procedures... like in my case...

how to wait for next pen touch down and then do something.

Once again, you are doing terrific job, and please, please continue.

Best regards, Branko

P.S. I will come back soon (I hope) with little prog. which will probably work, but will definitely not be a programming standard of the art :)

Re: Event Q. and some info

Posted by [Neal Bridges](#) on November 19, 1998 at 08:34:33:

In Reply to: *Re: Event Q. and some info* posted by Branko Znuderl on November 19, 1998 at 02:41:09:

: Yes I have seen this. And till now I have managed to read one set of xy
: coordinates from last pen stroke. Now I'm looking a way how to wait for
: new pen stroke...any help appreciated....

needs graphics
needs Events

: pendots
begin ekey penMoveEvent = if coords@ point then again ;

: And I have little problem with Events.txt (and also with Graphics.txt)
: example - it produces Fatal exception and reset and I don't know why.
: I have rewritten basic graphics comm. myself. And in Events example
: I have omit Eventypes after Penup or down event.

Branko, what is in your startup.quartus? In other words, if you rename your startup.quartus file, start Quartus, and only include graphics, what then happens?

If the problem isn't a faulty definition in startup.quartus, you might try including safe.txt first, then Events.txt -- and see if safe.txt spots a problem. Did you enter those modules by hand, or cut&paste to the Palm Desktop software?

: Any help welcomed...

: : I'll be putting up a new example soon called Duco that handles events coming
: : from a GUI form.

: Neal, you make a terrific job here....

: But what I somehow miss (I'm really a beginner - alltrou I have programmed
: little bit with Forth in the times of Sicleir spectrum and QL machines) is
: clear examples of some everyday procedures... like in my case...
: how to wait for next pen touch down and then do something.

Tutorial documentation is the most time-consuming sort of all documentation to
produce. I'm working on it; what I can do for the moment is post little
examples like the one above, when you have questions.

: Once again, you are doing a terrific job, and please, please continue.

: Best regards, Branko

: P.S. I will come back soon (I hope) with little prog. which will probably
: work, but will definitely not be a programming standard of the art :)

Looking forward to it!

Neal

Re: Event Q. and some info

Posted by [Branko Znuderl](#) on November 20, 1998 at 17:35:43:

In Reply to: *Re: Event Q. and some info* posted by Neal Bridges on November 19, 1998
at 08:34:33:

Neal,

: : Yes I have seen this. And till now I have managed to read one set of xy
: : coordinates from last pen stroke. Now I'm looking a way how to wait for
: : new pen stroke...any help appreciated....

:

: needs graphics
: needs Events

: : pendots

```
:   begin ekey penMoveEvent = if  coords@ point  then  again ;  
:
```

Thank you for this example - it helped me fine.

I have changed it little bit - now does what I want -
waits for pen touchdown and returns coordinates:

```
needs graphics  
needs Events
```

```
: pen@ ( -- y x )  
   begin ekey penMoveEvent = if  coords@ exit  then  again ;
```

```
: : And I have little problem with Events.txt (and also with Graphics.txt)
```

It was MakeDocW conversion which 'make' a problem - it is certainly beter
to copy/paste to MemoPad in Desktop and sync. Now your examples are working
fine. Thanks again.

So now I'm again on the road....

```
: : P.S. I will come back soon (I hope) with little prog.
```

Re: Event Q. and some info

Posted by [Neal Bridges](#) on November 20, 1998 at 18:43:41:

In Reply to: *Re: Event Q. and some info* posted by Branko Znuderl on November 20, 1998
at 17:35:43:

```
: I have changed it little bit - now does what I want -  
: waits for pen touchdown and returns coordinates:
```

```
: needs graphics  
: needs Events
```

```
: : pen@ ( -- y x )  
:   begin ekey penMoveEvent = if  coords@ exit  then  again ;
```

I'd recode this a bit to avoid using 'exit', and to test for the right
event type:

```
: pen@ ( -- y x )  
  begin ekey penDownEvent = until coords@ ;
```

Neal

Re: Event Q. and some info

Posted by [Branko Znuderl](#) on November 22, 1998 at 03:30:22:

In Reply to: *Re: Event Q. and some info* posted by Neal Bridges on November 20, 1998 at 18:43:41:

```
: : : pen@ ( -- y x )  
: :   begin ekey penMoveEvent = if coords@ exit then again ;  
  
: I'd recode this a bit to avoid using 'exit', and to test for the right  
: event type:
```

:

```
: : pen@ ( -- y x )  
:   begin ekey penDownEvent = until coords@ ;  
:
```

Neal

That IS difference betwene hobbyist and profi :)

Thanks!

Branko

Re: Event Q. and some info

Posted by [Branko Znuderl](#) on November 19, 1998 at 11:49:13:

In Reply to: *Re: Event Q. and some info* posted by Neal Bridges on November 19, 1998 at 08:34:33:

: : Yes I have seen this. And till now I have managed to read one set of xy
: : coordinates from last pen stroke. Now I'm looking a way how to wait for
: : new pen stroke...any help apprichiated....

:

: needs graphics
: needs Events

: : pendots
: begin ekey penMoveEvent = if coords@ point then again ;
:

Thanks, I'll try this...

:

: : And I have little problem with Events.txt (and also with Graphics.txt)
: : example - it produces Fatal exception and reset and I don't know why.
: : I have rewritten basic graphics comm. myself. And in Events example
: : I have omit Eventypes after Penup or down event.

: Branko, what is in your startup.quartus? In other words, if you rename your
: startup.quartus file, start Quartus, and only include graphics, what then
: happens?

I don't have this file (not in the MemoPad and not in Doc/Qed).

: If the problem isn't a faulty definition in startup.quartus, you might try
: including safe.txt first, then Events.txt -- and see if safe.txt spots a
: problem. Did you enter those modules by hand, or cut&paste to the Palm
Desktop
: software?

I have converted them by MakeDocW and then copy paste to MemoPad.

: Tutorial documentation is the most time-consuming sort of all documentation
to
: produce. I'm working on it; what I can do for the moment is post little
: examples like the one above, when you have questions.

I understand and you are cool.

Branko

Re: Event Q. and some info

Posted by [Neal Bridges](#) on November 19, 1998 at 12:01:27:

In Reply to: *Re: Event Q. and some info* posted by Branko Znuderl on November 19, 1998 at 11:49:13:

: : If the problem isn't a faulty definition in startup.quartus, you might try
: : including safe.txt first, then Events.txt -- and see if safe.txt spots a
: : problem. Did you enter those modules by hand, or cut&paste to the Palm
: : Desktop
: : software?

: I have converted them by MakeDocW and then copy paste to MemoPad.

But my guess is that the MakeDocW/copy&paste process isn't preserving the end-of-line characters. The Quartus input buffer is 80 characters long, so each line of source in a memo needs to be terminated by a carriage return to make it 80 characters long or less.

Neal

Re: Event Q. and some info

Posted by [Branko Znuderl](#) on November 19, 1998 at 13:11:52:

In Reply to: *Re: Event Q. and some info* posted by Neal Bridges on November 19, 1998 at 12:01:27:

: : : If the problem isn't a faulty definition in startup.quartus, you might
try
: : : including safe.txt first, then Events.txt -- and see if safe.txt spots a
: : : problem. Did you enter those modules by hand, or cut&paste to the Palm
: : Desktop
: : : software?

: : I have converted them by MakeDocW and then copy paste to MemoPad.

: But my guess is that the MakeDocW/copy&paste process isn't preserving the
: end-of-line characters. The Quartus input buffer is 80 characters long, so
each
: line of source in a memo needs to be terminated by a carriage return to make
it
: 80 characters long or less.

: Neal

Thanks - how small thinks can be important.

Branko

Traps versus words, and a question on conventions.

Posted by [Mike Wilson](#) on November 16, 1998 at 10:59:22:

I noticed in the "\ graphics 98.10.13 2:53 am NAB" memo that the word "line" gets defined as...

```
: line ( y2 x2 y1 x1 --) WinDrawLine ;
```

... and this got me wondering about the relative speed/space performance of traps and words. There are really only two reasons why you might define a word like this:

- 1) You think "WinDrawLine" is too long to write everytime you want to draw a line, or
- 2) Inlining the trap call directly takes significantly more space than invoking the word.

So the question is, does it make sense to wrapper all of the Win... traps (even the ones which don't need to be) because it ends up generating less code if used frequently, and if so what would the performance hit be?

I also started doing some experiments with line "styles", so for example "line" became something like (there may be typos -- I'm typing from memory here):

```
: setStyleBlack
  styleBlack style !
;

\ similarly for the other styles.

: line
  currentStyle @ CASE
    styleWhite   OF WinEraseLine   ENDOF
    styleGray    OF WinDrawGrayLine ENDOF
    styleBlack   OF WinDrawLine    ENDOF
    styleInvert  OF WinInvertLine  ENDOF
  ENDCASE
;
```

This of course was too slow when used with the "circle" word which calls line for each point so I changed the code to be more like this:

```
: blackLineImpl WinDrawLine ;

: setStyleBlack
  ['] blackLineImpl style !
;

\ similarly for the other styles.

: line
  style @ EXECUTE
;
```

Which performs pretty well actually. I did wonder if I could just write

```
: setStyleBlack
  ['] WinDrawLine style !
;
```

but I suspected that the trap was inlined rather than being the address of a routine to call, and thus would not work.

In the long run, it's still not clear to me that the exercise proved to be

adding enough value to continue. Next time I'm going to build one which is as close to the platform API as possible.

I'm a class library designer by trade (*sigh*) and one of the things I have learned is that the closer you stick to what the platform provides, the easier it is to work with (both for you and for new users). You know what I would really like is to have the "line" word be called "winDrawLine" (note the case change on the "w"). Too bad Quartus isn't case sensitive. :-)

Finally, because of my occupation, I'm kind of big on information hiding and I was wondering what conventions we should be using for hiding implementation words, and for public words in API which we expect people to share. I was thinking of calling the memo "win" and using names like "win.DrawLine" for the API... [Note: This only sounds anal. When you've got a user base of 10,000 people and they are all contributing to the library, it will be nice to have some rules in place. Really.]

McQ.

Re: Traps versus words, and a question on conventions.

Posted by [Tony Sanders](#) on November 16, 1998 at 12:30:43:

In Reply to: *Traps versus words, and a question on conventions.* posted by Mike Wilson on November 16, 1998 at 10:59:22:

Forth "style" is to prefer vectors over flags. However, instead of a global vector I would prefer to see it in a GC (graphics context) structure allocated by the caller and passed into the routines. Of course, the Palm isn't a general purpose computing device so maybe the overhead of a localized context isn't warranted in which case you could use the postscript model and have one global GC with words to save/restore it.

You are correct that WinDrawLine generates more code than a thread to a word (threaded call is 2 bytes, windrawline is 16 bytes).

The extra overhead for calling a word is pretty small, doubt you would notice it compared against the overhead of making

the trap in the first place. Anyone care to benchmark the two and post some results? I'll try to do it later if I can. I suspect the difference is down in the noise around 1-2%.

Re: Traps versus words, and a question on conventions.

Posted by [Neal Bridges](#) on November 16, 1998 at 12:10:34:

In Reply to: *Traps versus words, and a question on conventions.* posted by Mike Wilson on November 16, 1998 at 10:59:22:

: I noticed in the "\ graphics 98.10.13 2:53 am NAB" memo that the word "line"
: gets defined as...

```
:      : line ( y2 x2 y1 x1 --) WinDrawLine ;
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: ... and this got me wondering about the relative speed/space performance of
: traps and words. There are really only two reasons why you might define a word
: like this:

: 1) You think "WinDrawLine" is too long to write everytime you want to draw a
: line, or

: 2) Inlining the trap call directly takes significantly more space than
invoking
: the word.

: So the question is, does it make sense to wrapper all of the Win... traps
(even
: the ones which don't need to be) because it ends up generating less code if
: used frequently, and if so what would the performance hit be?

It doesn't make sense to wrapper all of them, but the words in graphics are so generic that it thought it wise to give them generic names. (Also, line was initially defined for PilotFORTH, and was a wrapper for an explicit systrap; converting the graphics library to Quartus while retaining compatibility meant simplifying it to what it is now.) The performance hit is one subroutine call; very minimal. Wrapped calls also save a few bytes of memory per invocation, as you mention.

[other thoughts on wrappers]

: Finally, because of my occupation, I'm kind of big on information hiding and I
: was wondering what conventions we should be using for hiding implementation
: words, and for public words in API which we expect people to share. I was
: thinking of calling the memo "win" and using names like "win.DrawLine" for the
: API... [Note: This only sounds anal. When you've got a user base of 10,000
: people and they are all contributing to the library, it will be nice to have
: some rules in place. Really.]

As a rule, I wrap system calls that require peculiar stack manipulations, for instance WinDrawRectangle. I also wrap to factor; again, see rectangle and rounded-rectangle, or seed and rand. Some of those PalmOS calls have multiple functions, which isn't the Forth way; I break those into separate, well-named words.

I'm not in favour of the idea of renaming all the system calls; it's an unnecessary overhead.

Neal

Re: Traps versus words, and a question on conventions.

Posted by [mike wilson](#) on November 16, 1998 at 13:55:30:

In Reply to: *Re: Traps versus words, and a question on conventions.* posted by Neal Bridges on November 16, 1998 at 12:10:34:

: I'm not in favour of the idea of renaming all the system calls; it's an
: unnecessary overhead.

I understand this, and I also understand your rational for calling the word "line". The implication though is that for new development you would recommend using WinDrawLine directly, unless there was some over-riding concern -- the two obvious examples being:

1) saving space was such a high priority that the the 16 bytes versus 2 bytes difference was important.

2) you want to use a vector style approach as Tony mentioned in his post.

In any case, not wrapping them unnecessarily was the conclusion I came to as well.

The thing is though, for "rounded-rectangle", "rectangle", etc., when you *do* decide to do a wrapper, would you pick names which are similar in some way to the trap names, or package style names, or...?

Sadly, names are important, and now is the time to worry about them, before you/we have built up such a legacy of code that it's too painful to update it. Hence my questions about conventions for naming, and preferred strategies for hiding implementation words (I haven't checked, do you support VOCABULARY, ALSO/ONLY, something else?).

McQ.

Re: Traps versus words, and a question on conventions.

Posted by [Neal Bridges](#) on November 16, 1998 at 14:54:30:

In Reply to: *Re: Traps versus words, and a question on conventions.* posted by mike wilson on November 16, 1998 at 13:55:30:

: The thing is though, for "rounded-rectangle", "rectangle", etc., when you *do*
: decide to do a wrapper, would you pick names which are similar in some way to
: the trap names, or package style names, or...?

I tend to name by factored function. With the rectangle example, the names were easy; others might be tougher.

: Sadly, names are important, and now is the time to worry about them, before
: you/we have built up such a legacy of code that it's too painful to update it.
: Hence my questions about conventions for naming, and preferred strategies for
: hiding implementation words (I haven't checked, do you support VOCABULARY,
: ALSO/ONLY, something else?).

Full ISO/ANS Standard SEARCH wordset support, including ALSO/ONLY. You could theoretically have thousands of wordlists. Bear in mind that the search order itself is only 8 wordlists deep.

I don't do any implementation-word hiding during development; never felt the

need. If I did, I'd go with the FSL Private: and Public: words.

Neal

Re: Traps versus words, and a question on conventions.

Posted by [Tony Sanders](#) on November 16, 1998 at 16:34:18:

In Reply to: *Re: Traps versus words, and a question on conventions.* posted by Neal Bridges on November 16, 1998 at 14:54:30:

: I don't do any implementation-word hiding during development; never felt the
: need. If I did, I'd go with the FSL Private: and Public: words.

Basically, when you write a Forth application you write lexicons of words -- each lexicon building on and/or reusing the words below it -- and in some cases, redefining words below it.

If you define a "private" word somewhere in your lexicon there is nothing preventing other lexicons from reusing that name so you don't need separate namespaces as much as you do in other languages. And when you really want separate namespaces the traditional solution is to create a new wordlist (ala ASSEMBLER).

By way of example, there is nothing wrong with the following:

```
: foo s" define a temporary string." ;  
: use-foo foo type ;  
\ later in the application  
: foo s" another temporary string." ;  
: ... foo ... ;
```

When you're writing a lexicon you have to know what functions your importing from underlying lexicons so it doesn't cause any conflicts in practice unless you have poorly designed lexicons.

If you look at Neal's "safe" module you can see some of the power you get in return.

In more complex cases you might need to use objects and store

methods in data-structures and call them indirectly (possibly even using `:noname` to generate anonymous words for the methods). But that's a design trade-off, warranted in some cases and not in others.

Feedback on Year

Posted by [Neal Bridges](#) on November 15, 1998 at 17:51:44:

Any questions about the sources?

Neal

Re: Feedback on Year

Posted by [Tony Sanders](#) on November 16, 1998 at 12:50:19:

In Reply to: *Feedback on Year* posted by Neal Bridges on November 15, 1998 at 17:51:44:

Having to call "callback" and "end-callback" seems a bit unnatural. Can you think of another syntax that would work?

My first choice would be:

```
: handler ( &event. -- &event. )  
  ...  
; callback
```

it might actually be possible to make that work. end-callback could be invoked by putting it on the return stack on entry. The question is how to vector the entry code (since we're subroutine threaded) without reserving a slot in every word. Maybe Neal can think of something since he knows the internals better.

A second choice would be something on the order of:

```
callback: handler ... ;
: (callback)
  callback
  ['] end-callback (xt-to-r)
  \ tuck it on return stack
  r> swap >r >r ;
: callback: : postpone (callback) ;
```

That's just off the top of my head, not tested code.

Might have more comments/questions later...

Re: Feedback on Year

Posted by [Neal Bridges](#) on November 16, 1998 at 13:25:03:

In Reply to: *Re: Feedback on Year* posted by Tony Sanders on November 16, 1998 at 12:50:19:

: Having to call "callback" and "end-callback" seems a bit unnatural.
: Can you think of another syntax that would work?

:callback and ;callback are easy to define as syntactic sugar.

```
: :callback ( "name" -- )
  postpone : postpone callback
; immediate
```

```
: ;callback ( -- )
  postpone end-callback postpone ;
; immediate
```

Neal

Re: (more) Feedback on Year

Posted by [Tony Sanders](#) on November 16, 1998 at 14:33:49:

In Reply to: *Re: Feedback on Year* posted by Neal Bridges on November 16, 1998 at 13:25:03:

: :callback and ;callback are easy to define as syntactic sugar.

Yeap. So I guess that means that
: word ... ; callback
is out of the question :)

Moving on...

Where does "handled" come from in your sources? And what is the significance of the preceding 1 or 0?

When does the eventhandler get called? Is it only when we're in an event wait call like KEY or is it async?

This bit of code begs for an abstraction...
:noname s" XXXXXX" ; execute drop constant monthletters
Perhaps something for the ol' toolkit.

Using HERE for temporary storage in week-start-preference is, um, interesting :)

Can you give a quick overview of how MakePRC works. Specifically it looks like it would have a hard time with vectors, if I had
['] nip @ execute

(e.g., in a defer word) how does it know to pull NIP into the .PRC?

Do I need a dummy word to help it out, like:

```
: make-prc-happy 0 if nip tuck then ;  
: go make-prc-happy rest-of-application ;
```

Do I need to reinitialize all my variables (I'm guessing it handles that).

One thing I didn't get is how you open your p4ap/rsrc database "statically". I'm guessing that MakePRC is somehow pulling in the resources and compiling them automatically so at run-time in the compiled application you don't need the resources database there. Does this put constraints on how you write your code (i.e., does the resource have to be a constant placed immediately before the call to FrmAlert, etc)? Or does the magic happen when you Open

the database?

What's the plan WRT implementing a resource compiler in Quartus so we don't have to use pilrc/pila (which prevents true on-the-go software development)? I haven't looked at it too much but it doesn't look to be that complicated at first glance. If anybody is interested in working on this I would be happy to help out.

Re: (more) Feedback on Year

Posted by [Neal Bridges](#) on November 16, 1998 at 15:16:58:

In Reply to: *Re: (more) Feedback on Year* posted by Tony Sanders on November 16, 1998 at 14:33:49:

: Where does "handled" come from in your sources? And what is the
: significance of the preceding 1 or 0?

HANDLED is one of the new words I discuss in the changes.

HANDLED (flag --)

This sets the return flag from the callback; 0 (false) means the event wasn't handled; 1 (or any non-zero) means it was handled. HANDLED should be the last thing you do before END-CALLBACK.

: When does the eventhandler get called? Is it only when we're in an
: event wait call like KEY or is it async?

It's not asynchronous -- it's called by the event handling loop that lives in EKEY and KEY.

: This bit of code begs for an abstraction...
: :noname s" XXXXXX" ; execute drop constant monthletters
: Perhaps something for the ol' toolkit.

This would be taken care of by the FILE implementation of S" -- which I'll get to. The FILE S" works in interpretation state.

: Using HERE for temporary storage in week-start-preference is,
: um, interesting :)

It works -- the compiled targets all have a number of bytes (I believe it's 40 bytes) available beyond HERE. I could have allocated a static buffer,

but it would just enlarge the size of the resulting stand-alone PRC without any purpose.

```
: Can you give a quick overview of how MakePRC works.  Specifically
: it looks like it would have a hard time with vectors, if I had
:   ['] nip @ execute
: (e.g., in a defer word) how does it know to pull NIP into the .PRC?
: Do I need a dummy word to help it out, like:
:   : make-prc-happy 0 if nip tuck then ;
:   : go make-prc-happy rest-of-application ;
: Do I need to reinitialize all my variables (I'm guessing it handles that).
```

You don't need to try and make MakePRC happy. ['] works perfectly in compiled targets. If you tick a word in interpretation state, that XT won't be valid in the compiled target; I'll be providing '! and !, words very soon to accommodate that. While you're waiting, you could have your application ['] any required words and initialize your vectors at startup.

Variables in a stand-alone PRC are automatically initialized at startup to the values they had at the time MakePRC is executed.

```
: One thing I didn't get is how you open your p4ap/rsrc database "statically".
: I'm guessing that MakePRC is somehow pulling in the resources and compiling
: them automatically so at run-time in the compiled application you don't need
: the resources database there. Does this put constraints on how you write
: your code (i.e., does the resource have to be a constant placed immediately
: before the call to FrmAlert, etc)? Or does the magic happen when you Open
: the database?
```

The magic, as you say, happens automatically when you open the database -- the resources in it become part of the PalmOS 'search order', as it were. If you look at make-year, you'll see that I'm calling copyrsrc explicitly to copy those resources from the resource database into the target PRC; then they're available directly to the stand-alone application without any need for an external resource database.

The named constants are there only for readability.

```
: What's the plan WRT implementing a resource compiler in Quartus
: so we don't have to use pilrc/pila (which prevents true on-the-go
: software development)? I haven't looked at it too much but it
: doesn't look to be that complicated at first glance. If anybody
: is interested in working on this I would be happy to help out.
```

Have a look at the OnBoard beta product RsrcEdit. It's available at www.individeo.net. It's got a few bugs, but it's usable. I used it to create the resources for Year, and also for the new demo I'm just finishing, Duco. After I created the Year resources, I HotSync'd them down and ran prc2rcp to create YearRsrc.RCP.

Neal

Re: Making MakePRC happy

Posted by [Tony Sanders](#) on November 16, 1998 at 18:10:45:

In Reply to: *Re: (more) Feedback on Year* posted by Neal Bridges on November 16, 1998 at 15:16:58:

Does this work with MakePRC?

```
variable vectored
' foo vectored !

: go
  ['] foo drop \ MakePRC happy?
  vectored @ execute ;
```

The real question being, do the XT's remain the same or are they altered as you build the PRC (which means that vectors cannot be statically initialized, not a big deal, just trying to understand the rules).

```
: go
  ['] foo vectored ! \ MakePRC is happy for sure
  vectored @ execute ;
```

I'm guessing that you are altering XT's as you go, otherwise you would have to have a translation table which would be inelegant.

I would argue against providing '! -- the extra burden on the user to initialize vectors at run-time doesn't seem undo vs. the complexity added by trying to make sure all XT's are translated properly. And unless you want to also provide 'constant and who knows what other functions to be complete your going to have to document this minor limitation anyway. Also consider the problem of:

```
variable vector-if-non-zero
' foo vector-if-non-zero '!

and later in the build process
```

```
0 vector-if-non-zero '||!
```

Now what do you do? I'm not saying that the above example is good style but it's certainly something that shouldn't break the compiler.

Re: Making MakePRC happy

Posted by [Neal Bridges](#) on November 16, 1998 at 23:52:03:

In Reply to: *Re: Making MakePRC happy* posted by Tony Sanders on November 16, 1998 at 18:10:45:

: Does this work with MakePRC?

```
:  
  
:   variable vectored  
:   ' foo vectored !
```

```
:   : go  
:   ['] foo drop \ MakePRC happy?  
:   vectored @ execute ;  
:
```

: The real question being, do the XT's remain the same or are they altered
: as you build the PRC (which means that vectors cannot be statically
: initialized, not a big deal, just trying to understand the rules).

Right now, you need at startup to reinitialize any variables holding xts.

```
:  
  
:   : go  
:   ['] foo vectored ! \ MakePRC is happy for sure  
:   vectored @ execute ;  
:
```

You got it.

: I'm guessing that you are altering XT's as you go, otherwise you would
: have to have a translation table which would be inelegant.

All translation takes place at compile time; the stand-alone PRCs do not have or
require translation tables. All Quartus code is position-independent.

: I would argue against providing '! -- the extra burden on the user to
: initialize vectors at run-time doesn't seem undo vs. the complexity
: added by trying to make sure all XT's are translated properly. And
: unless you want to also provide 'constant and who knows what other
: functions to be complete your going to have to document this minor
: limitation anyway. Also consider the problem of:

[snipped]

There are certainly pathological examples to consider. My key motivation in providing '!' is to make function tables simple. It's not cast in stone though; I'm still considering the best way to handle interpreted '.

Neal

Re: Making MakePRC happy

Posted by [Tony Sanders](#) on November 17, 1998 at 13:16:18:

In Reply to: *Re: Making MakePRC happy* posted by Neal Bridges on November 16, 1998 at 23:52:03:

: My key motivation in
: providing '!' is to make function tables simple.
: I'm still considering the best way to handle interpreted '.

The only workable alternative I see would be have MakePRC work at the source level ("compile this file"). Take a peek at an Open Firmware tokenizer.

However, I have no problem with the way it currently works. Just wanted to make sure I understood what it was doing (and hopefully you can use my questions when you generate the docs).

Re: Making MakePRC happy

Posted by [Neal Bridges](#) on November 17, 1998 at 13:50:58:

In Reply to: *Re: Making MakePRC happy* posted by Tony Sanders on November 17, 1998 at 13:16:18:

: : My key motivation in
: : providing '!' is to make function tables simple.
: : I'm still considering the best way to handle interpreted '

: The only workable alternative I see would be have MakePRC work
: at the source level ("compile this file"). Take a peek at an
: Open Firmware tokenizer.

Because Quartus already generates native 68000 machine-code, MakePRC is basically a recursive-descent code-copier. This keeps it small; the entire module for generating stand-alone PRCs adds only about 1500 bytes of code to the kernel.

: However, I have no problem with the way it currently works.
: Just wanted to make sure I understood what it was doing (and
: hopefully you can use my questions when you generate the docs).

I appreciate the questions; they definitely help with the documentation.

Neal

Older messages have been archived.

Posted by [Neal Bridges](#) on November 13, 1998 at 23:25:52:

I've archive messages older than November 1, 1998... they're available as one large file from the link at the bottom of the message list.

Neal

Year sources now available in the File Area

Posted by [Neal Bridges](#) on November 13, 1998 at 22:23:30:

Check out *YearSrc.zip* in the Quartus File Area. It contains the complete sources to Year.

Post any comments, etc. to this forum. Have fun!

Neal

- [File Area](#)
-

0.8.1B addendum: window-bounds fix

Posted by [Neal Bridges](#) on November 13, 1998 at 19:37:06:

In earlier versions, window-bounds wasn't handled properly. It has been fixed.

Window-bounds is a pointer to 4 cells of memory...

```
topX topY extentX extentY
```

You can change the active area of the screen by modifying these entries.

For instance...

```
100 window-bounds cell+ !
```

-100 window-bounds 3 cells + +!

will make the lower-half of the screen the active region for text output, PAGE, scrolling, etc.

Neal

graphics.TXT updated

Posted by [Neal Bridges](#) on November 12, 1998 at 23:27:34:

I've added cursor-position (-- y x) to *graphics.txt*.
See it in the Quartus File Area.

Neal

- [File Area](#)

Quartus 0.8.1B now available!

Posted by [Neal Bridges](#) on November 12, 1998 at 21:54:33:

Check the Quartus File Area for Quartus 0.8.1B, the latest beta release. The development beta has gone out under separate cover to those of you who are doing development testing-- if you thought you were going to receive it and didn't, let me know.

There are a number of new features; I'll be documenting them via examples over the next few days. The source to *Year* will be posted shortly.

Neal

- [File Area](#)

Updated Events.TXT

Posted by [Neal Bridges](#) on November 12, 1998 at 20:49:22:

I've updated Events.txt in the Quartus File Area with a couple of new words.

Neal

A polished Quartus Forth application!

Posted by [Neal Bridges](#) on November 12, 1998 at 11:36:42:

Have a look at *year.zip* in the Quartus File Area. It's a polished Quartus Forth app, complete with menu and icon, compiled with Quartus D.8.1B (soon to be released in beta).

Year is similar to Dale Gass' *YearCal* program. It has one or two enhancements over his original, and is less than half the size.

I'll be releasing the source after the next beta goes out.

Neal

Re: A polished Quartus Forth application!

Posted by [Matthias Schneider](#) on November 13, 1998 at 04:14:37:

In Reply to: *A polished Quartus Forth application!* posted by Neal Bridges on November 12, 1998 at 11:36:42:

: I'll be releasing the source after the next beta goes out.

: Neal

I'm looking forward to that. The style of this sources will become my goal!

I'm sure you always used 7-10 Words per colon-definition, no globals, factored out anything important, named all magic numbers ... ;-)

Oh, Neal, if you really did, I have to work hard!

Matthias

BTW: It's more important to get a released compiler than a perfect demo-source, so do not look to seriously at my last sentences (Thank God its Friday)!

Re: A polished Quartus Forth application!

Posted by [Neal Bridges](#) on November 13, 1998 at 11:28:03:

In Reply to: *Re: A polished Quartus Forth application!* posted by Matthias Schneider on November 13, 1998 at 04:14:37:

: I'm looking forward to that. The style of this sources will become my goal!
: I'm sure you always used 7-10 Words per colon-definition, no globals, factored
: out anything important, named all magic numbers ... ;-))

Actually the source is very clean. Two globals, but the quantities they represent really are global, and none are used for parameter-passing. All magic numbers are named or commented. I factored for readability. Words are kept short.

: Oh, Neal, if you really did, I have to work hard!

: Matthias

: BTW: It's more important to get a released compiler than a perfect demo-source,

: so do not look to seriously at my last sentences (Thank God its Friday)!

Hehehe. Well, I'm certainly open to comments on the source. I'll put it up today.

Neal



Re: A polished Quartus Forth application!

Posted by [Mark Beckman](#) on November 12, 1998 at 14:33:46:

In Reply to: *A polished Quartus Forth application!* posted by Neal Bridges on November 12, 1998 at 11:36:42:

Looks nice Neal (without seeing the source of course).
The online help refers to the 'week starts' setting in the Preferences. I can't find the Preferences and the help does not clearly state the the preferences are set via the source code. To make the app a little more "polished" the help should indicate the "preferences" are in the source or provide a preferences option on the menu. Other than that it is impressive that this can be done with such a small program.

Mark

: Have a look at *year.zip* in the Quartus File Area. It's a polished
: Quartus Forth app, complete with menu and icon, compiled with Quartus D.8.1B
: (soon to be released in beta).

: Year is similar to Dale Gass' *YearCal* program. It has one
or

: two enhancements over his original, and is less than half the size.

: I'll be releasing the source after the next beta goes out.

: Neal

Re: A polished Quartus Forth application!

Posted by [Neal Bridges](#) on November 12, 1998 at 15:11:45:

In Reply to: *Re: A polished Quartus Forth application!* posted by Mark Beckman on November 12, 1998 at 14:33:46:

: Looks nice Neal (without seeing the source of course).
: The online help refers to the 'week starts' setting in the Preferences. I
: can't find the Preferences and the help does not clearly state the the
: preferences are set via the source code. To make the app a little more
: "polished" the help should indicate the "preferences" are in the source or
: provide a preferences option on the menu. Other than that it is impressive
: that this can be done with such a small program.

Thanks, Mark. By "Preferences" I mean the system Preferences, from the Preferences icon in the Application launcher. The preferences for this app are not set via the source code.

Neal

Re: A polished Quartus Forth application!

Posted by [Mark Beckman](#) on November 12, 1998 at 16:18:57:

In Reply to: *Re: A polished Quartus Forth application!* posted by Neal Bridges on November 12, 1998 at 15:11:45:

: : Looks nice Neal (without seeing the source of course).
: : The online help refers to the 'week starts' setting in the Preferences. I
: : can't find the Preferences and the help does not clearly state the the
: : preferences are set via the source code. To make the app a little more
: : "polished" the help should indicate the "preferences" are in the source or
: : provide a preferences option on the menu. Other than that it is impressive
: : that this can be done with such a small program.

: Thanks, Mark. By "Preferences" I mean the system Preferences, from the
: Preferences icon in the Application launcher. The preferences for this app
are
: not set via the source code.

: Neal
Hey that works great ! Very clever. Once set to my liking I hardly ever
touch the system prefs so I didn't even think of looking there.

LOCALS

Posted by [Tony Sanders](#) on November 11, 1998 at 20:21:29:

Neal Wrote:

>The LOCALS wordset isn't implemented, and it's not high on my list at all. It's
>only one step removed from using global variables to transfer parameters
between
>words, and promotes bad Forth style.

I'll agree that LOCALS might make some programmers lazy about thinking
about how to write their code. But, Forth has never been a language that
cuddled the lazy programmer. Heck, most of Forth promotes bad-Forth style
unless you use it with appropriate caution :)

People that use locals to avoid doing a swap are using them incorrectly.
But there are cases where having a named handle on a stack argument can
make your code more readable and easier to maintain and they are something
that I would like to see added to Quartus. But in any case I don't follow
how you compare them to globals. They certainly have an impact on performace
but they aren't anything like globals (can anyone tell me the difference
between a global and a goto?).

On a side note, implementing locals is kind of interesting. I've come up with
a way to do it without support from the kernel using wordlists to usurp
the compiler and either compile a local if it's in scope or perform the
former compilation semantics of itself.

Here is the basic idea in psuedo-code:

```
: { ( " }" -- )
  also locals
  POSTPONE push-local-frame    \ run-time work
  [char] } parse define-these-locals ; immediate
vocabulary locals definitions
\ create a new local
: (makelocal)
  \ create a word so we can usurp the compiler
  save-wordlists
  locals definitions
  >in @
  create stash-my-name immediate
  restore-wordlists
  does>
    dup in-scope? if compile-value else punt then ;
\ this version of ; is only in locals so it's only
\ used if we called {, that's how we know to pop the frame.
: ; pop-local-frame drop-locals-wordlist POSTPONE ; ; immediate
```

Perhaps others will take these ideas and play around with them some.

Re: LOCALS

Posted by [Neal Bridges](#) on November 11, 1998 at 22:28:33:

In Reply to: *LOCALS* posted by Tony Sanders on November 11, 1998 at 20:21:29:

: People that use locals to avoid doing a swap are using them incorrectly.
: But there are cases where having a named handle on a stack argument can
: make your code more readable and easier to maintain and they are something
: that I would like to see added to Quartus. But in any case I don't follow
: how you compare them to globals. They certainly have an impact on performace
: but they aren't anything like globals (can anyone tell me the difference
: between a global and a goto?).

I was referring to globals (for paramter passing) as bad style, with locals just behind on the bad-style scale.

: On a side note, implementing locals is kind of interesting. I've come up with
: a way to do it without support from the kernel using wordlists to usurp
: the compiler and either compile a local if it's in scope or perform the
: former compilation semantics of itself.

: Here is the basic idea in psuedo-code:
[idea]

It's a clever idea. One difficulty is that definitions can't be nested, so new words can't be created while a definition is in effect... that means something other than CREATE is in order, and some other mechanism than the search-order needs to be used. Also, for a Standard-compliant (LOCAL), the search-order can't be altered to make it work.

It's an irritant; to provide locals is to alter large parts of the interpreter to be 'locals-aware'. Now, non-standard locals with fixed names, that might be easy. I'll think about it.

Neal

Re: LOCALS

Posted by [Tony Sanders](#) on November 12, 1998 at 12:53:47:

In Reply to: *Re: LOCALS* posted by Neal Bridges on November 11, 1998 at 22:28:33:

Well, I wrote a big long reply and then lost it. Basically,

I don't see why you think locals are evil (second to globals). Globals used to pass information are like goto's but locals just give a name to some data and I don't see how that is, a priori, evil.

create works because I only ever create the local once, once it's defined it hangs around forever (which violates the ANS spec but I wasn't implementing the ANS spec :).

However, using a wordlist for locals doesn't violate the spec -- it specifically allows it in fact (it just says that Search-Order words shall not remove the locals wordlist from it's position which means you would need to protect it in the Search-Order words if you wanted to make it compliant).

Finally, I proposed what I think is a better solution to this whole problem. If you treat wordlists as true objects and provide methods for all actions that operate on wordlists (create, find, interpret, compile, etc) then you have a much more powerful concept on which you can implement locals and lots of other things (e.g., you could make a PalmOS wordlist that provides all the hooks to the system calls).

Re: LOCALS

Posted by [Neal Bridges](#) on November 12, 1998 at 14:01:45:

In Reply to: *Re: LOCALS* posted by Tony Sanders on November 12, 1998 at 12:53:47:

: Well, I wrote a big long reply and then lost it. Basically,
: I don't see why you think locals are evil (second to globals). Globals
: used to pass information are like goto's but locals just give a name to
: some data and I don't see how that is, a priori, evil.

The evil comes in to the picture when locals are used as a replacement for good argument ordering, or are used as a crutch to support far too many arguments per word on the stack.

: create works because I only ever create the local once, once it's defined
: it hangs around forever (which violates the ANS spec but I wasn't implementing
: the ANS spec :).

Perhaps I misread your code example; I was under the impression that { was to be executed from within a current definition.

: Finally, I proposed what I think is a better solution to this whole problem.
: If you treat wordlists as true objects and provide methods for all actions
: that operate on wordlists (create, find, interpret, compile, etc) then you
: have a much more powerful concept on which you can implement locals and
: lots of other things (e.g., you could make a PalmOS wordlist that provides
: all the hooks to the system calls).

I like the idea -- in fact I'm already using it. The built-in systraps (WinDrawLine, etc.) are handled as a wordlist that is always at the end of the search-order.

Neal

Re: LOCALS

Posted by [Tony Sanders](#) on November 12, 1998 at 14:32:33:

In Reply to: *Re: LOCALS* posted by Neal Bridges on November 12, 1998 at 14:01:45:

: Perhaps I misread your code example; I was under the impression that { was to
be
: executed from within a current definition.

Ah I see what your saying. Yes, I guess that is a problem :(
To clairify what Neal is saying, take this example:

```
: swapper { a b } b a ;
```

when swapper is being **compiled** { is executed and wants to create words
a and b in the locals wordlist (if needed) but it can't because we're
in the process of compiling swapper and the standard doesn't allow you to have
two definitions going at the same time even though they are in different
wordlists.

: : If you treat wordlists as true objects and provide methods for all actions
: : that operate on wordlists (create, find, interpret, compile, etc) then you
: I like the idea -- in fact I'm already using it. The built-in systraps
: (WinDrawLine, etc.) are handled as a wordlist that is always at the end of the
: search-order.

Is that one of the vectors you had planned on making available?

Re: LOCALS

Posted by [Neal Bridges](#) on November 12, 1998 at 15:14:28:

In Reply to: *Re: LOCALS* posted by Tony Sanders on November 12, 1998 at 14:32:33:

: Is that [interpretation] one of the vectors you had planned on making available?

Yes; as soon as I finish the relocatable vector code I'll make the hook public. I'm also vectoring CR, EMIT, TYPE, and KEY.

Neal

New IDS.TXT in the Quartus File Area

Posted by [Neal Bridges](#) on November 09, 1998 at 22:47:09:

I've updated *ids.txt* in the Quartus File area. It reflects suggestions made by Tony Sanders.

Neal

Status Update

Posted by [Neal Bridges](#) on November 09, 1998 at 15:58:14:

Hi folks. Quartus 0.8.1B (and its development beta, D.8.1B) will be released very shortly, as soon as I finish the example and documentation that shows how to integrate external GUI resources in your compiled applications.

This will be the last major revision of the beta before the release.

Neal

EVENT

Posted by [Jim Hendricks](#) on November 09, 1998 at 15:52:20:

Based on previous discussion on this board, can I assume that EVENT returns a static address?

Re: EVENT

Posted by [Neal Bridges](#) on November 09, 1998 at 15:55:49:

In Reply to: *EVENT* posted by Jim Hendricks on November 09, 1998 at 15:52:20:

: Based on previous discussion on this board, can I assume that EVENT returns a
: static address?

It does.

Neal

Bit Flags

Posted by [Jim Hendricks](#) on November 06, 1998 at 08:36:02:

I have a need to store many flags. The flags will be grouped by doubles. Any suggestions for fast access methods to these flags? I have been trying to think of how to go about creating both set and get methods but all my experience with this has been either through and/or with powers of 2, or with bitshifting a 1 to the proper position prior to and/or. With the powers of 2 approach, I would need a powers word but my math is limited to looping each power and multiplying. The bitshift should also work but I can't seem to think of a way to bitshift a double. Any help would be appreciated.

Jim

Re: Bit Flags

Posted by [Jim Deakin](#) on November 06, 1998 at 12:10:08:

In Reply to: *Bit Flags* posted by Jim Hendricks on November 06, 1998 at 08:36:02:

I know the logical words use cell size values, but wouldn't it be simpler and quicker to treat the double as two single cells, Then use constant powers of two, and work with AND OR and XOR for flag testing and manipulation? Then you can recombine the results if needed afterwards.

Or am I misunderstanding something in your question?

Jim

Re: Bit Flags

Posted by [Jim Hendricks](#) on November 07, 1998 at 19:59:43:

In Reply to: *Re: Bit Flags* posted by Jim Deakin on November 06, 1998 at 12:10:08:

: I know the logical words use cell size values, but wouldn't it be simpler and
: quicker to treat the double as two single cells, Then use constant powers of
: two, and work with AND OR and XOR for flag testing and manipulation? Then you
: can recombine the results if needed afterwards.
: Or am I misunderstanding something in your question?
: Jim

The application I am playing around with programming is the game lights out.
Each level consists of a 5 by 5 grid of buttons. The state (on or off) of
each button are bit encoded, requiring 25 bits (thus saved in a double). I
considered cell level manipulation, but it would then require my words to
detect when asking for bit 16, I am actually asking for bit 0 of the high order
word. If I manipulate as 2 words, I also have to pay attention to the fact
that the words are in reversed order. Since Niel didn't have the chance to get
back to me yet on his idea for a DRSHIFT and DLSHIFT, I used his idea and
looped as many bits as needing testing doing successive d2/ ops. This then
positions the bit in question at bit pos 0, the rest is just and with 1. I
don't know if that is the most efficient way to do it but it does work. Now I
am taking on screen taps... Onward I go...



Re: Bit Flags

Posted by [Erwin Schomburg](#) on November 08, 1998 at 06:01:53:

In Reply to: *Re: Bit Flags* posted by Jim Hendricks on November 07, 1998 at 19:59:43:

: Since Niel didn't have the chance to
get
: back to me yet on his idea for a DRSHIFT and DLSHIFT, I used his idea and
: looped as many bits as needing testing doing successive d2/ ops. This then
: positions the bit in question at bit pos 0, the rest is just and with 1. I
: don't know if that is the most efficient way to do it but it does work. Now I
: am taking on screen taps... Onward I go...

How about using your own creative intelligence? You may not find the "super
solution" in the first run, but something that works for your purpose anytime.
See one possibility below.

/Erwin

```
\ dshift 98.11.08 ERS  
base @ decimal
```

```
: DRSHIFT ( u. n -- u'. )  
  dup 15 > if 16 - rshift  
  swap drop 0 else  
over over rshift >r  
dup >r 16 swap - lshift  
swap r> rshift or r>  
then  
;  
  
: DLSHIFT ( u. n -- u'. )  
  dup 15 > if 16 - swap drop  
  lshift 0 swap else  
dup >r lshift r> swap >r  
dup >r 16 swap - over swap  
rshift swap r> lshift swap  
r> or  
  then  
;  
base !
```

Oops, forgot the code. was: Re: Bit Flags

Posted by [Jim Hendricks](#) on November 09, 1998 at 09:11:05:

In Reply to: *Re: Bit Flags* posted by Erwin Schomburg on November 08, 1998 at 06:01:53:

Sorry, my last post refered to my implementation of Neal's idea's (I finally figured out I was spelling the name wrong)

```
: -ROT ( a b c -- c a b )
rot rot ;
```

```
: DAND ( double double -- dand )
\ rot brings high order words together
\ and them
\ -rot brings low order words together
\ and them
\ swap corrects word order for result
rot and -rot and swap ;
```

```
: DRSHIFT ( double shiftcnt -- double )
begin dup 0 > while \ loop for each shiftcnt
-rot d2/           \ bring double to top, d2/ effective DRSHIFT 1
rot 1-            \ bring shiftcnt to top and decrement
repeat
drop ;           \ eliminate count
```

```
: DGETBIT ( double bit -- flag )
\ shift double so bit is at bit0
\ and with 1 to test
drshift 1. dand d>s ;
```

As you can see, I also included some supporting definitions I created, part of the factoring I am trying to get in the habit.

I realized as I was documenting this that the DGETBIT doesn't need DAND, a DROP of the high order, and an AND of the low order would suffice for DGETBIT purposes, this would also eliminate the need for the final D>S. It was a nice exercise though to come up with my own DAND! Please, feel free to comment on my words since it will hopefully lead me to more understanding and hopefully better development in the future. (Boy, this forth is beginning to get fun!)

Re: Bit Flags

Posted by [Jim Hendricks](#) on November 09, 1998 at 08:48:21:

In Reply to: *Re: Bit Flags* posted by Erwin Schomburg on November 08, 1998 at 06:01:53:

: How about using your own creative intelligence? You may not find the "super
: solution" in the first run, but something that works for your purpose
anytime.

: See one possibility below.

Actually, before posting my question about bit testing, I tried to implement a method similar to your methods(In fact, great job). My problem in implementing was in grabbing the bits being shifted out of the on word and shifted into the next word (in either direction). My brain blocked out the idea of reverse shifting to pick up the extra bits, I guess my focus was too much on the direction of the shift so I failed to see the value in the reverse of the desired direction. Below you will see my implementation of Neil's idea for DRSHIFT and my GETBIT (DLSHIFT and SETBIT are similar enough to not need to post it). Now that I have 2 different approaches to the same problem, it would be interesting to profile the 2 methods and see which has the better performance. The performance test will have to wait for now though since I am trying to learn by developing my simple game that I code for each new language I tackle. Little by little my brain is actually beginning to awaken to the flow of forth (15 years of procedural coding augmented by the last 5 of OOP perversions has the tendancy to cause a state of brain freeze on learning a new way of coding).

Re: Bit Flags

Posted by Erwin on November 09, 1998 at 14:08:05:

In Reply to: *Re: Bit Flags* posted by Jim Hendricks on November 09, 1998 at 08:48:21:

... to cause a state of brain freeze on learning a new way of coding).

Actually its one of the "old" ways of coding to code Forth.

8-)

/Erwin

Re: Bit Flags

Posted by [Jim Hendricks](#) on November 09, 1998 at 15:33:09:

In Reply to: *Re: Bit Flags* posted by Erwin on November 09, 1998 at 14:08:05:

: Actually its one of the "old" ways of coding to code Forth.

: 8-)

OK, so then a personally previously undiscovered but different way.

Re: Bit Flags

Posted by [Neal Bridges](#) on November 06, 1998 at 10:49:28:

In Reply to: *Bit Flags* posted by Jim Hendricks on November 06, 1998 at 08:36:02:

: I have a need to store many flags. The flags will be grouped by doubles. Any
: suggestions for fast access methods to these flags? I have been trying to
: think of how to go about creating both set and get methods but all my
: experience with this has been either through and/or with powers of 2, or with
: bitshifting a 1 to the proper position prior to and/or. With the powers of 2
: approach, I would need a powers word but my math is limited to looping each
: power and multiplying. The bitshift should also work but I can't seem to
think
: of a way to bitshift a double. Any help would be appreciated.

: Jim

D2* and D2/ will bitshift a double one bit in either direction. Larger
bitshifts are not a big deal; would you like DLSHIFT and DRSHIFT?

Neal



Re: Bit Flags

Posted by [Jim Hendricks](#) on November 06, 1998 at 11:08:36:

In Reply to: *Re: Bit Flags* posted by Neal Bridges on November 06, 1998 at 10:49:28:

: D2* and D2/ will bitshift a double one bit in either direction. Larger
: bitshifts are not a big deal; would you like DLSHIFT and DRSHIFT?

If you have a DLSHIFT and a DRSHIFT, that would be appreciated. If I were to
just use D2* and D2/ then I would have to loop times to get the
shift I need. This puts me in the same boat as if I were to code my own Powers
word.

Jim

PAGE and form 1000

Posted by [Jim Hendricks](#) on November 05, 1998 at 10:48:57:

I realize that form 1000 has the shift state indicator at the bottom but I noticed that if I draw anything to form 1000 that draws within the last line, PAGE does not erase those drawings. If I use form 1001, since the shift state is not present, PAGE does erase those drawings. I will probably use form 1001 since I don't need the shift state indicator for what I am playing with but I wanted to find out if the behaviour for PAGE on form 1000 is true to form for the PAGE word, or if the behaviour is dictated by pilots shift state indicator.

Also, my understanding of form 1000 and 1001 from a previous discussion on this board is that 1000 has a title and shift state indicator, 1001 has neither. In form 1000, how do I activate the title? I am also interested in a form with a title with no shift indicator, is this currently doable?

Thanks.

Re: PAGE and form 1000

Posted by [Neal Bridges](#) on November 05, 1998 at 12:16:21:

In Reply to: *PAGE and form 1000* posted by Jim Hendricks on November 05, 1998 at 10:48:57:

: I realize that form 1000 has the shift state indicator at the bottom but I
: noticed that if I draw anything to form 1000 that draws within the last line,
: PAGE does not erase those drawings. If I use form 1001, since the shift state
: is not present, PAGE does erase those drawings. I will probably use form 1001
: since I don't need the shift state indicator for what I am playing with but I
: wanted to find out if the behaviour for PAGE on form 1000 is true to form for
: the PAGE word, or if the behaviour is dictated by pilots shift state
indicator.

If you want to clear the whole screen including the shift-state-area, use
WinEraseWindow.

: Also, my understanding of form 1000 and 1001 from a previous discussion on
this
: board is that 1000 has a title and shift state indicator, 1001 has neither.
In
: form 1000, how do I activate the title? I am also interested in a form with a
: title with no shift indicator, is this currently doable?

1000 has no title, neither does 1001. I can add a titled form in the next
beta; in the meantime you can externally compile your own resource and open it
from within your program.

Neal

Re: PAGE and form 1000

Posted by [Jim Hendricks](#) on November 05, 1998 at 13:31:19:

In Reply to: *Re: PAGE and form 1000* posted by Neal Bridges on November 05, 1998 at 12:16:21:

: If you want to clear the whole screen including the shift-state-area, use
: WinEraseWindow.

Thanks.

: 1000 has no title, neither does 1001. I can add a titled form in the next
: beta; in the meantime you can externally compile your own resource and open
it
: from within your program.

I assume then that there is no way to dynamically add a title or the shift
state indicator to an existing form?

Jim

Re: PAGE and form 1000

Posted by [Neal Bridges](#) on November 05, 1998 at 15:06:05:

In Reply to: *Re: PAGE and form 1000* posted by Jim Hendricks on November 05, 1998 at 13:31:19:

: I assume then that there is no way to dynamically add a title or the shift
: state indicator to an existing form?

Nothing simple, certainly -- not for the title. There are ways to add a shift
state indicator to an existing form, but nothing that's as simple as making a
new form with the attributes you desire.

Neal

Re: PAGE and form 1000

Posted by [Erwin Schomburg](#) on November 05, 1998 at 14:51:01:

In Reply to: *Re: PAGE and form 1000* posted by Jim Hendricks on November 05, 1998 at 13:31:19:

: : If you want to clear the whole screen including the shift-state-area, use
: : WinEraseWindow.

: Thanks.

: : 1000 has no title, neither does 1001. I can add a titled form in the next
: : beta; in the meantime you can externally compile your own resource and open
: : it
: : from within your program.

: I assume then that there is no way to dynamically add a title or the shift
: state indicator to an existing form?

: Jim

One can always twiddle with OnBoard's Resourceditor. Not recommended, but a Q&D patchup if desperate (this is how I made EisBär .prc have a custom icon, both large and small).

/Erwin

New Doc and Include-Doc

Posted by [Erwin Schomburg](#) on November 03, 1998 at 12:11:19:

After some headbanging and problem consultation with Neal

(First Doc module pollutes dataspace with 4k buffer)
(First Memory module is unsafe due to an OS glitch)
a new Doc/Include-Doc (also supports Needs-Doc) utilizing a
memory chunk buffer besides Quartus dataspace is completed.
If there is positive feedback (i.e. an "I want it" here), I'll
send it to Neal for the file area.

/Erwin

Re: New Doc and Include-Doc

Posted by [Neal Bridges](#) on November 03, 1998 at 12:22:47:

In Reply to: *New Doc and Include-Doc* posted by Erwin Schomburg on November 03, 1998
at 12:11:19:

: After some headbanging and problem consultation with Neal
: (First Doc module pollutes dataspace with 4k buffer)
: (First Memory module is unsafe due to an OS glitch)
: a new Doc/Include-Doc (also supports Needs-Doc) utilizing a
: memory chunk buffer besides Quartus dataspace is completed.
: If there is positive feedback (i.e. an "I want it" here), I'll
: send it to Neal for the file area.

Hey, Erwin, I want it. Send it to me, I can be your first tester.

Neal

Re: New Doc and Include-Doc

Posted by Erwin on November 03, 1998 at 13:16:59:

In Reply to: *Re: New Doc and Include-Doc* posted by Neal Bridges on November 03, 1998 at 12:22:47:

: Hey, Erwin, I want it. Send it to me, I can be your first tester.

: Neal

Watch ya mailbox

/Erwin

Stack control

Posted by [Jim Hendricks](#) on November 03, 1998 at 08:33:33:

As a beginner Forther, I finally decided to write some code. I am attempting to replicate the boxes that Erwin created for his dice for Eisbaer. The only difference is I wish to pass as parameters the x, y, and size (I plan on fixed rounded corners as well as make it a square). I realize that the following code has some bugs in it yet, what I am primarily looking for though is a way to stream line the stack manipulation. The 3 stack parms passed are needed twice, once for painting the black box, 2nd for painting the internal white box that hollows out the black box. I am using Erwin's i-rounded-rectangle routine found in his i-graphics package for drawing the white box. Well, here's the code:

```
:onbutton ( x y size -- )
dup >r dup 2swap 2dup >r >r
7 rounded-rectangle
r> 1 + r> 1 + r> 2 - dup 2swap 7
i-rounded-rectangle ;
```

Any suggestions to improve the routine, or the stack manipulations would be

appreciated, they can only help to improve my understanding of Forth vice just having a knowledge of Forth. Thanks.

Re: Stack control

Posted by [Neal Bridges](#) on November 03, 1998 at 10:36:34:

In Reply to: *Stack control* posted by Jim Hendricks on November 03, 1998 at 08:33:33:

```
: :onbutton ( x y size -- )
: dup >r dup 2swap 2dup >r >r
: 7 rounded-rectangle
: r> 1 + r> 1 + r> 2 - dup 2swap 7
: i-rounded-rectangle ;
```

: Any suggestions to improve the routine, or the stack manipulations would be appreciated, they can only help to improve my understanding of Forth vice just having a knowledge of Forth. Thanks.

First step, re-order your arguments -- rounded-rectangle takes (... y x ...).

Second step: stop using the return stack. It's not required for this example.

Third: define a couple of helper words for readability.

Fourth: name magic numbers.

Sixth: add comments.

```
: 4dup ( a b c d -- a b c d a b c d )
  2over 2over ;

: yx+1 ( y x -- y+1 x+1 )
  1+ swap 1+ swap ;

\ Radius of the onbutton corners:
7 constant corner-radius

\ Draw a square frame with rounded corners:
: onbutton ( y x size -- )
\ Draw a solid square:
  dup 4dup 2swap ( y x size size size size y x )
  corner-radius rounded-rectangle ( y x size size )
```

```
\ Erase a smaller square inside:  
  drop 2 - dup 2swap yx+1      ( size-2 size-2 y+1 x+1 )  
  corner-radius i-rounded-rectangle ( -- )  
;
```

Neal

Re: Stack control

Posted by [Jim Hendricks](#) on November 03, 1998 at 11:14:18:

In Reply to: *Re: Stack control* posted by Neal Bridges on November 03, 1998 at 10:36:34:

: First step, re-order your arguments -- rounded-rectangle takes (... y x ...).

My original started with y and somewhere or other the x and y got reversed on me, this was the bug I referred to in my first post. Instead of fixing the bug, since I was looking more for stack manipulation, I just changed the word definition comment to reflect the what I was actually getting.

: Second step: stop using the return stack. It's not required for this example.

I agree, I just couldn't see how to dup the three items on the stack. Your approach by padding the stack with size twice prior to dup of the items shows how I don't have the stack mentality yet, the size twice seems to be a nice approach even if I didn't need the second size item (in fact, your process does drop the second size item when manipulating the items prior to the i-rounded-rectangle). I also missed the 2over in the docs (RTFM! ;)).

: Third: define a couple of helper words for readability.

I see how readability is improved, question is doesn't the extra definitions add overhead? In this example, overhead is not necessarily an issue, but in a full blown app, on a small platform like the pilot, I would assume that overhead should always be a major consideration.

: Fourth: name magic numbers.

Same comment as #3

: Sixth: add comments.

OK, I am a REAL programmer, comments are for sissy's! Just Kidding, this advice is constantly dispensed, to often never heeded, what is it about us programmers that compels us to avoid comments?

Thanks for the implementation, it has been a learning experience!

```
:  
  
: : 4dup ( a b c d -- a b c d a b c d )  
:   2over 2over ;  
  
: : yx+1 ( y x -- y+1 x+1 )  
:   1+ swap 1+ swap ;  
  
: \ Radius of the onbutton corners:  
: 7 constant corner-radius  
  
: \ Draw a square frame with rounded corners:  
: : onbutton ( y x size -- )  
: \ Draw a solid square:  
:   dup 4dup 2swap                ( y x size size size size y x )  
:   corner-radius rounded-rectangle ( y x size size )  
: \ Erase a smaller square inside:  
:   drop 2 - dup 2swap yx+1      ( size-2 size-2 y+1 x+1 )  
:   corner-radius i-rounded-rectangle ( -- )  
: ;  
:  
  
: Neal
```

Re: Stack control

Posted by [Neal Bridges](#) on November 03, 1998 at 12:22:01:

In Reply to: *Re: Stack control* posted by Jim Hendricks on November 03, 1998 at 11:14:18:

```
: : Third: define a couple of helper words for readability.  
: I see how readablilty is improved, question is doesn't the extra definitions  
: add overhead? In this example, overhead is not necessarily an issue, but in a
```

: full blown app, on a small platform like the pilot, I would assume that
: overhead should always be a major consideration.

Implement first, optimize last. Code not inside loops probably never needs
optimization. If you found this code was too slow, making 4dup and yx+1 INLINE
would do the trick.

: : Fourth: name magic numbers.

: Same comment as #3

CONSTANTS don't have any overhead in Quartus.

Neal

Re: Stack control

Posted by [Erwin Schomburg](#) on November 03, 1998 at 13:28:17:

In Reply to: *Re: Stack control* posted by Neal Bridges on November 03, 1998 at
12:22:01:

: CONSTANTS don't have any overhead in Quartus.

: Neal

Read: Not more overhead than putting a literal on stack. Only a formality, not
trying to diminish the great efforts towards optimisation.

/Erwin

Re: Stack control

Posted by [Neal Bridges](#) on November 03, 1998 at 16:03:49:

In Reply to: *Re: Stack control* posted by Erwin Schomburg on November 03, 1998 at 13:28:17:

: : CONSTANTs don't have any overhead in Quartus.

: : Neal

: Read: Not more overhead than putting a literal on stack. Only a formality, not
: trying to diminish the great efforts towards optimisation.

Right, this is what I'm saying.

: seven 7 ;

7 constant VII

: new-seven VII ;

seven and new-seven have exactly the same execution
time.

Neal



Quartus Discussion Forum messages from before November 1, 1998

[Return to the Quartus Discussion Forum](#)

ids refinement

Posted by [Tony Sanders](#) on October 30, 1998 at 12:11:02:

I factored out the parsing part and created [id] which compiles id's as literals:

```
: rose ... [id] 0100 ... ;
```

users can also say:

```
(id) 0100 2constant my-id
```

in case they didn't want to redefine 0100

In a multi-threaded implementation pad can be per-thread which makes using it for temporary storage reentrant.

changed MOVE to CMOVE as addresses to MOVE should be word aligned and the source address in this case is only caddr.

Finally, I updated the stack effect comments to show that leading spaces are ignored. I like the ; to separate the input stream from the real stack effects but feel free to adopt this to whatever conventions you use.

```
----- cut here -----  
\ ids 98.6.9 4:50 pm NAB / TS  
  
\ Creates a 32-bit constant  
\ equiv. to 4-character text:  
\ ID MYID  
needs core-ext  
  
: (ID) ( "cccc" ; -- id. )  
parse-word drop  
\ move to word aligned for 2@  
pad 2 cells cmove pad 2@ ;  
  
: ID ( "cccc" ; -- )  
>in @ (ID) rot >in ! 2constant ;  
  
: [ID] ( "cccc" ; - )  
( runtime: - id. )  
(ID) postpone 2literal ; immediate
```

Re: ids refinement

Posted by [Neal Bridges](#) on October 30, 1998 at 13:21:02:

In Reply to: *ids refinement* posted by Tony Sanders on October 30, 1998 at 12:11:02:

Good work. I assume you've implemented CMOVE yourself.

Neal

Re: ids refinement

Posted by [Tony Sanders](#) on October 30, 1998 at 15:40:49:

In Reply to: *Re: ids refinement* posted by Neal Bridges on October 30, 1998 at 13:21:02:

> Good work. I assume you've implemented CMOVE yourself.

O'course, it's in my string (which I will post when I'm done).

```
needs core-ext
```

```
needs toolkit
```

```
: cmove ( src dst u - )
```

```
bounds ?do dup c@ i c! 1+ loop drop ;
```

I guess I'm kind of wishing that core-ext and string were part of the Quartus kernel :)

Real apps seem hard.

Posted by [Mike Wilson](#) on October 30, 1998 at 11:52:55:

Ok. So I've looked at the developer's kit, and I've looked at the words that Quartus provides, and sure enough, it seems like it would be possible to build a "real" (i.e. menus, forms, etc.) Pilot app using Quartus, but it still seems like I'm missing some important information...

- How do I bash/replace the Quartus menus?
- How do I get new forms associated with my Quartus app?
- Do I screw up Quartus if I build a new event loop?
- How do I handle launch codes(so I can build apps that support global find and beaming)?
- How can I write callbacks so I can do low-level IrDA stuff?
- etc.

As you can probably tell from the questions, I'm not (yet) a Pilot developer, but that's the problem: I **want** to develop for the Pilot *_using_Quartus_*, but I haven't got a "cookbook" to show me how. I've been programming in Forth since the late '70s and Quartus seems like **exactly** what I'm looking for (yes, I pay for shareware). The problem is, I need to be able to build a standard Pilot app, which is indistinguishable from those built using the C SDK. Basically, I have to know that there are no limitations (other than maybe codespace size) inherent in using Quartus.

I took a look at the source code for Lines!, but if it anything it only made me less confident that doing real apps with Quartus is possible. Taking over the entire screen and just painting everything by hand is not going to be good enough.

What I would really like would be a complete translation to Quartus of one of the standard source examples that come with the C SDK. Even better would be this, plus documentation describing the full process (resource editing, etc.) that was required to build the Quartus version.

Anyway, I've ranted enough for now. My last point: I really do think that the lack of an example like the one I described is holding back the acceptance of Quartus. I would fix the problem if I could, but I don't have the skills.

Thanks,
Mike Wilson

Re: Real apps seem hard.

Posted by [Neal Bridges](#) on October 30, 1998 at 13:39:37:

In Reply to: *Real apps seem hard.* posted by Mike Wilson on October 30, 1998 at 11:52:55:

: Ok. So I've looked at the developer's kit, and I've looked at the words that
: Quartus provides, and sure enough, it seems like it would be possible to build
: a "real" (i.e. menus, forms, etc.) Pilot app using Quartus, but it still seems
: like I'm missing some important information...

You are missing important information; that's what I'm currently working on.

It is possible to use external resources in Quartus applications -- simply code up an RCP, and compile it with PilRC and Pila into a resource database. Then hotsync it into the Pilot. I'll be providing step-by-step on this soon.

After you've done that, it's a matter of opening the database in your application. Here's an example of accessing and drawing a bitmap with an id of 2000 from a resource database with a creator/type of demo/rsrc:

```
needs DataMgr
needs ids
```

ID demo ID rsrc ID Tbmp

DmModeReadOnly demo rsrc DmOpenDatabaseByTypeCreator

2000 Tbmp DmGetResource

2dup MemHandleLock

0 0 2swap WinDrawBitmap

2dup MemHandleUnlock throw

DmReleaseResource throw

DmCloseDatabase throw \ not strictly necessary to close it here

This business of opening and closing the database is only required when using Quartus to develop the application; I'm providing COPYRSRC and DELRSRC commands for stand-alone compilation... these words will let you copy resources from other databases directly into your compiled application.

: - How do I bash/replace the Quartus menus?

: - How do I get new forms associated with my Quartus app?

Similar technique to that provided above.

: - Do I screw up Quartus if I build a new event loop?

No, you should be fine-- but be sure to let Quartus handle AppStop events. I'd advise against building a new event loop, but if you've got a good reason to do it, there aren't any obstacles.

: - How do I handle launch codes(so I can build apps that support global find and

: beaming)?

I'll be providing a vector for this in the release.

: - How can I write callbacks so I can do low-level IrDA stuff?

: - etc.

CALLBACK and END-CALLBACK are there now, but don't put too much weight on them yet, they're still in development.

: As you can probably tell from the questions, I'm not (yet) a Pilot developer, but that's the problem: I *want* to develop for the Pilot using Quartus, but I haven't got a "cookbook" to show me how. I've been programming in Forth since the late '70s and Quartus seems like *exactly* what I'm looking for (yes, I pay

: for shareware). The problem is, I need to be able to build a standard Pilot app, which is indistinguishable from those built using the C SDK. Basically, I have to know that there are no limitations (other than maybe codespace size) inherent in using Quartus.

There are no inherent limitations. Your goal is the same as mine; the production of apps indistinguishable from apps generated by the C SDK.

: I took a look at the source code for Lines!, but if it anything it only made me

: less confident that doing real apps with Quartus is possible. Taking over the entire screen and just painting everything by hand is not going to be good enough.

Matthias did some good work with the tools provided. I'm writing new tools as we speak.

: What I would really like would be a complete translation to Quartus of one of
: the standard source examples that come with the C SDK. Even better would be
: this, plus documentation describing the full process (resource editing, etc.)
: that was required to build the Quartus version.

That's my goal. It's in progress as we speak.

: Anyway, I've ranted enough for now. My last point: I really do think that the
: lack of an example like the one I described is holding back the acceptance of
: Quartus. I would fix the problem if I could, but I don't have the skills.

During this beta phase, I'm glad there isn't a huge crowd at the gates-- I'm busy enough managing the feedback I'm getting now!

I really appreciate the feedback; your interests are directly in line with mine, and you'll be seeing some interesting developments soon.

: Thanks,
: Mike Wilson

Thank you!

Neal

Memory at large, film at FFFF00C

Posted by [Tony Sanders](#) on October 28, 1998 at 18:56:20:

How do you access absolute memory? I can't seem to get the magic words in the right order. Here is what I thought I needed to do:

```
\ Fetch DragonBall 16-bit ID Register  
hex 0FFFF.F00C @a .
```

which causes the emulator to complain: Read from CPU regs, then Illegal Operation/Bus Error, then reset.

I found >abs but my understanding is that it converts Quartus relative offsets to absolute addresses (for passing into systraps like in the UserName example).

Or maybe the emulator doesn't support that register (I'm one of those unfortunate souls to have ordered from shopping.com, sigh).

Re: Memory at large, film at FFFFF00C

Posted by [Neal Bridges](#) on October 28, 1998 at 22:27:31:

In Reply to: *Memory at large, film at FFFFF00C* posted by Tony Sanders on October 28, 1998 at 18:56:20:

: How do you access absolute memory? I can't seem to get
: the magic words in the right order. Here is what I thought
: I needed to do:

```
: \ Fetch DragonBall 16-bit ID Register  
: hex 0FFFF.F00C @a .
```

: which causes the emulator to complain: Read from CPU regs, then
: Illegal Operation/Bus Error, then reset.

: I found >abs but my understanding is that it converts Quartus
: relative offsets to absolute addresses (for passing into systraps
: like in the UserName example).

: Or maybe the emulator doesn't support that register (I'm one of
: those unfortunate souls to have ordered from shopping.com, sigh).

It's the emulator that's causing that error. Just ran it on my Palm III --
returns 3330 (hex).

Neal

OOP again !

Posted by [Christian W. Althausen](#) on October 27, 1998 at 14:32:29:

Since OOP is hot again and there is ALLOT (I can't control my mind anymore)of
interest in CREAT and DOES> it would be nice if you PROs help us BEGINNERS with
this:

From: Bernd Paysan

```
: METHOD ( m v -- m' v ) CREATE OVER , SWAP CELL+ SWAP  
DOES> ( ... o -- ... ) @ OVER @ + @ EXECUTE ;  
: VAR ( m v size -- m v' ) CREATE OVER , +  
DOES> ( o -- addr ) @ + ;  
: CLASS ( class -- class methods vars ) DUP 2@ ;  
: END-CLASS ( class methods vars -- )  
CREATE HERE >R , DUP , 0 ?DO ['] NOOP , LOOP  
CELL+ DUP CELL+ SWAP @ 2 - CELLS R> 2 CELLS + SWAP MOVE ;  
: DEFINES ( xt class -- ) ' >BODY @ + ! ;  
: NEW ( class -- o ) HERE SWAP DUP , @ 1 CELLS - ALLOT ;  
: :: ( class "name" -- ) ' >BODY @ + @ COMPILE, ;
```

```
CREATE OBJECT 1 CELLS , 2 CELLS ,
```

Questions:

- what is the use OBJECT created at the end ?
- Is it worth using this ?
- I still can't understand what COMPILE (and POSTPONE) do.

Tanks,

chris

Re: OOP again !

Posted by [Neal Bridges](#) on October 27, 1998 at 15:35:19:

In Reply to: *OOP again !* posted by Christian W. Althausen on October 27, 1998 at 14:32:29:

: Since OOP is hot again and there is ALLOT (I can't control my mind anymore)of
: interest in CREAT and DOES> it would be nice if you PROs help us BEGINNERS
with

: this:

:
: From: Bernd Paysan

```
: : METHOD ( m v -- m' v ) CREATE OVER , SWAP CELL+ SWAP  
: DOES> ( ... o -- ... ) @ OVER @ + @ EXECUTE ;  
: : VAR ( m v size -- m v' ) CREATE OVER , +  
: DOES> ( o -- addr ) @ + ;  
: : CLASS ( class -- class methods vars ) DUP 2@ ;  
: : END-CLASS ( class methods vars -- )  
: CREATE HERE >R , DUP , 0 ?DO ['] NOOP , LOOP  
: CELL+ DUP CELL+ SWAP @ 2 - CELLS R> 2 CELLS + SWAP MOVE ;  
: : DEFINES ( xt class -- ) ' >BODY @ + ! ;  
: : NEW ( class -- o ) HERE SWAP DUP , @ 1 CELLS - ALLOT ;  
: : :: ( class "name" -- ) ' >BODY @ + @ COMPILE, ;  
: CREATE OBJECT 1 CELLS , 2 CELLS ,
```

:
: Questions:

- : - what is the use OBJECT created at the end ?
- : - Is it worth using this ?
- : - I still can't understand what COMPILE (and POSTPONE) do.

OBJECT is a default class. Is it worth using this? I never have; I think Bernd intended it as a proof-of-concept for an OOP implementation. It does work, though.

As to COMPILE, and POSTPONE ...

```
\ COMPILE, takes an XT and compiles it:  
: compile-dup ['] dup compile, ; immediate  
  
\ This is the same as : test 3 dup * . ;  
: test 3 compile-dup * . ;  
  
test 9 ok
```

```
\ POSTPONE compiles the compilation semantics of a word into the current  
\ definition:  
\ This works the same as IF:  
: new-if postpone if ; immediate
```

Neal

where is CASE ?

Posted by [Christian W. Althausen](#) on October 27, 1998 at 05:33:27:

Isn't case defined as a core word in Quartus ? If no how can I define it ? I know it's a word that leads to large amounts of words, but it seems to be appropriate for message dispatching and other event handling routines.

By the way Neal, I have a "code-is-a-trash-but-work" program that uses a graphical interface to create the definition to a Quartus on-the-fly bitmap, can I upload it to you so you can make it public ?

Tanks,

chris

Re: where is CASE ?

Posted by [Erwin Schomburg](#) on October 27, 1998 at 05:53:31:

In Reply to: *where is CASE ?* posted by Christian W. Althausen on October 27, 1998 at 05:33:27:

```
: Isn't case defined as a core word in Quartus ? If no how can I define it ? I  
: know it's a word that leads to large amounts of words, but it seems to be  
: appropriate for message dispatching and other event handling routines.
```

```
: By the way Neal, I have a "code-is-a-trash-but-work" program that uses a  
: graphical interface to create the definition to a Quartus on-the-fly bitmap,  
can
```

```
: I upload it to you so you can make it public ?
```

```
: Tanks,
```

: chris

If you must, there is a CASE implementation sample in the Standard (a copy of this sample Neal has in the PilotForth examples section of file area).

/Erwin

ALLOT

Posted by [Jim Hendricks](#) on October 26, 1998 at 17:14:58:

What is the default storage of ALLOT, chars or cells. I ask because I see in different samples both 5 CELLS ALLOT and 5 ALLOT.

Also, and idea, in order to keep from bogging down the Quartus discussion board with FORTH questions and allowing the discussion board to be filled with Quartus specific questions, would a FORTH discussion board be possible? I ask only because with the volume of beginner questions I have been generating, I don't want to upset the Forth educated users of the discussion board with having to plod through stupid beginner questions in order to find out the latest statuses of Quartus. Just a thought.

Jim

Re: ALLOT

Posted by [Erwin Schomburg](#) on October 27, 1998 at 01:51:50:

In Reply to: *ALLOT* posted by Jim Hendricks on October 26, 1998 at 17:14:58:

: Also, and idea, in order to keep from bogging down the Quartus discussion board

: with FORTH questions and allowing the discussion board to be filled with
: Quartus specific questions, would a FORTH discussion board be possible? I ask
: only because with the volume of beginner questions I have been generating, I
: don't want to upset the Forth educated users of the discussion board with
: having to plod through stupid beginner questions in order to find out the
: latest statuses of Quartus. Just a thought.

: Jim

Don't you dare go away, where should us wisecracks else go and pour our wisdom over you then? 8-)

/Erwin

Alive! was Re: ALLOT

Posted by [Jim Hendricks](#) on October 27, 1998 at 08:19:56:

In Reply to: Re: ALLOT posted by Erwin Schomburg on October 27, 1998 at 01:51:50:

: Don't you dare go away, where should us wisecracks else go and pour our wisdom
: over you then? 8-)

IMHO, the discussion board did seem pretty slow before I came along. I just figured hey, there's this discussion board, I desire to learn this new product and lang, give it a shot. If no one desires to share their wealth of experience and expertise, then I learn on my own. But if the discussions begin... Sharing, that's what it's all about. Granted, we each have our own motivations beyond sharing, mine happens to be a mix of a desire to make money with the skills I have as well as enjoy being a hack on a host of systems. My hack side loves to share!

Re: ALLOT

Posted by [Neal Bridges](#) on October 26, 1998 at 17:39:11:

In Reply to: ALLOT posted by Jim Hendricks on October 26, 1998 at 17:14:58:

: What is the default storage of ALLOT, chars or cells. I ask because I see in
: different samples both 5 CELLS ALLOT and 5 ALLOT.

6.1.0710 ALLOT CORE

(n --)

If n is greater than zero, reserve n address units of data space.

...

As you can see from the Standard, ALLOT works in address units. In Quartus, chars are the same size as address units.

: Also, and idea, in order to keep from bogging down the Quartus discussion board
: with FORTH questions and allowing the discussion board to be filled with
: Quartus specific questions, would a FORTH discussion board be possible? I ask
: only because with the volume of beginner questions I have been generating, I
: don't want to upset the Forth educated users of the discussion board with
: having to plod through stupid beginner questions in order to find out the
: latest statuses of Quartus. Just a thought.

Questions here are fine by me. I always make sure to identify status messages with informative titles.

I actually created a DejaNews group months ago for use as a discussion forum,

but no one has ever used it.

Neal

Re: ALLOT

Posted by [Jim Hendricks](#) on October 26, 1998 at 20:49:10:

In Reply to: *Re: ALLOT* posted by Neal Bridges on October 26, 1998 at 17:39:11:

```
: 6.1.0710 ALLOT CORE
: ( n -- )
: If n is greater than zero, reserve n address units of data space.
: ...
```

```
: As you can see from the Standard, ALLOT works in address units. In Quartus,
: chars are the same size as address units.
```

I would assume then that the size of address units is implementation specific which means if you are writing code you expect to run on another version of Forth, it would be advisable to work with forced char to ensure the same functionality on both platforms.

Re: ALLOT

Posted by [Neal Bridges](#) on October 26, 1998 at 21:16:19:

In Reply to: *Re: ALLOT* posted by Jim Hendricks on October 26, 1998 at 20:49:10:

```
: : 6.1.0710 ALLOT CORE
: : ( n -- )
: : If n is greater than zero, reserve n address units of data space.
: : ...
```

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: : As you can see from the Standard, ALLOT works in address units. In Quartus,
: : chars are the same size as address units.
```

```
: I would assume then that the size of address units is implementation specific
: which means if you are writing code you expect to run on another version of
: Forth, it would be advisable to work with forced char to ensure the same
: functionality on both platforms.
```

Address units are always at least 8 bits wide, but the size of a CHAR can certainly vary from platform to platform. In Quartus, CHARS is a null operation, on another system, it might be equivalent to 2*.

Neal

Re: ALLOT

Posted by [Jim Hendricks](#) on October 27, 1998 at 08:23:53:

In Reply to: *Re: ALLOT* posted by Neal Bridges on October 26, 1998 at 21:16:19:

: Address units are always at least 8 bits wide, but the size of a CHAR can
: certainly vary from platform to platform. In Quartus, CHARS is a null
: operation, on another system, it might be equivalent to 2*.

So basically when dealing with allocations, If platform portability is
required, one must be very careful to write code that shoots for the lowest
common denominator.

Re: ALLOT

Posted by [Neal Bridges](#) on October 27, 1998 at 09:30:12:

In Reply to: *Re: ALLOT* posted by Jim Hendricks on October 27, 1998 at 08:23:53:

: : Address units are always at least 8 bits wide, but the size of a CHAR can
: : certainly vary from platform to platform. In Quartus, CHARS is a null
: : operation, on another system, it might be equivalent to 2*.

: So basically when dealing with allocations, If platform portability is
: required, one must be very careful to write code that shoots for the lowest
: common denominator.

Actually, for portability, you just need to use CHARS and CELLS, and CHAR+ and
CELL+ (rather than 1+ and 2 +).

Neal

Re: ALLOT

Posted by [Jim Deakin](#) on October 28, 1998 at 09:50:27:

In Reply to: *Re: ALLOT* posted by Neal Bridges on October 27, 1998 at 09:30:12:

: : : Address units are always at least 8 bits wide, but the size of a CHAR can
: : : certainly vary from platform to platform. In Quartus, CHARS is a null
: : : operation, on another system, it might be equivalent to 2*.

: : So basically when dealing with allocations, If platform portability is
: : required, one must be very careful to write code that shoots for the lowest

: : common denominator.

: Actually, for portability, you just need to use CHARS and CELLS, and CHAR+ and
: CELL+ (rather than 1+ and 2 +).

If you have a processor where word and long values can only come from even-numbered addresses (as we do :-), you'd have to use ALIGN before you could use @ from within an allocation, I assume. Does Allot do an align, before assigning its space? or if you design a multi-field data structure is there a nice syntax anyone has worked out to make portability painless?

Jim

Re: ALLOT

Posted by [Neal Bridges](#) on October 28, 1998 at 14:17:50:

In Reply to: *Re: ALLOT* posted by Jim Deakin on October 28, 1998 at 09:50:27:

: If you have a processor where word and long values can only come from
: even-numbered addresses (as we do :-), you'd have to use ALIGN before you
: could use @ from within an allocation, I assume. Does Allot do an align,
before
: assigning its space? or if you design a multi-field data structure is there a
: nice syntax anyone has worked out to make portability painless?

From the Standard:

6.1.0710 ALLOT CORE

(n --)

If n is greater than zero, reserve n address units of data space. If n is less than zero, release |n| address units of data space. If n is zero, leave the data-space pointer unchanged.

If the data-space pointer is aligned and n is a multiple of the size of a cell when ALLOT begins execution, it will remain aligned when ALLOT finishes execution.

If the data-space pointer is character aligned and n is a multiple of the size of a character when ALLOT begins execution, it will remain character aligned when ALLOT finishes execution.

See: 3.3.3 Data space.

So ALLOT does not pre-align the data-space pointer. For portability as relates to multi-field data structures, I'd make a system-specific prologue:

```
: bytes chars ; \ for Quartus. Another system might define bytes differently.  
: short 2 bytes ;  
: long 4 bytes ;
```

and so forth. Portability in this instance is as it is with C; each native data type is guaranteed to be at least a certain number of bits wide, but may well be

wider. When trying for binary-level portability of data structures, you also have handle big- and little-endian data storage issues.

Neal

Re: ALLOT

Posted by [Jim Hendricks](#) on October 27, 1998 at 09:51:40:

In Reply to: *Re: ALLOT* posted by Neal Bridges on October 27, 1998 at 09:30:12:

: Actually, for portability, you just need to use CHARS and CELLS, and CHAR+
: and
: CELL+ (rather than 1+ and 2 +).

I see. But what about the ranges covered by a CHAR and a CELL? Depending on the physical size, would that not affect the range of info that can be stored?

Jim

Re: ALLOT

Posted by [Neal Bridges](#) on October 27, 1998 at 10:49:27:

In Reply to: *Re: ALLOT* posted by Jim Hendricks on October 27, 1998 at 09:51:40:

: : Actually, for portability, you just need to use CHARS and CELLS, and CHAR+
: : and
: : CELL+ (rather than 1+ and 2 +).

: I see. But what about the ranges covered by a CHAR and a CELL? Depending on
: the physical size, would that not affect the range of info that can be stored?

I see what you mean, yes. A CHAR isn't expected to hold more than 8 bits, and if your program requires a CELL to have more than 16 bits, you have what the Standard calls an 'environmental dependency'.

Neal

Quartus true flag condition

Posted by [Jim Hendricks](#) on October 26, 1998 at 17:03:39:

Is it correct to assume that true is any non zero value?

Re: Quartus true flag condition

Posted by [Neal Bridges](#) on October 26, 1998 at 17:31:47:

In Reply to: *Quartus true flag condition* posted by Jim Hendricks on October 26, 1998 at 17:03:39:

: Is it correct to assume that true is any non zero value?

Yes, as regards IF, WHILE and UNTIL. A properly-formed TRUE flag is a cell with all bits set to 1. To convert a number into a properly-formed TRUE flag, use
0= 0=.

Neal

More discussion about CREATE DOES>

Posted by [Neal Bridges](#) on October 26, 1998 at 14:54:30:

"CREATE DOES>" can be confusing at first glance. Here it is from another angle.

Here's our CONSTANT definition:

```
: CONSTANT ( x "name" -- ) ( name execution: -- x )  
  CREATE , DOES> @ ;
```

When constant executes, it CREATEs a new word, and assigns the actions after DOES> to that new word.

Here's another definition of CONSTANT, defined again using CREATE DOES> but a little differently:

```
: constant-create ( x "name" -- )  
  CREATE , ;  
  
: constant-action ( name execution: -- x )  
  DOES> @ ;  
  
: CONSTANT ( x "name" -- ) ( name execution: -- x )  
  constant-create constant-action ;
```

As you can see, the DOES> part can be in a separate word from the CREATE. In fact...

```
CREATE FIVE 5 ,
```

constant-action

would have the same effect as

```
5 CONSTANT FIVE
```

In a CREATE DOES> combination, even split across two words, the actions after the DOES> are assigned to the last word CREATED.

Neal

Re: More discussion about CREATE DOES>

Posted by [Jim Hendricks](#) on October 26, 1998 at 15:15:58:

In Reply to: *More discussion about CREATE DOES>* posted by Neal Bridges on October 26, 1998 at 14:54:30:

: "CREATE DOES>" can be confusing at first glance. Here it is from another angle.

: Here's our CONSTANT definition:

:

```
: CONSTANT ( x "name" -- ) ( name execution: -- x )
```

```
:   CREATE , DOES> @ ;
```

:

: When constant executes, it CREATES a new word, and assigns the actions after DOES> to that new word.

: Here's another definition of CONSTANT, defined again using CREATE DOES> but a little differently:

:

```
: constant-create ( x "name" -- )
```

```
:   CREATE , ;
```

```
: : constant-action ( name execution: -- x )
```

```
:   DOES> @ ;
```

```
: : CONSTANT ( x "name" -- ) ( name execution: -- x )
```

```
:   constant-create constant-action ;
```

:

: As you can see, the DOES> part can be in a separate word from the CREATE. In fact...

:

```
CREATE FIVE 5 ,
```

```
: constant-action
```

:

: would have the same effect as

:

5 CONSTANT FIVE

: In a CREATE DOES> combination, even split across two words, the actions after
: the DOES> are assigned to the last word CREATED.

Thanks, alot clearer, this weekend I really beat this into my skull. The few things I was missing was how does DOES> determine which word to extend, which you answered, as well as where is a CREATE within a word getting it's name. This was a confusion factor but once I followed the flow of a colondef with a create followed by the runtime use of the colondefed word with a name I realized that I wasn't recognizing that CREATE picks up it's name from the input stream and not from the stack, as well as the CREATE won't pick up a name until runtime, not at compile time. Kinda confusing but I think I finally have it all worked out, just need to do it now in different ways to reenforce it!

Jim

Eisbaer

Posted by [Jim Hendricks](#) on October 26, 1998 at 13:27:57:

Erwin, just been looking over your code as example and I'm a little perplexed in your : user word. I think I finally have a grasp on the create and does> within the word but why does the word start off with a dup? From what little I have discerned, at the time that user first executes, the stack is empty. Figured it would be easier to ask you then to try to lock up my Quartus again in experimentation. Thanks.

Re: Eisbaer

Posted by [Erwin Schomburg](#) on October 26, 1998 at 13:57:12:

In Reply to: *Eisbaer* posted by Jim Hendricks on October 26, 1998 at 13:27:57:

: Erwin, just been looking over your code as example and I'm a little perplexed
: in your : user word. I think I finally have a grasp on the create and does>
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: have discerned, at the time that user first executes, the stack is empty.
: Figured it would be easier to ask you then to try to lock up my Quartus again
: in experimentation. Thanks.

A CREATED word puts the dataspace address on stack (always, don't you forget to drop it if its not needed!), thats the point from where further use (like the definition part following DOES>) picks up, in the particular case duplicating

it.

/Erwin

Re: Eisbaer

Posted by Erwin on October 26, 1998 at 14:16:19:

In Reply to: *Re: Eisbaer* posted by Erwin Schomburg on October 26, 1998 at 13:57:12:

: : Erwin, just been looking over your code as example and I'm a little
perplexed
: : in your : user word. I think I finally have a grasp on the create and does>
: : within the word but why does the word start off with a dup? From what
little
: I
: : have discerned, at the time that user first executes, the stack is empty.
: : Figured it would be easier to ask you then to try to lock up my Quartus
again
: : in experimentation. Thanks.

: A CREATED word puts the dataspace address on stack (always, don't you forget
to
: drop it if its not needed!), thats the point from where further use (like the
: definition part following DOES>) picks up, in the particular case duplicating
: it.

: /Erwin

Ah, forgot the important bit, user in this case is built as a "defining word"
and does not itsself execute the code following DOES>, it compiles it, i.e.
describes how words built with this "template" shall behave. Only subsequently
defined words built with this definition behave in the manner described
following DOES>.

See the line

user dear-user

where it instantiates a word (the one I use furtheron) with the (pre-) defined
behaviour.

A simpler example was given below with the possible implementation of CONSTANT:

```
: CONSTANT ( x "name" -- ) CREATE , DOES> @ ;
```

here also CONSTANT does not use the stack, but describes what CONSTANTs do, i.e.
use the address of the dataspace and put the contents of the cell at that
address on stack instead.

/Erwin

Re: Eisbaer

Posted by [Jim Hendricks](#) on October 26, 1998 at 16:24:09:

In Reply to: *Re: Eisbaer* posted by Erwin on October 26, 1998 at 14:16:19:

OK, so to merger your 2 responses,

```
: user create 0 , allot does> dup ..... ;  
user dear-user
```

```
: user creates and compiles up to ;, nothing is left on the stack  
user does a create dear-user ( dear-user is being picked up from the  
input stream ) the pointer from the create is left on the stack.  
Now the question would be does the does for dear-user occur when word  
user is executed or later when dear-user is executed from the intro word.
```

If it is from the intro word, isn't the dup in the does a dangerous proposition since it assumes that the stack is positioned right where it was when the user word executed which in this case is many lines before the dear-user word executes. Just trying to first ensure I understand the flow, then learn to avoid potential stack imbalances.

Re: Eisbaer

Posted by Erwin on October 27, 1998 at 00:44:56:

In Reply to: *Re: Eisbaer* posted by Jim Hendricks on October 26, 1998 at 16:24:09:

: OK, so to merger your 2 responses,

```
: : user create 0 , allot does> dup ..... ;  
: user dear-user
```

```
: : user creates and compiles up to ;, nothing is left on the stack  
: user does a create dear-user ( dear-user is being picked up from the  
: input stream ) the pointer from the create is left on the stack.
```

Here's the point of confusion, no it doesn't do anything when and after it is created, it just sits there occupying codespace as well as dataspace, it has not left anything on the stack that hasn't been there before.

Only if I **use** it lateron, it per default puts the address of its dataspace on stack, then executes the DOES> part, which starts with a dup of that address.

/Erwin

Re: Eisbaer

Posted by [Jim Hendricks](#) on October 27, 1998 at 08:42:23:

In Reply to: *Re: Eisbaer* posted by Erwin on October 27, 1998 at 00:44:56:

: Here's the point of confusion, no it doesn't do anything when and after it is
: created, it just sits there occupying codespace as well as dataspace, it has
not
: left anything on the stack that hasn't been there before.

: Only if I **use** it later on, it per default puts the address of its dataspace
on
: stack, then executes the DOES> part, which starts with a dup of that address.

Ooohhhh! Ahhh! The sun is rising, light begins to chase away the darkness!
The binding of the does> to the last word created, is this resolved at compile
time for the word so I don't have to fear matching the does> to the wrong
create? Wow, the wealth of objects that can be created through this mechanism
is staggering, this appears to be a simple way to define words following an OOP
infrastructure. By creating a word that represents the class, when that word
is executed with a name following it, the create portion of the word can be
used for not only creating the attributes portion of an object but can also
contain code for default values etc. The Does> portion of the "class" now
represents a single method. This may not be as rich as an OOP, but it does
give you the encapsulation that an OOP provides which allows for changes to the
implementation of a word(and/or it's associated data) while the interface
remains the same. Because you are in a sense creating your own datatype, you
can also then have multiple instances of this! Man, when I get the chance, I
am going to have to see how far the OOP stucture can be applied since all of my
recent programming experience has been in PowerBuilder and Java which are both
OOP. Thanks for making the sun rise!

Jim

Re: Eisbaer

Posted by Erwin on October 27, 1998 at 09:05:21:

In Reply to: *Re: Eisbaer* posted by Jim Hendricks on October 27, 1998 at
08:42:23:

One could argue about mixing concepts and terminology, but I think you got what
it is about.

Recap with the simple examples:

: CONSTANT CREATE , DOES> @ ;

indeed allows you to define constants until either your codespace or your
dataspace runs out of memory... 1 constant one 2 constant two 5132 constant

fivethousandandthirtytwo

8-)

/Erwin

>IN

Posted by [Jim Hendricks](#) on October 26, 1998 at 13:24:02:

Just a quicky, in laymens terms, what does >IN do? The ansi docs state it in such a way that you would need to understand the underlying system.

Re: >IN

Posted by [Neal Bridges](#) on October 26, 1998 at 15:02:46:

In Reply to: >IN posted by Jim Hendricks on October 26, 1998 at 13:24:02:

: Just a quicky, in laymens terms, what does >IN do? The ansi docs state it in
: such a way that you would need to understand the underlying system.

6.1.0560 >IN "to-in" CORE

(-- a-addr)

a-addr is the address of a cell containing the offset in characters from the start of the input buffer to the start of the parse area.

The input buffer is the area in memory that contains the line being interpreted. >IN holds the current offset into the line. It is initially set to 0 when the parsing/interpreting of the line begins, and is adjusted upwards by the interpreter as the line is processed.

>IN @ . 6 ok

(comment) >IN @ . 18 ok

Neal

Re: >IN

Posted by [Jim Hendricks](#) on October 26, 1998 at 16:35:02:

In Reply to: Re: >IN posted by Neal Bridges on October 26, 1998 at 15:02:46:

: The input buffer is the area in memory that contains the line being interpreted.

```
: >IN holds the current offset into the line. It is initially set to 0 when
the
: parsing/interpreting of the line begins, and is adjusted upwards by the
: interpreter as the line is processed.
:
>IN @ . 6 ok
: ( comment ) >IN @ . 18 ok
:
```

If I understand then, this can be used mid line to tweak (possible preprocess) or modify interpreter behaviour, or even create words that obtain info from the input stream vice pulling info from the stack. Within a worddef though, the input line that is being processed would not be the line in the worddef since this is already compiled, in fact this would not be the word that called the worddef with an >IN in it, but would go all the way back to the currently running interpreted line. I hope that all makes sense. If that is true, why with the samples you provided did the in return 6 and 18 respectively instead of 0 or 4 and 12 or 16 ? In each sample case, the numbers reported by >IN seem to indicate the line has already been parsed to the . even though we have not executed that far. I hope I am not being too dumb and missing the whole point!

Jim

More on >IN

Posted by [Tony Sanders](#) on October 26, 1998 at 18:07:20:

In Reply to: *Re: >IN* posted by Jim Hendricks on October 26, 1998 at 16:35:02:

```
: If I understand then, this can be used mid line to tweak ( possible preprocess
: ) or modify interpreter behaviour, or even create words that obtain info from
: the input stream vice pulling info from the stack.
```

Yes, but there is a little bit more to it. First >IN @ is just an offset, not an actual pointer so you can't access the area though >IN unless you know the base address. Other words (like word) are used to muck with the input-stream.

The way to get the next word in the input stream is:

```
bl word count
```

word advances >IN so the interpreter/compiler will not see it.

try this for C++ style comments:

```
: \\ 10 word drop ; immediate
```

Remember, the address you get is to temporary memory so you have to either use the data immediately or copy it elsewhere.

The typical use for >IN is to save and restore the value so you can

let another word read it. So for example, let's say your doing lots of:

```
" xyzzy" 2CONSTANT xyzzy
```

and want to reduce that to

```
word-constant xyzzy
```

```
\ Supporting words:
```

```
\ bounds is in toolkit, didn't find cmove anywhere in Quartus
```

```
\ cmove is ANS String
```

```
: bounds chars over + swap ;
```

```
: cmove bounds ?do dup c@ I c! 1+ loop drop ;
```

```
\ first some helper words so things are more clear
```

```
: peekword ( <>word ; - addr )
```

```
>in @ bl word swap >in ! ;
```

```
: $! over c@ char+ cmove ;
```

```
: $, here over c@ char+ allot $! ;
```

```
: word-constant ( <>word ; - )
```

```
peekword create $,
```

```
does> ( pfa) count ;
```

```
word-constant xyzzy
```

```
xyzzy type
```

Words like ABORT" are implemented with

```
: ... [char] " word count type
```

```
which parses upto the next "
```

Re: More on >IN

Posted by [Jim Hendricks](#) on October 27, 1998 at 08:51:57:

In Reply to: *More on >IN* posted by Tony Sanders on October 26, 1998 at 18:07:20:

```
: Yes, but there is a little bit more to it. First >IN @ is just an offset,  
: not an actual pointer so you can't access the area though >IN unless you  
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: the input-stream.
```

```
: The way to get the next word in the input stream is:
```

```
: bl word count
```

```
: word advances >IN so the interpreter/compiler will not see it.
```

```
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```

```
: : \ 10 word drop ; immediate
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```
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```
: The typical use for >IN is to save and restore the value so you can
```

```
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```

```
: " xyzzy" 2CONSTANT xyzzy
```

```
: and want to reduce that to
: word-constant xyzzy
:
: \ Supporting words:
: \ bounds is in toolkit, didn't find cmove anywhere in Quartus
: \ cmove is ANS String
: : bounds chars over + swap ;
: : cmove bounds ?do dup c@ I c! 1+ loop drop ;
: \ first some helper words so things are more clear
: : peekword ( <>word ; - addr )
: >in @ bl word swap >in ! ;
: : $! over c@ char+ cmove ;
: : $, here over c@ char+ allot $! ;
: : word-constant ( <>word ; - )
: peekword create $,
: does> ( pfa) count ;

: word-constant xyzzy
: xyzzy type

: Words like ABORT" are implemented with
: : ... [char] " word count type
: which parses upto the next "
```

Got it! Thanks, I will have to look in more depth at your examples but I got the gist!

Jim

Re: More on >IN

Posted by [Neal Bridges](#) on October 26, 1998 at 18:14:02:

In Reply to: *More on >IN* posted by Tony Sanders on October 26, 1998 at 18:07:20:

[discussion about the use of >IN and WORD snipped]

My preference is to use PARSE or PARSE-WORD rather than WORD. An example of manipulating >IN can be found in *ids.txt* in the Quartus File Area.

- [File Area](#)
-

Re: More on >IN

Posted by [Tony Sanders](#) on October 28, 1998 at 18:26:52:

In Reply to: *Re: More on >IN* posted by Neal Bridges on October 26, 1998 at 18:14:02:

: [discussion about the use of >IN and WORD snipped]

: My preference is to use PARSE or PARSE-WORD rather than WORD. An example of
: manipulating >IN can be found in *ids.txt* in the Quartus File Area.

Yes, I should have mentioned them. I used "word" in the examples because
parse-word isn't standard (it's common usage though) and
parse is in CORE-EXT.

PARSE is used when skipping leading delimiters is **NOT** desired
(i.e., when a "null string" is legal). For example, if you implemented
. (with WORD you could not say . ()

WORD is also less efficient as it returns a counted string and therefore
must copy the string from the input buffer into a temporary area so
it can store the count prefixing the string.

PARSE leaves the string in the input buffer and just returns a pointer and
a count on the stack.

For reference:

```
PARSE-WORD ( "name" ; - caddr u )
```

Skip leading spaces and parse name delimited by a space. caddr is the
address within the input buffer and u is the length of the selected
string. If the parse area is empty, u is 0.

If you want to see some fun tricks look at *asm68k* and see how they
allow postfix and prefix syntax for their words.

Re: More on >IN

Posted by [Neal Bridges](#) on October 28, 1998 at 22:29:14:

In Reply to: *Re: More on >IN* posted by Tony Sanders on October 28, 1998 at 18:26:52:

: If you want to see some fun tricks look at *asm68k* and see how they
: allow postfix and prefix syntax for their words.

That 'they' is 'me'... that's an enhancement I added.

Neal

Re: More on >IN

Posted by [Jim Hendricks](#) on October 27, 1998 at 08:58:32:

In Reply to: *Re: More on >IN* posted by Neal Bridges on October 26, 1998 at 18:14:02:

: [discussion about the use of >IN and WORD snipped]

: My preference is to use PARSE or PARSE-WORD rather than WORD. An example of
: manipulating >IN can be found in *ids.txt* in the Quartus File Area.

In fact it was your *ids.txt* that led me to the questions about >IN. I looked
at the differences between WORD, PARSE and PARSE-WORD and I can see how they
each work a little different with PARSE-WORD most likely being the one that
would probably get the most use. WORD though skips over leading spaces, does
PARSE-WORD also?

Jim

Re: More on >IN

Posted by [Neal Bridges](#) on October 27, 1998 at 09:32:14:

In Reply to: *Re: More on >IN* posted by Jim Hendricks on October 27, 1998 at
08:58:32:

: WORD though skips over leading spaces, does
: PARSE-WORD also?

It does.

Neal

Re: >IN

Posted by [Neal Bridges](#) on October 26, 1998 at 17:24:53:

In Reply to: *Re: >IN* posted by Jim Hendricks on October 26, 1998 at 16:35:02:

: running interpreted line. I hope that all makes sense. If that is true, why
: with the samples you provided did the in return 6 and 18 respectively instead
: of 0 or 4 and 12 or 16 ? In each sample case, the numbers reported by >IN
seem
: to indicate the line has already been parsed to the . even though we have not
: executed that far. I hope I am not being too dumb and missing the whole
point!

It had parsed up to the . ('dot') -- . is what displays the 6, if we hadn't parsed that far we wouldn't be executing the 'dot' word.

Neal

Re: >IN

Posted by [Jim Deakin](#) on October 28, 1998 at 06:07:46:

In Reply to: *Re: >IN* posted by Neal Bridges on October 26, 1998 at 17:24:53:

: : running interpreted line. I hope that all makes sense. If that is true,
why
: : with the samples you provided did the in return 6 and 18 respectively
instead
: : of 0 or 4 and 12 or 16 ? In each sample case, the numbers reported by >IN
: seem
: : to indicate the line has already been parsed to the . even though we have
not
: : executed that far. I hope I am not being too dumb and missing the whole
: point!

: It had parsed up to the . ('dot') -- . is what displays the 6, if we hadn't
: parsed that far we wouldn't be executing the 'dot' word.

Surely the number is that of the space following '@' ? as the line progresses
>IN would carry on changing, but the @ would have fetched >IN's value from when
@ was executed. Any number of characters could be between @ and . and the
printed value would still be 6?

Jim

: Neal

Re: >IN

Posted by [Neal Bridges](#) on October 28, 1998 at 14:20:19:

In Reply to: *Re: >IN* posted by Jim Deakin on October 28, 1998 at 06:07:46:

: Surely the number is that of the space following '@' ? as the line progresses
: >IN would carry on changing, but the @ would have fetched >IN's value from
when
: @ was executed. Any number of characters could be between @ and . and the
: printed value would still be 6?

Geez Jim, you're right. It must be something in my coffee.

By way of pennance, here's a very neat thing using >IN:

```
\ Counts 1..10 in interpretation state:
```

```
0 1+ dup . dup 10 = 35 and 2 + >in ! cr
```

Neal

Re: >IN

Posted by Erwin on October 28, 1998 at 06:42:22:

In Reply to: *Re: >IN* posted by Jim Deakin on October 28, 1998 at 06:07:46:

```
: Surely the number is that of the space following '@' ? as the line progresses
: >IN would carry on changing, but the @ would have fetched >IN's value from
when
: @ was executed. Any number of characters could be between @ and . and the
: printed value would still be 6?
```

You got it, and you went one ahead of Neal this time, which is no easy feat 8-)

/Erwin

Re: >IN

Posted by [Jim Hendricks](#) on October 27, 1998 at 09:11:23:

In Reply to: *Re: >IN* posted by Neal Bridges on October 26, 1998 at 17:24:53:

```
: It had parsed up to the . ('dot') -- . is what displays the 6, if we hadn't
: parsed that far we wouldn't be executing the 'dot' word.
```

I think I understand why the results based on your examples, since >in returns a pointer to the offset, as the line continues to be parsed, the value for the offset continues to advance so if I want to use the offset at that pointer, I must safety it myself either on the stack, variable, or through immediate use.

Jim

Re: >IN

Posted by [Erwin Schomburg](#) on October 26, 1998 at 13:51:58:

In Reply to: >IN posted by Jim Hendricks on October 26, 1998 at 13:24:02:

: Just a quicky, in laymens terms, what does >IN do? The ansi docs state it in
: such a way that you would need to understand the underlying system.

It counts where in the Inputbuffer the interpreter would look for the next word.

If your input were

Hello World

and Hello was just interpreted, the content at >IN could be 5 (or was it 6?).

/Erwin

Beginner's Caveats

Posted by [Erwin Schomburg](#) on October 26, 1998 at 07:05:07:

So since a number of people claim to be beginners, I intend to ramble a bit every now and then in addition to Neal's prompt and exact responses.

He wrote on word creation:

A CREATE word returns a pointer to dataspace, and by default does nothing else.

```
CREATE moo 3 ,  
moo @ . 3 ok
```

You can make a word that CREATES other words... like this:

```
: VARIABLE ( "name" -- ) CREATE 1 CELLS ALLOT ;
```

This is, in fact, a perfectly legitimate definition of VARIABLE.

Now this, using DOES> to define additional semantics:

```
: CONSTANT ( x "name" -- ) CREATE , DOES> @ ;
```

This is also, by the way, a perfectly legitimate definition of CONSTANT.

And then there is the >BODY word, giving you the address of the dataspace of a word if you feed it the word's execution token.

```
CREATE test  
' test >BODY
```

is equivalent to (i.e. puts the same value on stack as)

```
test
```

The Standard says, there is an ambiguous condition if there is no dataspace (address) for the word in question. The Standard also says, there is no portable way to tell which words have a dataspace (address), so only if you apply >BODY to an execution token of a CREATED word you can expect a valid result for a given, Standard conforming implementation. No guarantees are given nor can be expected that the dataspace is not zero length (i.e. does contain data associated with this word).

Given the definition of VARIABLE above, >BODY would give a valid result, and indeed does do so for Quartus, but does not need to do so on other systems.

Given the definition of CONSTANT above, >BODY would give a valid result, which would allow to bypass the CONSTANTness of the data,

```
3 CONSTANT test
5 ' test >BODY !
```

but this is **not** how CONSTANT is implemented in Quartus, so you will provoke a crash if you try the construct above (Neal tries to abort before this happens, but at least in Quartus x.7.y the failsafe does not always catch, nevertheless, nowhere does the Standard say the implementor is obliged to resolve the possible ambiguity at all).

/Erwin

EZ DragonBall: 1 Million Gremlins Passed!

Posted by [Neal Bridges](#) on October 25, 1998 at 23:55:41:

I've been testing Quartus D.8.0B here in the lab, and I'm pleased to say it has just passed a million random 'gremlin' events in the new EZ DragonBall PalmOS Emulator from 3Com, under PalmOS 3.1E24. I'm pleased!

The new emulator has been provided by 3Com to allow developers to test their applications under simulated hardware that will be used in future Palm PDAs.

I run gremlins against a Quartus modified so as not to recognize any Forth commands. This is as it should be; the purpose of running the gremlins test is to ensure that the interface and link to the PalmOS is correctly handled, not to discover what random keystrokes might be interpreted as Forth by Quartus.

The gremlins repeatedly exercise all menu items, keystrokes, Find, and so on. Because the "Cold" menu item restarts Quartus via SysUIAppSwitch, the exit/entry code is exhaustively tested.

Neal

Comments on the new PalmOS Emulator

Posted by [Neal Bridges](#) on October 27, 1998 at 00:32:59:

In Reply to: *EZ DragonBall: 1 Million Gremlins Passed!* posted by Neal Bridges on October 25, 1998 at 23:55:41:

This new emulator is quite good; it picked up a very subtle data overrun in MakePRC -- a harmless overrun, read-only, but I'm impressed that the emulator can pick it up.

Neal

Re: EZ DragonBall: 1 Million Gremlins Passed!

Posted by Lou Solomon on October 26, 1998 at 00:09:36:

In Reply to: *EZ DragonBall: 1 Million Gremlins Passed!* posted by Neal Bridges on October 25, 1998 at 23:55:41:

Congratulations! If Hallmark had a 'million gremlin' card, I send it....

Sounds like 1.0 isn't to far away...

Lou

Re: EZ DragonBall: 1 Million Gremlins Passed!

Posted by [Neal Bridges](#) on October 26, 1998 at 00:20:39:

In Reply to: *Re: EZ DragonBall: 1 Million Gremlins Passed!* posted by Lou Solomon on October 26, 1998 at 00:09:36:

:

: Congratulations! If Hallmark had a 'million gremlin' card, I send it....

: Sounds like 1.0 isn't to far away...

Thanks, Lou. Just a handful of features to add, and some further documentation.

Neal

Testing Quartus under the EZ DragonBall Emulator

Posted by [Neal Bridges](#) on October 25, 1998 at 10:03:03:

If any of you are testing Quartus 0.7.6B (or D.7.7B) under the EZ DragonBall emulator, you've probably already discovered the 'writing to unlocked chunk' message it pops up when you switch from Quartus to another app. I've already fixed it; the fix will be in the next beta.

Neal

Quartus: Required ISO/ANS Documentation now in the File Area

Posted by [Neal Bridges](#) on October 25, 1998 at 00:41:19:

I've posted ansdocs.html to the Quartus File Area. It contains the Standard-mandated documentation for the Quartus Forth compiler.

Neal

- [File Area](#)

ISO/ANS Standard in DOC format now available in the File Area

Posted by [Neal Bridges](#) on October 24, 1998 at 22:26:39:

Check out the Miscellaneous File Area-- I've put up the entire ISO/ANS Forth Standard, in DOC format. It's a big DOC file -- 242022 bytes, but if you want to have it in your Palm, and you've got the room, there it is.

Neal

- [File Area](#)
-

Re: ISO/ANS Standard in DOC format now available in the File Area

Posted by [Erwin Schomburg](#) on October 26, 1998 at 06:22:30:

In Reply to: *ISO/ANS Standard in DOC format now available in the File Area* posted by Neal Bridges on October 24, 1998 at 22:26:39:

: Check out the Miscellaneous File Area-- I've put up the entire ISO/ANS Forth
: Standard, in DOC format. It's a big DOC file -- 242022 bytes, but if you want
: to have it in your Palm, and you've got the room, there it is.

: Neal

All I wanted for X-Mas, thanks (I gave it a go some time ago, but this here version is different, its indeed readable).

/Erwin

HELP!!! Palm III frozen

Posted by [Jim Hendricks](#) on October 23, 1998 at 15:12:51:

As a beginner forther, I typed in the following:

```
: test 2 5 begin swap 2 * .s swap 1 - while repeat ;  
test
```

I received

```
<2> 5 4  
<1> 32  
stack empty  
<65535>
```

and then my pilot froze. I can't even turn it off!! I realize my logic is messed up and I have a stack underflow condition which I plan to correct once I can restart my pilot but how do I unfreeze it? I figured you would also like to see the code that led to the freeze if this in any way points the way to a bug in quartus. Thanks, an immediate response would be appreciated.

Re: HELP!!! Palm III frozen

Posted by [Erwin Schomburg](#) on October 23, 1998 at 15:30:31:

In Reply to: *HELP!!! Palm III frozen* posted by Jim Hendricks on October 23, 1998 at 15:12:51:

: As a beginner forther, I typed in the following:

```
: : test 2 5 begin swap 2 * .s swap 1 - while repeat ;  
: test
```

: I received

```
: <2> 5 4  
: <1> 32  
: stack empty  
: <65535>
```

: and then my pilot froze. I can't even turn it off!! I realize my logic is
: messed up and I have a stack underflow condition which I plan to correct once

Give it the stick inside the stylus cap into the reset hole, might need to repeat a couple of times before it "catches"

There is no bug in Quartus that leads to this type of crash, thats normal penalty. The normal "A day of app-rebuilds saves half an hour of decent thinking" is not for us, in Forth you do it right or you crash. There are neither belts nor suspenders for the designer in the design process, all the failsafes available are the ones you create.

As for the logic of your approach, each WHILE eats an item from stack, since you only had one item on stack before the first WHILE, the next time you passed start you didn't get 200\$ but an attempted swap from under the stack's floor.

/Erwin

Re: HELP!!! Palm III frozen

Posted by [Jim Hendricks](#) on October 23, 1998 at 15:43:05:

In Reply to: *Re: HELP!!! Palm III frozen* posted by Erwin Schomburg on October 23, 1998 at 15:30:31:

: Give it the stick inside the stylus cap into the reset hole, might need to
: repeat a couple of times before it "catches"

I stuck it, since I have never had to stick it since all my previous development was tested on the emu, I was afraid that sticking it would do a

cold reset and I would have to reload my pilot. Thank God that's not the case, I guess it's time for me to find out how good backup buddy is!

: There is no bug in Quartus that leads to this type of crash, thats normal
: penalty. The normal "A day of app-rebuilds saves half an hour of decent
: thinking" is not for us, in Forth you do it right or you crash. There are
: neither belts nor suspenders for the designer in the design process, all the
: failsafes available are the ones you create.

So I guess forth is beginner unfriendly! As a beginner, there is nothing better than try it to learn, in fact I was doing this test because I wanted to experiment with looping since I was looking at your code for eisbaer and saw my first loop in no-wait and wanted to understand it. I went to the ANSI docs and got a techie blow job!!! I figured trial and error would teach me! I guess trial and error can work, I just have to expect the unexpected. Is there any case where a warm reset will not work to clear the problem? If so, is battery removal for a few mins considered the cold reset way?

: As for the logic of your approach, each WHILE eats an item from stack, since you
: only had one item on stack before the first WHILE, the next time you passed
: start you didn't get 200\$ but an attempted swap from under the stack's floor.

I guess I missed the fact of WHILE consuming the top stack item. Well, let's try again and see if I can create smoke.

Re: HELP!!! Palm III frozen

Posted by Erwin on October 23, 1998 at 15:58:05:

In Reply to: Re: *HELP!!! Palm III frozen* posted by Jim Hendricks on October 23, 1998 at 15:43:05:

: I guess it's time for me to find out how good backup buddy is!
Off topic, but BB has been taking care of letting me sleep in peace ever since Alexander started to think about it.

: So I guess forth is beginner unfriendly!
No, not really, you just need to think ahead a bit more and you need to do some fine grained steps if you are exploring white spots on your map (and you could always use emulator to do the things where you really fly blind)

: I guess
: trial and error can work, I just have to expect the unexpected.
8-)

: Is there any
: case where a warm reset will not work to clear the problem?
For me, it always came back with a soft reset like you did (warm reset ain't the proper term, see the FAQs at www.PalmIIIFAQ.com how to and what *that* does)

: If so, is battery

: removal for a few mins considered the cold reset way?

Thats ultimate last ressort, normally you do a hard reset if you need to brainwipe it completely (sticker in while holding the power on button) oftimes a warm reset (see above, too much to explain for here) gets you up running without having to loose data.

: I guess I missed the fact of WHILE consuming the top stack item. Well, let's
: try again and see if I can create smoke.

Puff puff 8-)

/Erwin

Re: HELP!!! Palm III frozen

Posted by [Neal Bridges](#) on October 23, 1998 at 15:55:02:

In Reply to: *Re: HELP!!! Palm III frozen* posted by Jim Hendricks on October 23, 1998 at 15:43:05:

re Backup Buddy, if you have Linux on your PC, use pilot-xfer. It can transfer every bit of information from your Pilot to a backup directory, and can restore everything cleanly from a complete cold reset. And it's free.

: So I guess forth is beginner unfriendly! As a beginner, there is nothing
: better than try it to learn, in fact I was doing this test because I wanted to
: experiment with looping since I was looking at your code for eisbaer and saw
my

: first loop in no-wait and wanted to understand it. I went to the ANSI docs
and

: got a techie blow job!!! I figured trial and error would teach me! I guess
: trial and error can work, I just have to expect the unexpected. Is there any
: case where a warm reset will not work to clear the problem? If so, is battery
: removal for a few mins considered the cold reset way?

First, have a look at safe.txt in the file area. It protects you from a number of errors.

Second, I've never needed a cold-reset because of Quartus, and I write the thing; pretty much the worst you can manage is to get it stuck in a non-event-handling loop that requires the Reset button to recover. But, if you do at some point somehow manage to need a cold-reset, you don't need to pull the batteries -- resetting while holding down the power button does the trick, and erases the whole machine.

: : As for the logic of your approach, each WHILE eats an item from stack, since
: you

: : only had one item on stack before the first WHILE, the next time you passed
: : start you didn't get 200\$ but an attempted swap from under the stack's

floor.

```
: I guess I missed the fact of WHILE consuming the top stack item. Well, let's  
: try again and see if I can create smoke.
```

One thing you can do to ensure that you can get out of a loop:

```
: safety  
  ekey? if ekey drop then ;
```

And then use `safety` inside loops you think might run away on you. It's effectively a null operation, but it lets you use the menu to Abort or jump to another application.

```
: LoopingMadeSafe  
  begin safety  
  ...whatever...  
  again ;
```

For that matter, you could even redefine `BEGIN` within `safe.txt`:

```
: BEGIN postpone BEGIN postpone safety ; immediate
```

Neal

Re: HELP!!! Palm III frozen

Posted by Erwin on October 23, 1998 at 16:06:13:

In Reply to: *Re: HELP!!! Palm III frozen* posted by Neal Bridges on October 23, 1998 at 15:55:02:

The failsafes only work when you entered a loop and forgot where the door is. If you try to access an already under-run stack, there is not much that saves you from a crash. Another sure crash-condition is when you try to access a byte (character) value from an address which happens to be odd numbered and in your haste had used `@` instead of `c@`.

/Erwin

Re: HELP!!! Palm III frozen

Posted by [Neal Bridges](#) on October 23, 1998 at 16:14:40:

In Reply to: *Re: HELP!!! Palm III frozen* posted by Erwin on October 23, 1998 at 16:06:13:

```
: The failsafes only work when you entered a loop and forgot where the door is.  
If  
: you try to access an already under-run stack, there is not much that saves you
```

```
: from a crash. Another sure crash-condition is when you try to access a byte
: (character) value from an address which happens to be odd numbered and in your
: haste had used @ instead of c@.
```

You can generate a Fatal Exception if you continue to access an underflowed stack, but that's a different situation -- often just tapping [Reset] on the form will restart the system.

safe.txt protects against attempts to @ a cell from an odd-numbered address.

Another useful word during debugging:

```
: ENOUGH? ( n -- )
  depth 1- <> abort" Stack imbalance!" ;
```

Used like this:

```
: myword ( n1 n2 -- )
  2 enough?
  ...whatever...
;
```

Can also be used inside loops, etc. It's effectively a null operation, unless the stack doesn't contain the expected number of arguments.

Neal

Re: HELP!!! Palm III frozen

Posted by [Jim Hendricks](#) on October 23, 1998 at 16:04:18:

In Reply to: *Re: HELP!!! Palm III frozen* posted by Neal Bridges on October 23, 1998 at 15:55:02:

```
: re Backup Buddy, if you have Linux on your PC, use pilot-xfer. It can
transfer
: every bit of information from your Pilot to a backup directory, and can
restore
: everything cleanly from a complete cold reset. And it's free.
```

Any such thing for Win95? I'm concerned only because I have been told that hotsync doesn't back up everything.

```
: One thing you can do to ensure that you can get out of a loop:
```

```
:
: safety
:   ekey? if ekey drop then ;
:
```

: And then use safety inside loops you think might run away on you.

```
: It's effectively a null operation, but it lets you use the menu to Abort or
```

```
jump
: to another application.
:
: LoopingMadeSafe
:   begin safety
:   ...whatever...
:   again ;
:
: For that matter, you could even redefine BEGIN within safe.txt:
: : BEGIN postpone BEGIN postpone safety ; immediate
```

Wow, now I really am lost! I can type this all in but understanding?!? Look out for low flying aircraft! In your BEGIN redef, you refer to BEGIN, does this hand it off to the original BEGIN?

Safety features

Posted by [Neal Bridges](#) on October 23, 1998 at 16:06:38:

In Reply to: *Re: HELP!!! Palm III frozen* posted by Jim Hendricks on October 23, 1998 at 16:04:18:

```
: : re Backup Buddy, if you have Linux on your PC, use pilot-xfer. It can
: transfer
: : every bit of information from your Pilot to a backup directory, and can
: restore
: : everything cleanly from a complete cold reset. And it's free.
: Any such thing for Win95? I'm concerned only because I have been told that
: hotsync doesn't back up everything.
```

Nothing I know about. If you're stuck in Windows, Backup Buddy may be your best choice.

```
: : One thing you can do to ensure that you can get out of a loop:
: :
: safety
: :   ekey? if ekey drop then ;
: :
: : And then use safety inside loops you think might run away on
: you.
: : It's effectively a null operation, but it lets you use the menu to Abort or
: jump
: : to another application.
: :
```

```
: LoopingMadeSafe
: :   begin safety
: :   ...whatever...
: :   again ;
: :
```

: : For that matter, you could even redefine BEGIN within safe.txt:

```
: : : BEGIN postpone BEGIN postpone safety ; immediate
```

: Wow, now I really am lost! I can type this all in but understanding?!? Look
: out for low flying aircraft! In your BEGIN redef, you refer to BEGIN, does
: this hand it off to the original BEGIN?

Yes it does. The new BEGIN is a word that compiles the old BEGIN, and then
compiles safety.

Neal

Re: HELP!!! Palm III frozen

Posted by [Neal Bridges](#) on October 23, 1998 at 15:23:58:

In Reply to: *HELP!!! Palm III frozen* posted by Jim Hendricks on October 23, 1998
at 15:12:51:

: As a beginner forther, I typed in the following:

```
: : test 2 5 begin swap 2 * .s swap 1 - while repeat ;
: test
```

: I received

```
: <2> 5 4
: <1> 32
: stack empty
: <65535>
```

: and then my pilot froze. I can't even turn it off!! I realize my logic is
: messed up and I have a stack underflow condition which I plan to correct once
I
: can restart my pilot but how do I unfreeze it? I figured you would also like
: to see the code that led to the freeze if this in any way points the way to a
: bug in quartus. Thanks, an immediate response would be appreciated.

You forgot a DUP before your WHILE.

Use a paperclip to reset your Palm -- it's the little hole in the back of the
device marked "Reset".

Neal

Re: HELP!!! Palm III frozen

Posted by [Jim Hendricks](#) on October 23, 1998 at 15:46:04:

In Reply to: *Re: HELP!!! Palm III frozen* posted by Neal Bridges on October 23, 1998 at 15:23:58:

: You forgot a DUP before your WHILE.

Yea, Erwin gave me a chastening for that!

: Use a paperclip to reset your Palm -- it's the little hole in the back of the
: device marked "Reset".

You can tell your new to the Palm III, and Erwin has had one for a while, he didn't mention such low tech as a paper clip, he suggested the "reset enabler pin" hidden inside the stylus of the Palm III. Pretty high tech stuff, just the reason everyone wants the III over the 2.

Jim

Re: HELP!!! Palm III frozen

Posted by [Christian W. Althausen](#) on October 23, 1998 at 17:00:29:

In Reply to: *Re: HELP!!! Palm III frozen* posted by Jim Hendricks on October 23, 1998 at 15:46:04:

: You can tell your new to the Palm III, and Erwin has had one for a while, he
: didn't mention such low tech as a paper clip, he suggested the "reset enabler
: pin" hidden inside the stylus of the Palm III. Pretty high tech stuff, just
: the reason everyone wants the III over the 2.

I have a Palm III but after constantly freezing it and using the "reset enabler pin" I decided to have a paper clip handy.

chris

Re: HELP!!! Palm III frozen

Posted by [Neal Bridges](#) on October 23, 1998 at 15:56:06:

In Reply to: *Re: HELP!!! Palm III frozen* posted by Jim Hendricks on October 23, 1998 at 15:46:04:

: : You forgot a DUP before your WHILE.

: : Yea, Erwin gave me a chastening for that!

: : Use a paperclip to reset your Palm -- it's the little hole in the back of the

: : device marked "Reset".

: : You can tell your new to the Palm III, and Erwin has had one for a while, he
: : didn't mention such low tech as a paper clip, he suggested the "reset enabler
: : pin" hidden inside the stylus of the Palm III. Pretty high tech stuff, just
: : the reason everyone wants the III over the 2.

Quite right. I keep the paperclip around to reset the Pro every now and then;
it's easier to get at than the dingy inside the pen ;)

Neal

Re: Saving wordlists as PRCs

Posted by [Neal Bridges](#) on October 23, 1998 at 14:58:48:

In reply to Tony's question...

Saving selected parts of the Quartus dictionary as external PRC files sounds like a fine idea, except for the implementation. I can't conceive of a library written in Quartus that wouldn't use Quartus kernel words and data structures; these would all have to be resolved at load-time, meaning that they would have to be stored in the PRC by name, and we start to move slowly back toward source code again.

Compilation is very fast under Quartus -- is there a compelling reason to store library code in any form other than source?

Neal

Re: Saving wordlists as PRCs

Posted by [Tony Sanders](#) on October 23, 1998 at 18:07:11:

In Reply to: *Re: Saving wordlists as PRCs* posted by Neal Bridges on October 23, 1998 at 14:58:48:

> I can't concieve of a library
> written in Quartus that wouldn't use Quartus kernel words and data structures;
> these would all have to be resolved at load-time

True.

Same as for any Dynamic Link Library, you have to either use a jump table or rethread the calls. That would be done by load/unload. I'm not suggesting that any old wordlist could be exported (I expect you would have a wordlist for building these that would manage all the ugly details).

An alternative would be to define a byte-code and write a byte-loader. Integrating that in Quartus would give the best size/performance (you could store the byte-codes in the word headers). Open Firmware uses 0x10 - 0xff for single-byte codes and 0x01XX 0x0fXX for double-byte. You could define a compression method also so the byte-code could be zipped (this would make these libraries really tiny in storage and still even faster to load than source compiling).

What do you get? Faster Loading and binary distribution (for those that don't wish to release source). Furthermore, if your careful enough about it you can make the binaries run on both Palm and CE when Quartus is ported to the CE :) You also get an interesting and challanging project for someone to work on.

However, you probably get most of what you want with a target compile under Quartus "Pro".

Re: Saving wordlists as PRCs

Posted by [Erwin Schomburg](#) on October 23, 1998 at 15:17:10:

In Reply to: *Re: Saving wordlists as PRCs* posted by Neal Bridges on October 23, 1998 at 14:58:48:

: Compilation is very fast under Quartus -- is there a compelling reason to store
: library code in any form other than source?
:
: Neal

It smells, it produces overhead. Only reason would be to have valuable stuff hidden away from the all too vulnerable MemoPad. For this protectional reason

the inclusion from files in Doc format would be the way out. As Neal knows, I believe in this approach.

/Erwin

New Thread per subject please!

Posted by [Erwin Schomburg](#) on October 23, 1998 at 14:49:18:

Now that there is a burst of life in here, could we please agree to open a new thread per subject? The General Quartus one gets a bit crowded....

/Erwin

Learning by doing: The sources of Lines! V1.41

Posted by [Matthias Schneider](#) on October 23, 1998 at 03:16:07:

Hello!

Lines! is in the File Area. The sources are included.

I would be glad if we could discuss strong and weak parts of the code as well as the forth programming style I used.

I'm sure all of us can profit out of such a discussion.

Go on! No fear!

Matthias

Re: Learning by doing: The sources of Lines! V1.41

Posted by [Neal Bridges](#) on October 23, 1998 at 12:04:15:

In Reply to: *Learning by doing: The sources of Lines! V1.41* posted by Matthias Schneider on October 23, 1998 at 03:16:07:

By the way --

Matthias has included a version of RANDOM and GRAPHICS. His are not the newest

versions; be careful not to overwrite yours.

Neal

Re: my "old" Ramdom and Graphics

Posted by [Matthias Schneider](#) on October 26, 1998 at 03:04:46:

In Reply to: *Re: Learning by doing: The sources of Lines! V1.41* posted by Neal Bridges on October 23, 1998 at 12:04:15:

: By the way --

: Matthias has included a version of RANDOM and GRAPHICS. His are not the newest

: versions; be careful not to overwrite yours.

: Neal

Oh, I'm sorry, but I can't find newer versions of RANDOM and GRAPHICS in the file area. Where are they?

Matthias

Re: my "old" Ramdom and Graphics

Posted by [Neal Bridges](#) on October 26, 1998 at 11:36:45:

In Reply to: *Re: my "old" Ramdom and Graphics* posted by Matthias Schneider on October 26, 1998 at 03:04:46:

: : By the way --

: : Matthias has included a version of RANDOM and GRAPHICS. His are not the newest

: : versions; be careful not to overwrite yours.

: : Neal

: Oh, I'm sorry, but I can't find newer versions of RANDOM and GRAPHICS in the file area. Where are they?

: Matthias

Matthias, I'd swear I posted both, but they're not there, so my apologies. I'll put them up soon.

Neal

Re: Learning by doing: The sources of Lines! V1.41

Posted by [Neal Bridges](#) on October 23, 1998 at 11:56:11:

In Reply to: *Learning by doing: The sources of Lines! V1.41* posted by Matthias Schneider on October 23, 1998 at 03:16:07:

: Hello!

: Lines! is in the File Area. The sources are included.

: I would be glad if we could discuss strong and weak parts of the code as well as

: the forth programming style I used.

: I'm sure all of us can profit out of such a discussion.

: Go on! No fear!

In my first comments to Matthias, I suggested he use the 'bitmap' word from bitmaps.txt to define his images, and that he use WinEraseRectangle instead of loops of WinEraseLine. Other suggestions:

- use WITHIN from core-ext.txt instead of constructs like

dup dup -1 > swap 9 < and

- factor magic numbers (like the 42 * in the ball drawing words) into separate words

- the program as written makes heavy use of variables for inter-word communication, and not much use of the stack at all

- there appear to be a fair number of repeated code sequences that should be factored out into their own well-named words

- provide a comment for each word that describes its function

To be a truly Forth-like program, each section would keep its data private, and provide interfaces to it. For instance, the game-board would be a private data structure that other parts of the program would access via interface words defined in the game-board module. Each symbol would be represented by a word. In this way, any module could be replaced in its entirety without disrupting the rest of the source, allowing changes to be made to specific modules without the need to revisit the bulk of the program.

Re: misc. Hints

Posted by [Matthias Schneider](#) on October 26, 1998 at 03:28:48:

In Reply to: *Re: Learning by doing: The sources of Lines! V1.41* posted by Neal Bridges on October 23, 1998 at 11:56:11:

: In my first comments to Matthias, I suggested he use the 'bitmap' word from
: bitmaps.txt to define his images, and that he use WinEraseRectangle instead of
: loops of WinEraseLine.

you are so righth! I'll work on it.

: - use WITHIN from core-ext.txt instead of constructs like

: dup dup -1 > swap 9 < and

That's a good hint. I haven't looked in that wordsets yet. Have to do it now!!!

: - factor magic numbers (like the 42 * in the ball drawing words) into separate
: words

Yes, that makes it easier to change it...

: - the program as written makes heavy use of variables for inter-word
: communication, and not much use of the stack at all

That's really difficult for me. I've looked through the sources and I would not
know how to solve the problems than. Which variables do you mean especially?

: - there appear to be a fair number of repeated code sequences that should be
: factored out into their own well-named words

Here you're totally right - and I already found a lot of code I am going to
factor out.

My problem: What is the "optimal" length of a word? (to factor out things,
which are 2 words long and are used 3 times in the program doesn't make much
sense in my opinion. Do you think the same?)

: - provide a comment for each word that describes its function

I'm so lazy - but you're right, of course.

: To be a truly Forth-like program, each section would keep its data private,
and

: provide interfaces to it. For instance, the game-board would be a private
data

: structure that other parts of the program would access via interface words

: defined in the game-board module. Each symbol would be represented by a word.

: In this way, any module could be replaced in its entirety without disrupting

: the rest of the source, allowing changes to be made to specific modules

without

: the need to revisit the bulk of the program.

This is in correlation to the Variable-issue, isn't it? Can I learn out from
Erwin's EISBAER-Sources? Do you have any code which is programmed in this style

(and is doing more complex things than "Hallo World")?

Many thanks for your hints!

Matthias

Re: misc. Hints

Posted by [Neal Bridges](#) on October 26, 1998 at 11:46:47:

In Reply to: *Re: misc. Hints* posted by Matthias Schneider on October 26, 1998 at 03:28:48:

: : - the program as written makes heavy use of variables for inter-word
: : communication, and not much use of the stack at all

: That's really difficult for me. I've looked through the sources and I would
not
: know how to solve the problems than. Which variables do you mean especially?

I see very heavy use of *spx*, *spy*, *lx*, *ly*, *bx*, *by*, *sx*, and *sy*. I'm not sure what
each of these pairs does. Factoring these into *coord@* and *coord!* words
(properly named) might help, and re-coding using these factored words will
reveal other opportunities to factor.

: : - there appear to be a fair number of repeated code sequences that should be
: : factored out into their own well-named words

: Here you're totally right - and I already found a lot of code I am going to
: factor out.
: My problem: What is the "optimal" length of a word? (to factor out things,
: which are 2 words long and are used 3 times in the program doesn't make much
: sense in my opinion. Do you think the same?)

Experience says 7-10 words is a good length. I factor smaller words when they
hide implementation-specific details of a module, or gives names to 'magic'
numbers (same principle at work, there).

My practice is to read my definitions. If at any point I think "what's on the
stack here?" I look for ways to factor.

: : To be a truly Forth-like program, each section would keep its data private,
: and
: : provide interfaces to it. For instance, the game-board would be a private
: data
: : structure that other parts of the program would access via interface words
: : defined in the game-board module. Each symbol would be represented by a
word.

: : In this way, any module could be replaced in its entirety without
disrupting

: : the rest of the source, allowing changes to be made to specific modules
: without

: : the need to revisit the bulk of the program.

: This is in correlation to the Variable-issue, isn't it? Can I learn out from
: Erwin's EISBAER-Sources? Do you have any code which is programmed in this
style
: (and is doing more complex things than "Hallo World")?

The calendar.txt module is pretty well factored, and might give you
some hints.

Neal

Re: misc. Hints

Posted by Matthias Schneider on October 27, 1998 at 02:55:04:

In Reply to: *Re: misc. Hints* posted by Neal Bridges on October 26, 1998 at
11:46:47:

Thanks, Neal!

Now I know a lot more about good forth style.

I'll practise.

Matthias

Re: misc. Hints

Posted by Erwin on October 26, 1998 at 07:44:40:

In Reply to: *Re: misc. Hints* posted by Matthias Schneider on October 26, 1998 at
03:28:48:

: This is in correlation to the Variable-issue, isn't it? Can I learn out from
: Erwin's EISBAER-Sources? Do you have any code which is programmed in this
style
: (and is doing more complex things than "Hallo World")?

: Many thanks for your hints!

: Matthias

You can always learn from other's code snippets, if nothing else comes from it,
it can at least serve as a bad example 8-)

Seriously, stack balancing is a skill you need to learn, during my first steps
with Forth I used a piece of scrap paper to follow stack depth through my words,

I still use it if word related stack usage exceeds three or so items. All the failsafes Neal introduced produce some overhead, small but... If you intend to pull them out from the final programm you (formally) need to re-test everything, so the only testwords I use in near finished stuff (the more sophisticated ones definitely help you in earlier stages) are:

```
: sd .s key drop ;  
: st .s 2dup type key drop ;
```

/Erwin

Re: STACK VARIABLES

Posted by Matthias Schneider on October 26, 1998 at 08:58:37:

In Reply to: *Re: misc. Hints* posted by Erwin on October 26, 1998 at 07:44:40:

: Seriously, stack balancing is a skill you need to learn, during my first steps
: with Forth I used a piece of scrap paper to follow stack depth through my
words,

: I still use it if word related stack usage exceeds three or so items. All the
: failsafes Neal introduced produce some overhead, small but... If you intend to
: pull them out from the final programm you (formally) need to re-test
everything,

: so the only testwords I use in near finished stuff (the more sophisticated
ones

: definitely help you in earlier stages) are:

```
: : sd .s key drop ;  
: : st .s 2dup type key drop ;
```

: /Erwin

I totally agree with you, and in Lines I use stack dephts of 6 and more items. I know what you're writing about.

PS: My testwords are very similar to yours!!

The problem I mentioned is slightly different: What are you doing with the data you have to hold through a game (Highscore, score, position of all the "balls" at the gameboard, position of last tap, the new three "balls" ect.)

All on the stack would produce a depht of ca. 100 items. I'm sure, nobody could handle this (and that can't be the target of good style forth programs either). In EISBAER you are using variables, too.

To say it in one sentence: Which variables are ok, and which are "bad style"?

Matthias

Re: STACK VARIABLES

Posted by [Neal Bridges](#) on October 26, 1998 at 11:55:17:

In Reply to: *Re: STACK VARIABLES* posted by Matthias Schneider on October 26, 1998 at 08:58:37:

: The problem I mentioned is slightly different: What are you doing with the data
: you have to hold through a game (Highscore, score, position of all the "balls" at the gameboard, position of last tap, the new three "balls" ect.)
: All on the stack would produce a depth of ca. 100 items. I'm sure, nobody could handle this (and that can't be the target of good style forth programs either).
: In EISBAER you are using variables, too.
: To say it in one sentence: Which variables are ok, and which are "bad style"?

All globals should of course be held in variables. Variables shouldn't, however, be used to communicate information from one module to another.

For instance, if you have a game board and wish to know what sort of piece is on a given square, you should write a word in the game board module that takes a square number for input, and returns the piece type, rather than directly interrogating the memory that makes up the game board itself. The only place that memory should be interrogated is in the game board module, and only accessed by other code through the interfaces that module publishes.

As a rule, no code below a given module in your source should depend upon, or even know, the internal layout of data structures defined in earlier modules.

Neal

Re: STACK VARIABLES

Posted by Erwin on October 26, 1998 at 10:01:42:

In Reply to: *Re: STACK VARIABLES* posted by Matthias Schneider on October 26, 1998 at 08:58:37:

: : Seriously, stack balancing is a skill you need to learn, during my first steps
: In EISBAER you are using variables, too.
: To say it in one sentence: Which variables are ok, and which are "bad style"?
: Matthias

Rule of thumb: If you have (semi) permanent need of given data, a variable is in order. Also if a word relies on items that are not used by it from TOS downwards

(this does **not** include that the word might need to rearrange the stack within its definition to get what it needs in the right order) this would comprise either bad style and/or potential traps and would surely justify to use a variable (or to redesign and re-arrange the whole flow to be able to work from TOS) 8-).

Borderlines are floating, e.g. in Neals doc module he uses a 2VARIABLE to hold the current database handle which looks like a good idea at first glance, but it turns out that it needs to be stacked away anyway if you go for nested inclusions. This is a classic caveat, those damn global variables holding a status achieved from within a word are a major pain and hindrance for re-entrant words, for these cases the module documentation **must** clearly state the fact, or subsequent users of your modules will fall flat on their faces.

So there was a design decision to make, either to redo the doc module without variable usage (not too difficult) or take it as is and stack and recover the variable's contents within the words using the module (which is how it looks like at present, Neal needs at least three bashes over the head before he changes anything, but it was not worth the effort to me this time).

OTOH, my first approach to IncludeDoc was using a data struture restricting the possible nesting level, which could easily be rebuilt to unrestricted nesting via using both stacks.

'nuff confusion or could you retrieve some help?

/Erwin

Re: STACK VARIABLES

Posted by [Matthias Schneider](#) on October 27, 1998 at 03:16:26:

In Reply to: *Re: STACK VARIABLES* posted by Erwin on October 26, 1998 at 10:01:42:

: 'nuff confusion or could you retrieve some help?

: /Erwin

Thanks, Erwin. I think I've understood it theoretically.

Now I'll practisec.

Matthias

Re: STACK versus VARIABLES

Posted by [Matthias Schneider](#) on October 26, 1998 at 09:39:59:

In Reply to: *Re: STACK VARIABLES* posted by Matthias Schneider on October 26, 1998 at 08:58:37:

: What are you doing with the data
: you have to hold through a game (Highscore, score, position of all the "balls"
: at the gameboard, position of last tap, the new three "balls" ect.)
: All on the stack would produce a depth of ca. 100 items. I'm sure, nobody
could
: handle this (and that can't be the target of good style forth programs
either).
: In EISBAER you are using variables, too.

: To say it in one sentence: Which variables are ok, and which are "bad style"?

: Matthias

One thing comes to my mind: Are there in Forth any way of using "private"
variables which are only active in one word (and are deleted when leaving the
word)?

This would match the goal of "private data" and would give the possibility of
"comfortable" programming, too.

Matthias

Re: STACK versus VARIABLES

Posted by Erwin on October 26, 1998 at 10:15:14:

In Reply to: *Re: STACK versus VARIABLES* posted by Matthias Schneider on October 26, 1998 at 09:39:59:

: One thing comes to my mind: Are there in Forth any way of using "private"
: variables which are only active in one word (and are deleted when leaving the
: word)?

: This would match the goal of "private data" and would give the possibility of
: "comfortable" programming, too.

: Matthias

The Locales wordset is optional and (as yet?) not implemented in Quartus.

/Erwin

Re: STACK versus VARIABLES

Posted by [Neal Bridges](#) on October 26, 1998 at 11:34:33:

In Reply to: *Re: STACK versus VARIABLES* posted by Erwin on October 26, 1998 at 10:15:14:

:
: : One thing comes to my mind: Are there in Forth any way of using "private"
: : variables which are only active in one word (and are deleted when leaving
the
: : word)?
: : This would match the goal of "private data" and would give the possibility
of
: : "comfortable" programming, too.
: : Matthias
: The Locales wordset is optional and (as yet?) not implemented in Quartus.
: /Erwin

The LOCALS wordset isn't implemented, and it's not high on my list at all. It's only one step removed from using global variables to transfer parameters between words, and promotes bad Forth style.

Neal

Re: STACK versus VARIABLES

Posted by Erwin on October 26, 1998 at 11:50:00:

In Reply to: *Re: STACK versus VARIABLES* posted by Neal Bridges on October 26, 1998 at 11:34:33:

: : The Locales wordset is optional and (as yet?) not implemented in Quartus.
: : /Erwin
: The LOCALS wordset isn't implemented, and it's not high on my list at all.
It's
: only one step removed from using global variables to transfer parameters
between
: words, and promotes bad Forth style.
: Neal

I am in agreement with you, but he asked....

/Erwin

Re: Learning by doing: The sources of Lines! V1.41

Posted by [Jim Hendricks](#) on October 23, 1998 at 10:50:42:

In Reply to: *Learning by doing: The sources of Lines! V1.41* posted by Matthias Schneider on October 23, 1998 at 03:16:07:

: Hello!

: Lines! is in the File Area. The sources are included.

: I would be glad if we could discuss strong and weak parts of the code as well as

: the forth programming style I used.

: I'm sure all of us can profit out of such a discussion.

: Go on! No fear!

Thanks for the sources, I am sure that they will help me to jump start my forth since when I first learned forth, ANSI still had not formed any kind of standard so alot has changed (as well as my minds incredible ability to forget!). Would you mind stupid beginner Forth questions?

Re: Learning by doing: The sources of Lines! V1.41

Posted by [Neal Bridges](#) on October 23, 1998 at 20:02:56:

In Reply to: *Re: Learning by doing: The sources of Lines! V1.41* posted by Jim Hendricks on October 23, 1998 at 10:50:42:

: forget!). Would you mind stupid beginner Forth questions?

I don't know about Matthias, but I entirely welcome beginner questions. Bring them on.

Neal

Re: beginner Forth questions

Posted by [Matthias Schneider](#) on October 26, 1998 at 03:35:22:

In Reply to: *Re: Learning by doing: The sources of Lines! V1.41* posted by Neal Bridges on October 23, 1998 at 20:02:56:

: : forget!). Would you mind stupid beginner Forth questions?

: I don't know about Matthias, but I entirely welcome beginner questions. Bring
: them on.

: Neal

Totally the same for me.

(Neal, let's split the work. I'll do the easy stuff, and you are the poor one
which has to answer all the rest...)

Re: Learning by doing: The sources of Lines! V1.41

Posted by [Jim Hendricks](#) on October 24, 1998 at 13:20:00:

In Reply to: *Re: Learning by doing: The sources of Lines! V1.41* posted by Neal Bridges on October 23, 1998 at 20:02:56:

: : forget!). Would you mind stupid beginner Forth questions?

: I don't know about Matthias, but I entirely welcome beginner questions.
Bring
: them on.

You sure? I don't want to take away time from further development of Quartus. I already have a few questions but I guess the best one to start with is what is your recommendation for a tutorial/book or whatever that can jump start me in ANSI Forth? It seems that all the resources I have been finding are either out of print or taylorred to a specific Forth which means plodding through lots of words that have no meaning in ANSI or Quartus. Maybe based on your knowledge of Forth, a tutorial from you and a few of the other notable persons here would be just what the doctor ordered (Of course lets get the product out first). Now, just a few quickies, What is the difference between a word defined as a colonded and one created using CREATE >DOES. Also what is the difference between ." and .(And finally, when using ' how do I know where in the dataspace the word is being reserved? These are just what I have come up with in the last few days, as I plod ahead, I'm sure I will have lots more!

Virtual Thanks, Jim.

Re: Learning by doing: The sources of Lines! V1.41

Posted by [Neal Bridges](#) on October 24, 1998 at 17:34:47:

In Reply to: *Re: Learning by doing: The sources of Lines! V1.41* posted by Jim Hendricks on October 24, 1998 at 13:20:00:

: You sure? I don't want to take away time from further development of Quartus.

I'm sure. I'm working on tutorial material on the side, and questions help that process.

: I already have a few questions but I guess the best one to start with is what
: is your recommendation for a tutorial/book or whatever that can jump start me
: in ANSI Forth? It seems that all the resources I have been finding are either
: out of print or taylored to a specific Forth which means plodding through lots
: of words that have no meaning in ANSI or Quartus. Maybe based on your
: knowledge of Forth, a tutorial from you and a few of the other notable persons
: here would be just what the doctor ordered (Of course lets get the product
out
: first). Now, just a few quickies, What is the difference between a word
: defined as a colondef and one created using CREATE >DOES.

A colon definition is a simple word, like

```
: 3* 3 * ;
```

A CREATE word returns a pointer to dataspace, and by default does nothing else.

```
CREATE moo 3 ,  
moo @ . 3 ok
```

You can make a word that CREATES other words... like this:

```
: VARIABLE ( "name" -- ) CREATE 1 CELLS ALLOT ;
```

This is, in fact, a perfectly legitimate definition of VARIABLE.

Now this, using DOES> to define additional semantics:

```
: CONSTANT ( x "name" -- ) CREATE , DOES> @ ;
```

This is also, by the way, a perfectly legitimate definition of CONSTANT.

: Also what is the
: difference between ." and .(

.(is an immediate word, and will print everything up to the next) wherever it is encountered in your source. ." is a compilation word that, when used inside a colon definition, will cause the text up to the next " to be displayed on the

screen when that definition is executed.

: And finally, when using ' how do I know where in
: the dataspace the word is being reserved? These are just what I have come up
: with in the last few days, as I plod ahead, I'm sure I will have lots more!

What exactly do you mean? ' doesn't reserve dataspace. Can you rephrase the question?

Neal

Re: Learning by doing: The sources of Lines! V1.41

Posted by [Jim Hendricks](#) on October 24, 1998 at 18:33:13:

In Reply to: *Re: Learning by doing: The sources of Lines! V1.41* posted by Neal Bridges on October 24, 1998 at 17:34:47:

: : And finally, when using ' how do I know where in
: : the dataspace the word is being reserved? These are just what I have come
up
: : with in the last few days, as I plod ahead, I'm sure I will have lots more!
: What exactly do you mean? ' doesn't reserve dataspace. Can you rephrase the
: question?

Well you have already enlightened me beyond what reading the ANSI doc has, and as I said, the other tutorials I am working through I need to look the words up in the ANSI doc to verify it's not belonging to the specific implementation the tutorial is going over. Now as to ' I believe I intended to type , but since I don't have my tutorial or ANSI doc handy, I can't be sure but when I looked at your word for VARIABLE, I realize what I beleive to be my typo. I can understand using , in a create but is that the only place it is used? Thanks again, and I look forward to your tutorial. I will be working on some forth later this evening so if I come up with any more questions, I'll post them tomorrow eve or Monday. BTW, the hacks you wrote, written in Pila or Quartus? If in Pila, can hacks be written in Quartus? Not that I am even close to thinking about hacks, just figuring the bounds of Quartus. Have a good weekend.

Jim

Re: Learning by doing: The sources of Lines! V1.41

Posted by [Neal Bridges](#) on October 24, 1998 at 20:27:31:

In Reply to: *Re: Learning by doing: The sources of Lines! V1.41* posted by Jim Hendricks on October 24, 1998 at 18:33:13:

: I can
: understand using , in a create but is that the only place it is used? Thanks
: again, and I look forward to your tutorial. I will be working on some forth
: later this evening so if I come up with any more questions, I'll post them
: tomorrow eve or Monday.

, can be used anywhere -- here's how it's defined:

```
: , ( x -- ) HERE ! 1 CELLS ALLOT ;
```

: BTW, the hacks you wrote, written in Pila or Quartus?
: If in Pila, can hacks be written in Quartus? Not that I am even close to
: thinking about hacks, just figuring the bounds of Quartus. Have a good
weekend.

My hacks are written in Pila. Quartus could be used to write them, but in a
hack you want to be very sure what registers you're using, and how many cycles
you're taking up -- I'd still recommend assembler. But the
Quartus symbolic 68000 assembler, asm68k, would do the trick
nicely.

Neal

A new development site

Posted by [Lou Solomon](#) on October 22, 1998 at 19:11:57:

I just saw a new site about pilot development. Its url is:

<http://www.csee.wvu.edu/~winikoff/palm/dev.html>

Although I disagree with a lot of what the author said about the various tools
(including Quartus), there is one line that is said near the bottom of the page,
regarding performance benchmarks:

" The one SDK which provided native code (Quartus) completely blew away the
others in terms of speed. "

You can all look at the page, but from the table given, it seems like Quartus
did 32000 iterations of a simple addition loop in less than a second, while
others were much slower.

Lou

Re: A new development site

Posted by [Jim Hendricks](#) on October 23, 1998 at 11:53:39:

In Reply to: *A new development site* posted by Lou Solomon on October 22, 1998 at 19:11:57:

: You can all look at the page, but from the table given, it seems like Quartus did 32000 iterations of a simple addition loop in less than a second, while others were much slower.

Not only were the others much slower, the scale was fudged to hide how bad! Notice, only Quartus was measured @ 32000 iterations, all the rest were measured at 1000 iterations. I guess this is concrete proof of what Neil, Irwin and Matthias were claiming about the performance when I questioned it in a previous thread. Thanks for the link.

benchmarking

Posted by [Tony Sanders](#) on October 23, 1998 at 14:36:33:

In Reply to: *Re: A new development site* posted by Jim Hendricks on October 23, 1998 at 11:53:39:

: Not only were the others much slower, the scale was fudged to hide how bad!
: Notice, only Quartus was measured @ 32000 iterations, all the rest were
: measured at 1000 iterations. I guess this is concrete proof of what Neil,
: Irwin and Matthias were claiming about the performance when I questioned it in
: a previous thread. Thanks for the link.

Also the code wasn't written forth style.

I wrote a couple of quick benchmarking words:

```
needs double
```

```
2variable mark
```

```
: start timgetticks mark 2! ;
```

```
: finish timgetticks mark 2@ d- d. ;
```

```
variable xt
```

```
: bench ( x repeat xt -- )
```

```
start xt ! 0 do dup xt @ execute loop finish ;
```

and compared his loop against

```
: bench2 begin dup 0> while swap 2 + swap 1- repeat drop ;
```

(could be done more effeciently but I wanted to keep the general structure of his loop)

The results I got (using the Palm OS Emulator, I don't have my real PIII yet) were 197 and 38. Which hints that this is about 5 times faster. If you have a PIII I would be curious to see what values you get.

I tested with:

```
32000 10 ' bench1 bench \ his benchmark
32000 10 ' bench2 bench \ my benchmark
```

For reference [start 1000 ms finish] gives 100 (again, on the emulated palm).

If I could load asm68k I would code it in asm (all values in registers) to compare times.

Re: benchmarking

Posted by [Neal Bridges](#) on October 23, 1998 at 16:18:46:

In Reply to: *benchmarking* posted by Tony Sanders on October 23, 1998 at 14:36:33:

: I tested with:

```
: 32000 10 ' bench1 bench \ his benchmark
: 32000 10 ' bench2 bench \ my benchmark
```

: For reference [start 1000 ms finish] gives 100 (again, on the
: emulated palm).

I tested these on a PalmIII. (0> is defined in core-ext.txt, by the way; it can be replaced without penalty with 0 >).

```
bench1 1023
bench2 157
```

Which means your benchmark code is 6.5 times faster than his, and runs 32000 iterations in approximately 0.15 seconds.

Neal

Re: benchmarking

Posted by [Jim Hendricks](#) on October 23, 1998 at 15:58:09:

In Reply to: *benchmarking* posted by Tony Sanders on October 23, 1998 at 14:36:33:

```
: : bench2 begin dup 0> while swap 2 + swap 1- repeat drop ;
```

I have a PIII, i tried to put all you mentioned in a memo, dl'd double and put in memo, when I include bench (which is what i titled the memo) I get an exception on 0> Where is 0> defined?

Re: benchmarking

Posted by [Tony Sanders](#) on October 23, 1998 at 18:50:53:

In Reply to: *Re: benchmarking* posted by Jim Hendricks on October 23, 1998 at 15:58:09:

```
: : : bench2 begin dup 0> while swap 2 + swap 1- repeat drop ;
```

```
: I have a PIII, i tried to put all you mentioned in a memo, dl'd double and put  
: in memo, when I include bench ( which is what i titled the memo ) I get an  
: exception on 0> Where is 0> defined?
```

Neal beat me to it but it is in core-ext:

```
: 0> 0 > ; inline
```

I include core-ext in startup.quartus so I didn't catch that.

Thanks for the times Neal.

That puts the Quartus loop at about 2500X Waba beta 3 and only 100-200X faster than Waba B4, and 800X PocketC.

Neal, any thoughts about doing peephole optimizations? We could probably get that inner loop down to 3 or 4 machine instructions :) Maybe I'll type in asm68k later and give it a go... Wish I could figure out how to get non-.prc files into the emulator.

Peephole optimization (was Re: benchmarking)

Posted by [Neal Bridges](#) on October 23, 1998 at 22:31:06:

In Reply to: *Re: benchmarking* posted by Tony Sanders on October 23, 1998 at 18:50:53:

: That puts the Quartus loop at about 2500X Waba beta 3 and only
: 100-200X faster than Waba B4, and 800X PocketC.

: Neal, any thoughts about doing peephole optimizations? We could
: probably get that inner loop down to 3 or 4 machine instructions :)
: Maybe I'll type in asm68k later and give it a go... Wish I could
: figure out how to get non-.prc files into the emulator.

I've thought a lot about peephole optimization. The inner loop of your branch2 (from BEGIN up to and including REPEAT) is (with my internal beta) presently 19 instructions totalling 40 bytes, all inlined native code. With minor peephole optimization, I could reduce that by 1 instruction, eliminating 2 bytes. With a lot of work, I can optimize away 13 instructions (26 bytes), leaving an ideal 14-byte loop containing 7 instructions. That loop would run 3 times faster than the unoptimized version.

That's a reasonable gain, but bear in mind it's in a very small loop; average speed increases resulting from intensive optimization will be somewhere between 1.1X and 2X. with a proportional decrease in the size of the resulting code.

With inlining, tail-call elimination, and short-branch optimization, the system's pretty fast already. For a realistic achievement of a 1.5X increase in speed and slightly smaller generated code sizes, I'm not prepared to invest a great deal of effort in a peephole optimizer.

Also consider the 80/20 rule -- an application spends 80% of its time in 20% of the code. Most code won't benefit from being optimized; if there's really something time-critical that requires even greater speed than Quartus provides, the in-line assembler is always available.

Neal

fill before allot

Posted by [Christian W. Althausen](#) on October 22, 1998 at 15:32:57:

Neal,

I had lots of Fatal Exception in a word that used fill before allot like that :

```
: matriz
( sizex sizey -- adr )
here rot rot 2dup swap , ,
* cells
dup here swap 0 fill
allot ;
-----
```

I changed the order and it worked but your array word uses fill before allot, so what is wrong ? My gess is that before allot the data space may be fragmented thus using fill would corrupt memory, after allot it seems that whatever was in the midle of data space was reallocated, than fill can work correct. That is just a gess (and probably a wrong one).

Re: fill before allot

Posted by [Neal Bridges](#) on October 22, 1998 at 16:46:10:

In Reply to: *fill before allot* posted by Christian W. Althausen on October 22, 1998 at 15:32:57:

```
: Neal,

: I had lots of Fatal Exception in a word that used fill before allot like that
:
: -----
: : matriz
: ( sizex sizey -- adr )
: here rot rot 2dup swap , ,
: * cells
: dup here swap 0 fill
: allot ;
: -----
```

```
: I changed the order and it worked but your array word uses fill before allot,
so
: what is wrong ? My gess is that before allot the data space may be fragmented
: thus using fill would corrupt memory, after allot it seems that whatever was
in
: the midle of data space was reallocated, than fill can work correct. That is
just
: a gess (and probably a wrong one).
```

Always allot first, then fill.

Neal

u -> zstring

Posted by [Christian W. Althausen](#) on October 22, 1998 at 15:22:01:

Can anyone help on that ?

How can I convert a number on the stack into a zero string ?

I'm almost finishing my little quartus-bitmap generator, but can't figure a way out. Also is there a bit-rotate word in forth ?

Tanks !

Chris

Re: u -> zstring

Posted by [Matthias Schneider](#) on October 23, 1998 at 03:23:27:

In Reply to: *u -> zstring* posted by Christian W. Althausen on October 22, 1998 at 15:22:01:

: I'm almost finishing my little quartus-bitmap generator

Hey, that's great! Last week I was thinking a moment on writing such a generator, but decided than that this would be to complecated for me.

(.....is there any possibility to get it when it's finished.....)

Matthias

Re: u -> zstring

Posted by [Christian W. Althausen](#) on October 23, 1998 at 09:12:05:

In Reply to: *Re: u -> zstring* posted by Matthias Schneider on October 23, 1998 at 03:23:27:

:

: : I'm almost finishing my little quartus-bitmap generator

:

: Hey, that's great! Last week I was thinking a moment on writing such a
: generator, but decided than that this would be to complecated for me.

: (.....is there any possibility to get it when it's finished.....)

Of corse. I plan to upload it here, as soon as I digest all this character stuff (it's still a bit confusing for me). Maybe you can help me, I'll send you a preliminary version.

Chris

Re: u -> zstring

Posted by [Neal Bridges](#) on October 22, 1998 at 16:52:27:

In Reply to: *u -> zstring* posted by Christian W. Althausen on October 22, 1998 at 15:22:01:

: Can anyone help on that ?

: How can I convert a number on the stack into a zero string ?

```
: u>zstring ( u -- c-addr u )
  0 <# 0 hold #s #> ;
```

: I'm almost finishing my little quartus-bitmap generator, but can't figure a way

: out. Also is there a bit-rotate word in forth ?

Try this:

```
: BIT-ROTATE-LEFT ( x1 bits -- x2 )
  2dup 16 swap - rshift >r
  lshift r> or ;
```

: Tanks !

A pleasure.

Neal

Re: u -> zstring

Posted by [Christian W. Althausen](#) on October 23, 1998 at 13:04:39:

In Reply to: *Re: u -> zstring* posted by Neal Bridges on October 22, 1998 at 16:52:27:

Neal,

since I don't know how to use pictured numeric output strings, I can't figure out what went wrong. This is the story:

needs memo

```
: u>zstring ( u -- c-addr u )  
0 <# 0 hold #s #> ;
```

```
OpenMemoDB  
777 u>zstring WriteNewMemo  
CloseMemoDB  
-----
```

I got :
7770"0
in my MemoPad.

Re: u -> zstring

Posted by [Christian W. Althausen](#) on October 23, 1998 at 13:28:22:

In Reply to: *Re: u -> zstring* posted by Christian W. Althausen on October 23, 1998 at 13:04:39:

: Neal,
:
: since I don't know how to use pictured numeric output strings, I can't figure
: out what went wrong. This is the story:

```
: -----  
: needs memo  
:  
: : u>zstring ( u -- c-addr u )  
: 0 <# 0 hold #s #> ;  
:  
: OpenMemoDB  
: 777 u>zstring WriteNewMemo  
: CloseMemoDB  
: -----
```

: I got :
:
: 7770"0
:
: in my MemoPad.

FORGET, I was using a TRACE word inside u>zstring to show me the stack, after removing the TRACE it all worked fine.

Tanks for your patience,

chris

general quartus

Posted by [Jim Hendricks](#) on October 20, 1998 at 15:09:57:

I am fairly new to the Palm Pilot programming world but have been through the C then Pila Asm programming paths and have not really been happy with either. Forth has always been an interesting lang to me but I have never attempted anything with it. What I question is weather I should invest the time to learn forth for Palm programming. What is the storage and runtime footprints of a native compiled forth prog as apposed to C or Asm. My biggest reason for staying away from C is the larger footprint. Asm has obviously the best footprint but comes at the cost of tedious programming with a half baked set of tools. I am also very interested in Quartus developer, you state that it is to be released as a for pay product but do you have any price range idea's yet to let us aspiring Quartus programmers know about what we will be in for? Once again, forth does intrigue me so I will probably investigate Quartus for the learning experience but it would be nice to think I am investigating a programming environment that I may choose to stick with for actual development. Thanks for the time!

Re: general quartus

Posted by [Lou Solomon](#) on October 20, 1998 at 18:41:00:

In Reply to: *general quartus* posted by Jim Hendricks on October 20, 1998 at 15:09:57:

Jim:

I'm also a newbie to the Pilot world, and have been exploring Quartus as a solution for myself... A couple of opinions, which are purely mine, may help:

* as far as the large footprint for 'C', I'm surprised you say this. I have no direct experience in C programming for the PP, but from what I see, code size is probably more application and/or programmer dependent (for example, whether the programmer using the operating system calls to do something, rather than rolling their own code). There seems to be lots of programs created with C that are amazingly small, considering their functionality.

* as far as speed... I've no real idea about the differences. But for what its worth: I do know one thing.. .the lines! program by Matthias Schneider (it's in the Quartus file area) is a very nice graphical program that is at least as fast, if not faster, than the two similar type programs I've seen that were not developed with Quartus. I guess it depends what what your final program will do, but I can't imagine that Quartus will not be up to the task, speed wise. (I believe there are some limitations in Quartas as for the size of programs, so you should check with others here regarding those limits).

* Development platform: the key difference between Quartus and the other

solutions you mentioned is that Quartus development is done on the Palmpilot (or emulator), while the "C" and PILA programs require a PC. Depending upon your wants, needs, etc. there are good and bad things about each approach. Clearly, Quartus (in it's current form), is not a multiwindow debugging development tool, nor is editing the source exceptional easy. For example, to edit the source, you have to leave the Quartus enviroment, go into an editor (say MemoPad), make changes, and go back to Q. to check things out. And, lets face it, the text editing of the PP is pretty rudimentary (ie: no multiple files, windows, search/replace, etc). And lastly, but not least, no keyboard.

However, all that being said, there are ways around things:

- if you use the emulator on a PC, you can easily make changes in the PC desktop memos, and hot sync it quickly to the emulator.

- Landware (landware.com) is coming out with a portable keyboard that the Pilot sits on that can do text entry (I've already ordered one... haven't gotten it yet, first ones out of the factory are supposed to come next week). There are other solutions that allow Newton keyboards to be used.

- There are lots of "hacks" on the pilot which really help the programming effort. Switchhack allows pretty quick switching between two applications (ie: Quartus and Memopad). PopupHack allows you to put often used phrases, letters, symbols) in a popup window which can easily be accessed (I love this hack). After I build a forth "word", I tend to put it in the hack so I can easily access it. And, from what I've read, the best forth programming should involve creating words with specific functions, that never need to be "edited" after the fact. In other words, debugging and editing, might be less of an issue if you use good Forth programming practices.

Ultimately, my reason for continuing to evaluate Quartus is the fact that the Palmpilot IS THE development environment. I can be going home on the subway at night and write programs. I learned Forth (OK, still have a lot to learn) on the beach! Just like all other apps on the Palmpilot, you pay a price for the portability, but that is why we/I love the thing. If I had to drag around my laptop everywhere I wanted to do PP programming, it would lose the fun for me (and yes, I'm in it mostly for the fun).

Lou Solomon
lny98@yahoo.com

PS: As for Forth, there are things I really like about it, and things I really hate about it. But like pretty much every language, there is always some way to do what you want (when I was a teenager, I did some amazing things on my Commodore 64 using it's built in BASIC interpreter). The idea, as usual is to find the quickest, easiest, and hopefully, the most elegant way. But even if you don't, sometimes it's just get it done... My forth code tends to look like more of a 3GL type of language (ie: I tend to use global variables too much vs. using the stack), but hey.. .i'm in this for the fun, and learning experience... and since my app isn't really graphical, if I ever get to generating an executable, I doubt my bad Forth style will effect the final PRC in any significant way. I'll probably just never show anyone the source :-) definitely no one in this forum....

Re: general quartus

Posted by [jimh](#) on October 21, 1998 at 08:58:47:

In Reply to: *Re: general quartus* posted by Lou Solomon on October 20, 1998 at 18:41:00:

: Jim:

: I'm also a newbie to the Pilot world, and have been exploring Quartus as a
: solution for myself... A couple of opinions, which are purely mine, may help:

: * as far as the large footprint for 'C', I'm surprised you say this. I have
no direct experience in C programming for the PP, but from what I see, code
size is probably more application and/or programmer dependent (for example,
whether the programmer using the operating system calls to do something, rather
than rolling their own code). There seems to be lots of programs created with
C that are amazingly small, considering their functionality.

I say large footprint in C because I know that I can write the same program in
ASM and cut the footprint down typically by a factor of 30%. Granted the more
system calls that are relied on, the less the factor between C and ASM. I too
got my start on a C64 and I very quickly moved from BASIC to ASM because of
functionality. Once I moved to an Amiga and then the PC, I realized that as I
coded more in C/C++ that my productivity greatly increased but my apps
performance and footprint degraded. On the PC, I don't care about the larger
footprint or the lose of performance, but on the Pilot with only 2M for both
storage and dynamic RAM, foot print is important, as well as with a 16MHZ clock
which I typically run at 10MHZ for battery savings, the performance is
important.

: * as far as speed... I've no real idea about the differences. But for what
its worth: I do know one thing.. .the lines! program by Matthias Schneider
(it's in the Quartus file area) is a very nice graphical program that is at
least as fast, if not faster, than the two similar type programs I've seen that
were not developed with Quartus. I guess it depends what what your final
program will do, but I can't imagine that Quartus will not be up to the task,
speed wise. (I believe there are some limitations in Quartas as for the size
of programs, so you should check with others here regarding those limits).

I DL'd the lines! prog and ran it and the only comparison I can make is to a PC
version of the game. I don't know how intense the logic and GUI/DB IO may be
on such a game so it's hard for me to apraise the performance. I did also look
at the Eisbar example which came with source but my limited knowledge of forth
is making an eval of the complexity of the logic slow. Once I know the
complexity of the logic, I can probably make a comparison against other progs I
have written in C/ASM to decide how the performace matches up. Either that, I
will just rewrite one of my existing progs in Quartus.

: * Development platform: the key difference between Quartus and the other
solutions you mentioned is that Quartus development is done on the Palmpilot

(or emulator), while the "C" and PILA programs require a PC. Depending upon your wants, needs, etc. there are good and bad things about each approach. Clearly, Quartus (in it's current form), is not a multiwindow debugging development tool , nor is editing the source exceptional easy. For example, to edit the source, you have to leave the Quartus enviroment, go into an editor (say MemoPad), make changes, and go back to Q. to check things out. And, lets face it, the text editing of the PP is pretty rudimentary (ie: no multiple files, windows, search/replace, etc). And lastly, but not least, no keyboard.

I do like the idea of programming on the pilot itself, I looked into the C and Basic environments for programming right on the pilot itself and didn't like how limited the environments were. By now that may have changed. I also plan to look at the Onboard resource editor/compiler mentioned previously in these discussion forums since it fills out the ability to develop the whole app on the pilot itself. I too am developing on the P3 emulator so that I can use the keyboard. My P3 emu runs on my notebook though so I do the editing in the emu instead of on the P3 desktop and hotsync to the emu (my notebook only has 1 com port.

: However, all that being said, there are ways around things:

: - if you use the emulator on a PC, you can easily make changes in the PC desktop memos, and hot sync it quickly to the emulator.

: - Landware (landware.com) is coming out with a portable keyboard that the Pilot sits on that can do text entry (I've already ordered one... haven't gotten it yet, first ones out of the factory are supposed to come next week). There are other solutions that allow Newton keyboards to be used.

:
: - There are lots of "hacks" on the pilot which really help the programming effort. Switchhack allows pretty quick switching between two applications (ie: Quartus and Memopad). PopupHack allows you to put often used phrases, letters, symbols) in a popup window which can easily be accessed (I love this hack). After I build a forth "word", I tend to put it in the hack so I can easily access it. And, from what I've read, the best forth programming should involve creating words with specific functions, that never need to be "edited" after the fact. In other words, debugging and editing, might be less of an issue if you use good Forth programming practices.

: Ultimately, my reason for continuing to evaluate Quartus is the fact that the Palmpilot IS THE development environment. I can be going home on the subway at night and write programs. I learned Forth (OK, still have a lot to learn) on the beach! Just like all other apps on the Palmpilot, you pay a price for the portability, but that is why we/I love the thing. If I had to drag around my laptop everywhere I wanted to do PP programming, it would lose the fun for me (and yes, I'm in it mostly for the fun).

:
: Lou Solomon
: lny98@yahoo.com

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to find the quickest, easiest, and hopefully, the most elegant way. But even if you don't, sometimes it's just get it done... My forth code tends to look like more of a 3GL type of language (ie: I tend to use global variables too much vs. using the stack), but hey.. .i'm in this for the fun, and learning experience... and since my app isn't really graphical, if I ever get to generating an executable, I doubt my bad Forth style will effect the final PRC in any significant way. I'll probably just never show anyone the source :-)
definitely no one in this forum....

Hey, thanks for the indepth eval from your perspective, I have only been looking at Quartus for less than a week but your perspective gives me more reason to continue my eval. Forth is pretty neat, just need to get a grasp on what is in ANS Forth since right now this isn't doc'd in the Quartus product.

Re: general quartus

Posted by [Matthias Schneider](#) on October 21, 1998 at 05:18:03:

In Reply to: *Re: general quartus* posted by Lou Solomon on October 20, 1998 at 18:41:00:

: * as far as speed... I've no real idea about the differences. But for what its worth: I do know one thing.. .the lines! program by Matthias Schneider (it's in the Quartus file area) is a very nice graphical program that is at least as fast, if not faster, than the two similar type programs I've seen that were not developed with Quartus. I guess it depends what what your final program will do, but I can't imagine that Quartus will not be up to the task, speed wise.

Quartus is VERY fast. In the Lines! program, for example, I had to build in a lot of "brakes", so that you can see what happens. Without these "brakes", you wouldn't see any delay to your actions.

If you would be interested, i'll ask Neal to copy the sources into the Files Area. Let me know.

Matthias

Re: general quartus

Posted by [Jim Hendricks](#) on October 21, 1998 at 09:03:48:

In Reply to: *Re: general quartus* posted by Matthias Schneider on October 21, 1998 at 05:18:03:

: Quartus is VERY fast. In the Lines! program, for example, I had to build in a
: lot of "brakes", so that you can see what happens. Without these "brakes",
you
: wouldn't see any delay to your actions.
:
: If you would be interested, i'll ask Neal to copy the sources into the Files
: Area. Let me know.

I would be interested in the source if not just for a good example of some real code with an actual gui etc. I would also be interested in pulling out the brakes to see how fast it runs as well as getting an idea of how "intense" the logic itself is. If you wouldn't mind the post I would appreciate, if not, I did provide my e-mail so we could also offline this discussion. Thanks just the same for the perspective from someone who is using the Quartus for more than just experimenting as well as from someone actually using the standalone system.

Re: Fastness of Quartus

Posted by [Matthias Schneider](#) on October 26, 1998 at 04:06:12:

In Reply to: *Re: general quartus* posted by Jim Hendricks on October 21, 1998 at 09:03:48:

: : Quartus is VERY fast. In the Lines! program, for example, I had to build in a
: : lot of "brakes", so that you can see what happens. Without these "brakes",
: you
: : wouldn't see any delay to your actions.

: I would also be interested in pulling out the
: brakes to see how fast it runs as well as getting an idea of how "intense" the
: logic itself is.

Have you tested it without brakes? It's impressing, isn't it!

Matthias

Re: Fastness of Quartus

Posted by [Jim Hendricks](#) on October 26, 1998 at 11:17:06:

In Reply to: *Re: Fastness of Quartus* posted by Matthias Schneider on October 26, 1998 at 04:06:12:

: Have you tested it without brakes? It's impressing, isn't it!

Haven't had the chance yet, in fact I haven't even looked at the source yet. Sometimes life gets in the way of programming (ugly isn't it). Actually, it's nice every now and again to see real life instead of 1's and 0's! Maybe latter this week I will pull out the brakes once I see where they are and play with it.

Jim

Re: general quartus

Posted by [Matthias Schneider](#) on October 21, 1998 at 10:34:32:

In Reply to: *Re: general quartus* posted by Jim Hendricks on October 21, 1998 at 09:03:48:

: I would be interested in the source if not just for a good example of some real
: code with an actual gui etc. I would also be interested in pulling out the
: brakes to see how fast it runs as well as getting an idea of how "intense" the
: logic itself is. If you wouldn't mind the post I would appreciate, if not, I
: did provide my e-mail so we could also offline this discussion. Thanks just
: the same for the perspective from someone who is using the Quartus for more
: than just experimenting as well as from someone actually using the standalone
: system.

I think this Forum is a good place for discussing. I'll email Neal the actual Sources for posting it. Just polishing them up a little bit.

Matthias

Re: general quartus

Posted by [Matthias Schneider](#) on October 22, 1998 at 10:03:37:

In Reply to: *Re: general quartus* posted by Matthias Schneider on October 21, 1998 at 10:34:32:

:
: I think this Forum is a good place for discussing. I'll email Neal the actual
: Sources for posting it. Just polishing them up a little bit.

: Matthias

OK. I've sent Version 1.41 incl. Sources to Neal for publishing it in the Files Area. Let's wait and see...(if he wants to publish ist ;-).

BTW: I don't have a good forth programming style. So look into the sources at your own risk!!
Perhaps the "Seniors" can give me a hand, how to write a more clearly code. I'm a learner.

Re: general quartus

Posted by [Jim Deakin](#) on October 22, 1998 at 05:52:03:

In Reply to: *Re: general quartus* posted by Matthias Schneider on October 21, 1998 at 10:34:32:

Matthias said:

: I think this Forum is a good place for discussing. I'll email Neal the actual
: Sources for posting it. Just polishing them up a little bit.

Thanks for that, Matthias. I asked Neal if he could show the sources when he first put your game up, and he was going to contact you. But I guess he's had enough to do with bug chasing, and beta fixing since then.

Jim

Re: general quartus

Posted by [Neal Bridges](#) on October 22, 1998 at 14:12:38:

In Reply to: *Re: general quartus* posted by Jim Deakin on October 22, 1998 at 05:52:03:

: Matthias said:

: : I think this Forum is a good place for discussing. I'll email Neal the actual

: : Sources for posting it. Just polishing them up a little bit.

: Thanks for that, Matthias. I asked Neal if he could show the sources when
: he first put your game up, and he was going to contact you. But I guess he's
: had enough to do with bug chasing, and beta fixing since then.

I knew Matthias wanted to tune it up a bit before releasing. He's sent it to me; I'll put it up soon.

Neal

Re: general quartus

Posted by [Jim Hendricks](#) on October 21, 1998 at 10:44:44:

In Reply to: *Re: general quartus* posted by Matthias Schneider on October 21, 1998 at 10:34:32:

: I think this Forum is a good place for discussing. I'll email Neal the actual
: Sources for posting it. Just polishing them up a little bit.

Thanks, will be looking forward to it.

Re: general quartus

Posted by [Neal Bridges](#) on October 20, 1998 at 19:35:13:

In Reply to: *Re: general quartus* posted by Lou Solomon on October 20, 1998 at 18:41:00:

: (I believe there are some limitations in Quartas as for the size of programs,
: so you should check with others here regarding those limits).

In the current beta, codespace is 24000 bytes. This will be adjustable in the commercial release.

Stand-alone PRCs generated by Quartus will be able to contain up to 64K of code, which would be a very large Forth program indeed. Good Forth is well-factored; this leads to heavy code re-use, and small footprints.

Neal

Re: general quartus

Posted by [Neal Bridges](#) on October 20, 1998 at 17:00:51:

In Reply to: *general quartus* posted by Jim Hendricks on October 20, 1998 at 15:09:57:

...
: forth for Palm programming. What is the storage and runtime footprints of a
: native compiled forth prog as apposed to C or Asm. My biggest reason for
: staying away from C is the larger footprint. Asm has obviously the best
: footprint but comes at the cost of tedious programming with a half baked set
of

Quartus stand-alone apps are native-code, and have a very small footprint with no run-time library requirement. The "Hello World" app is 2K. With continued work on optimization, this will shrink even further.

Other apps (ones that actually do something besides print "Hello World") that I've compiled range from 3K to 13K, with the majority being under 5K.

Another example: I've rewritten Dale Gass' YearCal program under Quartus. His was written with Jump, a Java->Assembler translator, and comes to 10600 bytes; the Quartus version (with identical functionality) compiles under D.7.7B to only 3864 bytes.

Bear in mind that you can also use Quartus as a symbolic assembler, intermixing 68000 machine language with Forth.

: tools. I am also very interested in Quartus developer, you state that it is
to
: be released as a for pay product but do you have any price range idea's yet to
: let us aspiring Quartus programmers know about what we will be in for? Once

I haven't fixed the price, but it'll probably be \$69.95 USD. I'm still deciding whether or not, for instance, a printed manual is a desirable option; that sort of decision will affect the target price.

Remember the system will also be available free, but without stand-alone PRC generation capabilities.

: again, forth does intrigue me so I will probably investigate Quartus for the
: learning experience but it would be nice to think I am investigating a
: programming environment that I may choose to stick with for actual
development.
: Thanks for the time!

My pleasure!

Neal

Re: general quartus

Posted by [Jim Hendricks](#) on October 21, 1998 at 09:19:57:

In Reply to: *Re: general quartus* posted by Neal Bridges on October 20, 1998 at 17:00:51:

: Quartus stand-alone apps are native-code, and have a very small footprint
with
: no run-time library requirement. The "Hello World" app is 2K. With
continued
: work on optimization, this will shrink even further.
: Other apps (ones that actually do something besides print "Hello World") that
: I've compiled range from 3K to 13K, with the majority being under 5K.
: Another example: I've rewritten Dale Gass' YearCal program under Quartus.
His
: was written with Jump, a Java->Assembler translator, and comes to 10600
bytes;
: the Quartus version (with identical functionality) compiles under D.7.7B to
only
: 3864 bytes.

Sounds like I need to get a grasp of Forth programming so I can try these same
type of experiments myself with some of the progs I wrote in C and Pila.

: Bear in mind that you can also use Quartus as a symbolic assembler,
intermixing
: 68000 machine language with Forth.

I saw the 68k asm files in the DL area, I just don't want to corrupt my learning
of Forth with dipping back to 68k yet. Eventually the ability to dip back to
68k sounds like a very powerful feature, especially since looking at some of
the goals of Forth, the ability to inline ASM seems to be a desired feature of
a Forth environment.

: I haven't fixed the price, but it'll probably be \$69.95 USD. I'm still
deciding
: whether or not, for instance, a printed manual is a desirable option; that
sort
: of decision will affect the target price.

Well, at least you don't plan on breaking my piggy bank! I'm always leary of
working with a beta product only to find when it goes live that the price tag
is astronomical. I think you could also market the Developer version with and
without the manual. I myself would do without the manual since the on-line
manual can always be printed by me. This also gives me the advantage of after
printing not being afraid of writting lots of stuff in the margins since I can

always reprint if I mack up the manual. On the other hand you have some people who beleive a package can't be called a professional package without the printed manual.

: Remember the system will also be available free, but without stand-alone PRC
: generation capabilities.

I realize the system itself with be available free, and I think that is great, especially after all the work you must have put in just to get the product to where it is now. (boy, how do you put up with Pila's strange behavior?) I have hopes of someday turning some of my prog play on the Pilot into possible freeware/shareware/commercial ventures. If I go that route then the developer would be a required option and I love the fact that the developer doesn't require a runtime! I notice with both of the standalone samples in the files area that they come up with a splash screen advertising that the app was developed with Quartus. Is this a required splash screen? Can it be modified to be a splash screen for the app with a note at the bottom giving Quartus credit? In the freeware version, are there plans to save words in the system dictionary? Are there also possible plans of supporting User dictionaries so that a memo can be compiled into the User dictionary and when the include is run, no compilation is required?

: : again, forth does intrigue me so I will probably investigate Quartus for the

: : learning experience but it would be nice to think I am investigating a
: : programming environment that I may choose to stick with for actual
: development.

: : Thanks for the time!

: My pleasure!

Thanks again, for the time, and for a mature development environment.

Re: general quartus

Posted by [Neal Bridges](#) on October 21, 1998 at 10:12:01:

In Reply to: *Re: general quartus* posted by Jim Hendricks on October 21, 1998 at 09:19:57:

: Sounds like I need to get a grasp of Forth programming so I can try these same
: type of experiments myself with some of the progs I wrote in C and Pila.

Check out my Linkx page, there's a lot of good information available from there, including the ANS Standard document.

: I realize the system itself with be available free, and I think that is great,
: especially after all the work you must have put in just to get the product to
: where it is now. (boy, how do you put up with Pila's strange behavior?) I

I supplement Pila with M4. It helps-- I can more or less write Quartus in Forth itself.

: have hopes of someday turning some of my prog play on the Pilot into possible
: freeware/shareware/commercial ventures. If I go that route then the developer
: would be a required option and I love the fact that the developer doesn't
: require a runtime! I notice with both of the standalone samples in the files
: area that they come up with a splash screen advertising that the app was
: developed with Quartus. Is this a required splash screen? Can it be modified

It's not a required splash screen -- it's just in the beta to discourage wide distribution of beta-compiled apps.

: to be a splash screen for the app with a note at the bottom giving Quartus
: credit? In the freeware version, are there plans to save words in the system
: dictionary?

The decision of whether or not to retain the dictionary between incarnations of Quartus is a tough one. Quartus can use external resources, and allocate new memory, and there's no way to record the entire state of the system when leaving it temporarily.

: Are there also possible plans of supporting User dictionaries so
: that a memo can be compiled into the User dictionary and when the include is
: run, no compilation is required?

That's an interesting idea. There are a few hurdles to its implementation; let me think on it.

Neal

Re: general quartus

Posted by [Jim Hendricks](#) on October 21, 1998 at 10:51:08:

In Reply to: *Re: general quartus* posted by Neal Bridges on October 21, 1998 at 10:12:01:

: Check out my Linkx page, there's a lot of good information available from
: there,
: including the ANS Standard document.

Thanks, already DL'd ANS Standard doc through your Linx, as well as wondered around forth.org.

: The decision of whether or not to retain the dictionary between incarnations
: of
: Quartus is a tough one. Quartus can use external resources, and allocate new
: memory, and there's no way to record the entire state of the system when
: leaving
: it temporarily.

Is there a word available right now to indicate that a word definition should

be added to the system db permanently? This would be at least a partial solution, it would put the onus on the programmer to determine what persists.

: : Are there also possible plans of supporting User dictionaries so
: : that a memo can be compiled into the User dictionary and when the include
is
: : run, no compilation is required?

: That's an interesting idea. There are a few hurdles to its implementation;
let
: me think on it.

Glad I could come up with a possible extension idea, in fact, a User dictionary could also be a solution to not saving the system db.

Re: general quartus

Posted by [Neal Bridges](#) on October 21, 1998 at 11:16:11:

In Reply to: *Re: general quartus* posted by Jim Hendricks on October 21, 1998 at 10:51:08:

: Is there a word available right now to indicate that a word definition should
: be added to the system db permanently? This would be at least a partial
: solution, it would put the onus on the programmer to determine what persists.

Define the word within your startup.quartus memo. Then it'll be there every time you start Quartus.

Neal

Re: general quartus

Posted by Erwin on October 21, 1998 at 12:07:03:

In Reply to: *Re: general quartus* posted by Neal Bridges on October 21, 1998 at 11:16:11:

: Define the word within your startup.quartus memo. Then it'll be there every
: time you start Quartus.

: Neal

If I may chime in, I was very confused when the persistence feature of PilotForth was found gone in Quartus. Now I have learned to love a clean system on startup and have startup.quartus load in (only) my guaranteed-to-work tools. The time this takes can be neglected in comparison to not knowing what might hit you over the head.

/Erwin

Re: general quartus

Posted by [Jim Hendricks](#) on October 21, 1998 at 13:42:08:

In Reply to: *Re: general quartus* posted by Erwin on October 21, 1998 at 12:07:03:

: If I may chime in, I was very confused when the persistence feature of
: PilotForth was found gone in Quartus. Now I have learned to love a clean
system
: on startup and have startup.quartus load in (only) my guaranteed-to-work
tools.
: The time this takes can be neglected in comparison to not knowing what might
hit
: you over the head.

Makes sense, I think by forcing the user to decide what is available at startup is a cleaner approach, and maybe the startup time is negligible but what if you truly build a large library of tried and true words that you use as a foundation for most of what you do? That is why if you look at some of my other comments in this thread I was thinking of having the ability to choose which words get added to the system dict. or by having a separate dict. of user defined words. I see the advantage of having it in the dict. weather system or user as having no additional overhead at startup because all the words are already compiled. The advantage of having the words in a user dictionary is not only separation from system defined words but also the ability to drop the user dictionary prior to start if there is a word that may be hanging the system. Just my opinion as such and since I haven't used Forth in many years and it's like starting all over, my opinions may not reflect reality. Anyway, such a feature as convenient as it seems should not hold up release of a 1.0 product, maybe put it in the 1.1 or something.

Re: general quartus

Posted by Erwin on October 21, 1998 at 15:57:43:

In Reply to: *Re: general quartus* posted by Jim Hendricks on October 21, 1998 at 13:42:08:

Its up to Neal and it may be a challenge just for the heck of it (only *way* after I had written Include-Doc [the "real" one that Neal is still brooding over before placement in file-area] to please myself I started to create my reliable sources as doc-files), but for the mo the system interpretes from sources too bloody fast to bother about pre-compiled include dictionaries. Besides that I too often throw the towel and have to invoke COLD anyway...

/Erwin

solution to "startup problem"

Posted by [Tony Sanders](#) on October 22, 1998 at 18:12:03:

In Reply to: *Re: general quartus* posted by Erwin on October 21, 1998 at 15:57:43:

What I think people need is a memo note editor written in quartus. This way you don't have to exit quartus to make changes to a file and you keep your current context. I'm not a pilot programmer yet so I can't implement the editor part but here is what I'm thinking:

editor filename

```
( s n ) $editor \ string containing filename on stack
\ some might call it (editor)
```

Re: solution to "startup problem"

Posted by [Neal Bridges](#) on October 22, 1998 at 22:30:44:

In Reply to: *solution to "startup problem"* posted by Tony Sanders on October 22, 1998 at 18:12:03:

: What I think people need is a memo note editor written in quartus.
: This way you don't have to exit quartus to make changes to a file
: and you keep your current context. I'm not a pilot programmer yet
: so I can't implement the editor part but here is what I'm thinking:

: editor filename

```
: ( s n ) $editor \ string containing filename on stack
: \ some might call it (editor)
```

Could be done. I find ShiftHack serves my needs in this area.

Neal

Re: solution to "startup problem"

Posted by Erwin on October 23, 1998 at 04:25:25:

In Reply to: *Re: solution to "startup problem"* posted by Neal Bridges on October 22, 1998 at 22:30:44:

: Could be done. I find ShiftHack serves my needs in this area.

: Neal

I agree to the "not worth the effort", but it might be worth the educational exercise. And you sure meant *Switch*Hack.

/Erwin

Re: solution to "startup problem"

Posted by [Neal Bridges](#) on October 23, 1998 at 11:46:23:

In Reply to: *Re: solution to "startup problem"* posted by Erwin on October 23, 1998 at 04:25:25:

: : Could be done. I find ShiftHack serves my needs in this area.

: : Neal

: I agree to the "not worth the effort", but it might be worth the educational exercise. And you sure meant *Switch*Hack.

My first thought this morning was "Did I say ShiftHack?"

Hee hee. SwitchHack it is. ShiftHack serves my needs in other areas.

Neal

Re: general quartus

Posted by [Neal Bridges](#) on October 21, 1998 at 12:51:49:

In Reply to: *Re: general quartus* posted by Erwin on October 21, 1998 at 12:07:03:

: : Define the word within your startup.quartus memo. Then it'll be there every
: : time you start Quartus.

: : Neal

: If I may chime in, I was very confused when the persistence feature of

: PilotForth was found gone in Quartus. Now I have learned to love a clean system
: on startup and have startup.quartus load in (only) my guaranteed-to-work tools.
: The time this takes can be neglected in comparison to not knowing what might hit
: you over the head.

I agree with you, Erwin. I've come to really appreciate having the system come up clean each time.

Neal

Re: general quartus

Posted by [Jim Hendricks](#) on October 21, 1998 at 11:56:57:

In Reply to: *Re: general quartus* posted by Neal Bridges on October 21, 1998 at 11:16:11:

: : Is there a word available right now to indicate that a word definition should
: : be added to the system db permanently? This would be at least a partial
: : solution, it would put the onus on the programmer to determine what persists.

: Define the word within your startup.quartus memo. Then it'll be there every
: time you start Quartus.

Already doing that. That's where I was thinking that the idea of a User Dictionary would be a nice idea since the dictionary holds all the words in the compiled form. I would assume that the more words I put in the startup.quartus, the longer my session takes to establish. With a User Dictionary, or the ability to permanently put a word into the system dictionary, the compile is only done when I add the word, not everytime I start up. Obviously I may be completely off base since my knowledge of Forth is limited to small exposure about 15 years ago, and now to the last week that I have been looking at Quartus. By the way, thanks for the quick responses, I am a project manager at a software company and have been writing my responses between discussions with my teams about various projects. No sooner to I finish a conversation with one of my teams and I find there is already a response. Talk about service!! Thanks again!

Re: general quartus

Posted by [Neal Bridges](#) on October 21, 1998 at 12:08:12:

In Reply to: *Re: general quartus* posted by Jim Hendricks on October 21, 1998 at 11:56:57:

: : Define the word within your startup.quartus memo. Then it'll be there every
: : time you start Quartus.

: Already doing that. That's where I was thinking that the idea of a User
: Dictionary would be a nice idea since the dictionary holds all the words in
the

: compiled form. I would assume that the more words I put in the
: startup.quartus, the longer my session takes to establish. With a User

Yes, but you'd need to be including a fair amount of source to notice the time
it takes to compile.

: Dictionary, or the ability to permanently put a word into the system
: dictionary, the compile is only done when I add the word, not everytime I
start

: up. Obviously I may be completely off base since my knowledge of Forth is
: limited to small exposure about 15 years ago, and now to the last week that I

You're not off base -- it'd be a nice feature. There are some difficulties that
come to mind for the implementation, but perhaps I can overcome them.

: have been looking at Quartus. By the way, thanks for the quick responses, I
am

: a project manager at a software company and have been writing my responses
: between discussions with my teams about various projects. No sooner to I
: finish a conversation with one of my teams and I find there is already a
: response. Talk about service!! Thanks again!

My pleasure! It's good to get the feedback.

loadable wordlists?

Posted by [Tony Sanders](#) on October 23, 1998 at 14:19:14:

In Reply to: *Re: general quartus* posted by Neal Bridges on October 21, 1998 at 12:08:12:

On the subject of user dictionaries, (I'm new to the pilot so
forgive my ignorance on some of the issues) would it possible
to load and save wordlists as .PRC files?

Perhaps something along these lines:

```
import-words asm68k \ link to asm68k.PRC
asm68k set-current
```

```
code ... end-code
and
wordlist constant new-lib
also new-lib set-current
: newwords ... ;
code ... end-code

export-words new-lib \ make a new "system obj/PRC"

that way we could distribute larger forth libraries as
"pre-compiled" .PRC files.
```

Not every wordlist will work exported of course, you have to be careful about having external dependencies. Perhaps we could have : load ... ; and : unload ... ; called when you import and export the wordlist.

Re: general quartus

Posted by [Erwin Schomburg](#) on October 20, 1998 at 15:50:04:

In Reply to: *general quartus* posted by Jim Hendricks on October 20, 1998 at 15:09:57:

Obviously can't speak for intended pricing, but as for footprint see the two sample apps in the file area. For my app I have supplied the sources, silly as it may be, it covers a lot of the basics of Forth (input, output, defining words, some stack balancing acts etc.) and gives you a fairly good estimation of sourcecode-(functionality)to-footprint-ratio. The newer versions of the compiler have more hooks built in, so the app's footprint would be around 10k compiled with D.7.7 as compared to the 7k in D.7.1, but still impressive enough.

/Erwin

Re: general quartus

Posted by [Jim Hendricks](#) on October 21, 1998 at 09:32:22:

In Reply to: *Re: general quartus* posted by Erwin Schomburg on October 20, 1998 at 15:50:04:

: Obviously can't speak for intended pricing, but as for footprint see the two
: sample apps in the file area. For my app I have supplied the sources, silly
as
: it may be, it covers a lot of the basics of Forth (input, output, defining
: words, some stack balancing acts etc.) and gives you a fairly good estimation
of
: sourcecode-(functionality)to-footprint-ratio. The newer versions of the

compiler

: have more hooks built in, so the app's footprint would be around 10k compiled
: with D.7.7 as compared to the 7k in D.7.1, but still impressive enough.

Why would the size of the standalone compiled code increase just because of additional hooks? Your code itself hasn't changed so even if there are more hooks in the environment, if your not using these new hooks, why should they end up in the compiled code? Is this possibly just associated with this iteration of the beta of the developer with Neil planning on providing more optimizations to the standalone compile?

Thanks for the example code though, sadly I am just learning Forth so my progression through your code is very slow. Actually, you might be able to help me with a small question, at the beginning of the ice word in the eisbaer memo is the line "1000 Showform". Based on my previous experience programming on the pilot, I assume this shows the form with the resource identifier of 1000. How do you identify which pdb this resource should be pulled from? I realize that your app is compiled to standalone which means that you have your own pdb and the assumption is to pull the resource out of the pdb the code is running from. When in the interpreter though, how do you point the interpreter to your pdb resources? Once again though, thanks for the samples, I have alot to learn before I can begin to develop anything close to your sample. Luckily I am a quick learn!

Re: general quartus

Posted by Erwin on October 21, 1998 at 10:42:02:

In Reply to: *Re: general quartus* posted by Jim Hendricks on October 21, 1998 at 09:32:22:

: Why would the size of the standalone compiled code increase just because of
: additional hooks? Your code itself hasn't changed so even if there are more
: hooks in the environment, if your not using these new hooks, why should they
: end up in the compiled code? Is this possibly just associated with this
: iteration of the beta of the developer with Neil planning on providing more
: optimizations to the standalone compile?

I was talking without thinking, after posting this I *did* start to think along the same line as you, so I realized there is a little bug in the prc generation unnecessarily bloating resulting code size (already reported to Neal). When fixed the .prc would be just under 6k, at present state of optimization.

: Thanks for the example code though, sadly I am just learning Forth so my
: progression through your code is very slow. Actually, you might be able to
: help me with a small question, at the beginning of the ice word in the eisbaer
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: on the pilot, I assume this shows the form with the resource identifier of
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: own pdb and the assumption is to pull the resource out of the pdb the code is
: running from. When in the interpreter though, how do you point the
interpreter
: to your pdb resources? Once again though, thanks for the samples, I have alot
: to learn before I can begin to develop anything close to your sample. Luckily
: I am a quick learn!

The (default) forms resources 1000 and 1001 are present in Quartus interpreter,
by courtesy of Neal you can have them generated as default resource also in your
target .prc, but while the interpreter is already initialized to 1000 when
it starts to interact with you, the resulting app needs a hint which forms
resource is to be used initially, thats why the showform word needs to be
explicitely used in code meant for compilation.

/Erwin

Re: general quartus

Posted by [Jim Hendricks](#) on October 21, 1998 at 10:55:10:

In Reply to: *Re: general quartus* posted by Erwin on October 21, 1998 at
10:42:02:

: I was talking without thinking, after posting this I *did* start to think
along
: the same line as you, so I realized there is a little bug in the prc
generation
: unnecessarily bloating resulting code size (already reported to Neal). When
: fixed the .prc would be just under 6k, at present state of optimization.

cool, 1k less than the current deployed standalone, nice to know the
optimizations are moving us in the right direction!!!

: The (default) forms resources 1000 and 1001 are present in Quartus
interpreter,
: by courtesy of Neal you can have them generated as default resource also in
your
: target .prc, but while the interpreter is already initialized to 1000 when
: it starts to interact with you, the resulting app needs a hint which forms
: resource is to be used initially, thats why the showform word needs to be
: explicitely used in code meant for compilation.

Thanks, that explains it, I would assume then that to use other resources, a
systrap or one of the words extending a systrap would be needed.

Re: general quartus

Posted by [Matthias Schneider](#) on October 21, 1998 at 10:48:57:

In Reply to: *Re: general quartus* posted by Erwin on October 21, 1998 at 10:42:02:

: The (default) forms resources 1000 and 1001 are present in Quartus
interpreter,
: by courtesy of Neal you can have them generated as default resource also in
your
: target .prc, but while the interpreter is already initialized to 1000 when
: it starts to interact with you, the resulting app needs a hint which forms
: resource is to be used initially, thats why the showform word needs to be
: explictely used in code meant for compilation.

: /Erwin

Erwin, I think you're not totally right at this point. I haven't used the
"Showform"-Command in my Standalone-Apps - and they are working.
Is it possible that the "page"-command which I usually use is doing the same?

Matthias

Re: general quartus

Posted by [Neal Bridges](#) on October 21, 1998 at 11:20:17:

In Reply to: *Re: general quartus* posted by Matthias Schneider on October 21,
1998 at 10:48:57:

: Erwin, I think you're not totally right at this point. I haven't used the
: "Showform"-Command in my Standalone-Apps - and they are working.
: Is it possible that the "page"-command which I usually use is doing the same?

It's not the same. You can operate without an initialized form, I've done it
too -- it seems wiser to bring up the blank form, however.

Neal

Re: general quartus

Posted by Erwin on October 21, 1998 at 11:05:56:

In Reply to: *Re: general quartus* posted by Matthias Schneider on October 21, 1998 at 10:48:57:

: Erwin, I think you're not totally right at this point. I haven't used the
: "Showform"-Command in my Standalone-Apps - and they are working.
: Is it possible that the "page"-command which I usually use is doing the same?
:
: Matthias

As the showform gives you a blank page, you might be right (or just lucky), need to check (or ask Neal).

/Erwin

Re: general quartus

Posted by [Neal Bridges](#) on October 21, 1998 at 10:15:39:

In Reply to: *Re: general quartus* posted by Jim Hendricks on October 21, 1998 at 09:32:22:

: Thanks for the example code though, sadly I am just learning Forth so my
: progression through your code is very slow. Actually, you might be able to
: help me with a small question, at the beginning of the ice word in the eisbaer
: memo is the line "1000 Showform". Based on my previous experience programming
: on the pilot, I assume this shows the form with the resource identifier of
: 1000. How do you identify which pdb this resource should be pulled from? I
1000 is a Quartus form -- a blank screen with a graffiti indicator. This is
available to stand-alone apps, as is 1001, a blank screen without a graffiti
indicator.

: realize that your app is compiled to standalone which means that you have your
: own pdb and the assumption is to pull the resource out of the pdb the code is
: running from. When in the interpreter though, how do you point the
interpreter
: to your pdb resources? Once again though, thanks for the samples, I have alot
: to learn before I can begin to develop anything close to your sample. Luckily
: I am a quick learn!

Keep watching the forum; I'll be posting the general method for using resources from your own resource database, and showing how the stand-alone development beta users can pull those resources into stand-alone apps.

Neal

Re: general quartus

Posted by [Jim Hendricks](#) on October 21, 1998 at 10:59:18:

In Reply to: *Re: general quartus* posted by Neal Bridges on October 21, 1998 at 10:15:39:

: 1000 is a Quartus form -- a blank screen with a graffiti indicator. This is
: available to stand-alone apps, as is 1001, a blank screen without a graffiti
: indicator.

Thanks for the details, can I assume then that the pre-init form for the
interpreter is 1000? And as a corelarry, I could in the interpreter switch over
to the 1001 to gain the extra line?

: Keep watching the forum; I'll be posting the general method for using
resources
: from your own resource database, and showing how the stand-alone development
: beta users can pull those resources into stand-alone apps.

Thanks, I will look forward to the learning experience!

Available Forms (was Re: general quartus)

Posted by [Neal Bridges](#) on October 21, 1998 at 11:17:46:

In Reply to: *Re: general quartus* posted by Jim Hendricks on October 21, 1998 at 10:59:18:

: : 1000 is a Quartus form -- a blank screen with a graffiti indicator. This is
: : available to stand-alone apps, as is 1001, a blank screen without a graffiti
: : indicator.

: Thanks for the details, can I assume then that the pre-init form for the
: interpreter is 1000? And as a corelarry, I could in the interpreter switch
over
: to the 1001 to gain the extra line?

Yes, you could -- but you'd lose the graffiti shift-state indicator and the
system menu.

Neal

Developers: D.7.7 Mailed this morning

Posted by [Neal Bridges](#) on October 20, 1998 at 11:40:02:

As per the subject, I sent Quartus D.7.7 (just the PRC) to the Development beta testers.

It fixes the bug I was discussing earlier.

If you expected to receive it and didn't, let me know.

Neal

D.7.6 made PRCs undeleteable

Posted by [Erwin Schomburg](#) on October 17, 1998 at 17:30:17:

Your Quartus-compiled app may become undeleteable because the database does not close, don't panic, do a normal reset to overcome until Neal fixes.

/Erwin

Re: D.7.6 made PRCs undeleteable

Posted by [Neal Bridges](#) on October 18, 1998 at 23:36:35:

In Reply to: *D.7.6 made PRCs undeleteable* posted by Erwin Schomburg on October 17, 1998 at 17:30:17:

: Your Quartus-compiled app may become undeleteable because the database does not

: close, don't panic, do a normal reset to overcome until Neal fixes.

Found the bug! It's the smallest bug I've ever seen, with the oddest consequences. I've fixed it; I'll test to make sure it's dead, and re-release tomorrow.

Neal

Quartus 0.7.6B and D.7.6B Released

Posted by [Neal Bridges](#) on October 17, 1998 at 12:41:34:

Hi! I've posted the latest general-distribution beta, 0.7.1B to the Quartus File Area. Development testers have been mailed the stand-alone PRC generation version, D.7.1B. Aside from the additional features in the development beta, the releases are identical.

Upcoming features:

- '! for storing relocatable XTs
- addrsrc, delrsrc for copying external resources into a compiled PRC

I've also begun work on the release documentation, and sample code showing how external resources can be directly used within your apps.

Looking forward to your feedback!

Neal

- [File Area](#)

Testers: Report!

Posted by [Neal Bridges](#) on October 14, 1998 at 16:58:32:

Hi folks. I'm ready to put up another beta-- this is a last call for feedback on the previous (.7.1b) version before I post.

Neal

Re: Testers: Report!

Posted by [Matthias Schneider](#) on October 16, 1998 at 02:49:10:

In Reply to: *Testers: Report!* posted by Neal Bridges on October 14, 1998 at 16:58:32:

: Hi folks. I'm ready to put up another beta-- this is a last call for feedback
: on the previous (.7.1b) version before I post.

: Neal

Hi Neal,

I haven't even received your D.7.1b yet!! (though posting you feedback on 0.7.0b with PRC-capability)

What went wrong?

Matthias

Re: Testers: Report!

Posted by [Neal Bridges](#) on October 16, 1998 at 15:30:17:

In Reply to: *Re: Testers: Report!* posted by Matthias Schneider on October 16, 1998 at 02:49:10:

: : Hi folks. I'm ready to put up another beta-- this is a last call for feedback

: : on the previous (.7.1b) version before I post.

: : Neal

: Hi Neal,

: I haven't even received your D.7.1b yet!! (though posting you feedback on 0.7.0b

: with PRC-capability)

: What went wrong?

Had a tiny bit of down-time -- I'll be releasing it tonight.

Neal

Re: Testers: Report!

Posted by [Erwin Schomburg](#) on October 14, 1998 at 17:59:08:

In Reply to: *Testers: Report!* posted by Neal Bridges on October 14, 1998 at 16:58:32:

: Hi folks. I'm ready to put up another beta-- this is a last call for feedback
: on the previous (.7.1b) version before I post.

: Neal

Pew, you came a long way from early PilotForth to current status of Quartus, compliments. Apart from the hopefully cured erratics with PIIIs it behaves well. The subset of words I used did not show any unexpected behaviour in use.

I don't know if you should programmatically suppress the use of "raw" ticked tokens in compiled apps or if its done with "you should know better than even to try" (I know that a special mechanism for handling execution of XTs in .PRCs is under way, but still the usage of "raw" execution tokens will have unpredictable

consequences if executed in a .PRC).

Hot topics on the wishlist (you said its in the works, I know, just to emphasise) dealing with resources (buttons 'n stuff) and more extensive (and up to date) documentation.

/Erwin

bitmap.txt and tinynums.txt now available in the File Area

Posted by [Neal Bridges](#) on October 14, 1998 at 13:57:06:

I've uploaded *bitmaps.txt* and *tinynums.txt* to the Quartus File Area.

bitmaps provides a defining word for creating small inline bitmaps that can draw themselves.

tinynums is an example of using *bitmap* to draw very small numbers -- it provides *tinyemit* and *tinycr*.

Neal

- [File Area](#)

Good News! (BYE bug on PIII)

Posted by [Neal Bridges](#) on October 12, 1998 at 19:11:38:

Looks like it's fixed -- it's in testing now. If it's good, 0.7.5B (and D.7.5B for the stand-alone PRC testers) will go out tomorrow.

Neal

Re: Good News! (BYE bug on PIII)

Posted by [Neal Bridges](#) on October 13, 1998 at 03:40:03:

In Reply to: *Good News! (BYE bug on PIII)* posted by Neal Bridges on October 12, 1998 at 19:11:38:

: Looks like it's fixed -- it's in testing now. If it's good, 0.7.5B (and D.7.5B

: for the stand-alone PRC testers) will go out tomorrow.

: Neal

Woo hoo! Quartus 0.7.5B successfully handled a million 'gremlins' on the PalmOS emulator.

Stay tuned.

Neal

Re: Good News! (BYE bug on PIII)

Posted by [Kris Bosland](#) on October 13, 1998 at 13:56:33:

In Reply to: *Re: Good News! (BYE bug on PIII)* posted by Neal Bridges on October 13, 1998 at 03:40:03:

: Woo hoo! Quartus 0.7.5B successfully handled a million 'gremlins' on the PalmOS
: emulator.

: Neal

Neal, if you don't mind my asking, what development system are you using, particularly emulation? I am looking for an emulator that will let me hotsync without cable shenanigans.

-Kris

Re: Good News! (BYE bug on PIII)

Posted by [Neal Bridges](#) on October 13, 1998 at 14:40:11:

In Reply to: *Re: Good News! (BYE bug on PIII)* posted by Kris Bosland on October 13, 1998 at 13:56:33:

: : Woo hoo! Quartus 0.7.5B successfully handled a million 'gremlins' on the
: PalmOS
: : emulator.

: : Neal

: Neal, if you don't mind my asking, what development system are you using,
: particularly emulation? I am looking for an emulator that will let me hotsync
: without cable shenanigans.

Don't mind in the least. Quartus is developed using Pila (Beta 3 Fluff 6), pre-processed with M4. I test under the PalmOS Emulator 2.0b3, against PalmOS 1, 2, and 3 (both real and debug) ROM images. Regression and unit tests are done on a PalmPilot Professional and a Palm III.

The PalmOS emulator doesn't permit a HotSync without cable shenanigans, though -- of course you can right-click to load new PRCs, but a real HotSync needs the wires.

Neal

Re: Good News! (BYE bug on PIII)

Posted by [Erwin Schomburg](#) on October 13, 1998 at 04:49:38:

In Reply to: *Re: Good News! (BYE bug on PIII)* posted by Neal Bridges on October 13, 1998 at 03:40:03:

: Woo hoo! Quartus 0.7.5B successfully handled a million 'gremlins' on the PalmOS
: emulator.

: Stay tuned.

: Neal

More Whoo hoo: As D.7.5β it has not trashed on my system yet while coexisting with 255 other databases of which seven are active Hacks.

Some fine tuning for the "D" part required though, it says it were D.7.1β in the splashscreen and it does not compile a proper bye into the generated app (fallback to previous app instead of the launcher).

/Erwin

Re: Good News! (BYE bug on PIII)

Posted by [Neal Bridges](#) on October 13, 1998 at 12:31:23:

In Reply to: *Re: Good News! (BYE bug on PIII)* posted by Erwin Schomburg on October 13, 1998 at 04:49:38:

: More Whoo hoo: As D.7.5β it has not trashed on my system yet while coexisting
: with 255 other databases of which seven are active Hacks.

: Some fine tuning for the "D" part required though, it says it were D.7.1β in the
: the

: splashscreen and it does not compile a proper bye into the generated app
: (fallback to previous app instead of the launcher).

You're the only one with that particular version, Erwin -- to get a confidence level from someone who was experiencing crashes with BYE and the Palm III. I've resolved those issues for the general release -- later today.

Neal

Re: Good News! (BYE bug on PIII)

Posted by Erwin on October 13, 1998 at 12:49:48:

In Reply to: *Re: Good News! (BYE bug on PIII)* posted by Neal Bridges on October 13, 1998 at 12:31:23:

: You're the only one with that particular version, Erwin -- to get a confidence
: level from someone who was experiencing crashes with BYE and the Palm III.

I've

: resolved those issues for the general release -- later today.

: Neal

I was aware of that, but just to get positive feedback through to you after testing through all previously reproduceable crashconditions on a real life and previously haunted system while away from e-mail facilities but able to grab a minute while an active browser was left alone.... 8-)

Its still behaving well!

/Erwin

I have a Palm III!

Posted by [Neal Bridges](#) on October 09, 1998 at 21:25:12:

Thanks to my pal Paul D'Amelio, and my impending birthday, I've got a Palm III. Expect the bug to be killed soon.

Neal

Re: I have a Palm III!

Posted by [Erwin Schomburg](#) on October 10, 1998 at 00:24:43:

In Reply to: *I have a Palm III!* posted by Neal Bridges on October 09, 1998 at 21:25:12:

: Thanks to my pal Paul D'Amelio, and my impending birthday, I've got a Palm
: III.

: Expect the bug to be killed soon.

: Neal

Congratulations, welcome, damn PIII user! 8-)

/Erwin

docinc.txt (DocInclude) Now available

Posted by [Neal Bridges](#) on October 09, 1998 at 17:18:36:

Check out the Quartus File Area for *docinc.txt*, a module providing DocInclude. It allows source to be included from Doc-format (AportisDOC) documents-- so you can edit new documents using QED or another Doc editor, or convert and import them from the desktop, overcoming the 4K MemoPad limit. It's based on Erwin Schomburg's work. Thank you Erwin!

I've documented the module quite a bit; let me know if any of it is confusing.

What it does:

- Allows free intermixing of *included* and *DocIncluded* files
- Doc files can be nested to any reasonable depth
- Responds to the echo setting for displaying incoming source, just as *include* does
- Converts tabs to spaces
- Ignores bookmarks

What isn't provided:

- *DocNeeds* -- there's a small hurdle I'll overcome soon. Doc filenames can have embedded spaces; I need to provide a defining word in the kernel to support this before I can provide *DocNeeds*.
- REFILL doesn't work within Doc interpreted source. Probably I won't address this unless there's some need for it (I can't presently imagine one).

Neal

- [File Area](#)

Re: docinc.txt (DocInclude) Now available

Posted by [Erwin Schomburg](#) on October 10, 1998 at 01:15:12:

In Reply to: *docinc.txt (DocInclude) Now available* posted by Neal Bridges on October 09, 1998 at 17:18:36:

: Check out the Quartus File Area for *docinc.txt*,
--snipped

Its a pity one can't serve them all.

I have been inconsistent in my first attempt myself, but allowing long lines gets you an abort if you split lines in between quotes or on a long "\ comment" line ("quotes" used as generic for quotes, brackets, etc,. and it would be very tricky to catch them all as you can invent your own!), so I opted for a checked counter and set an 80 char per line limit, as being more consistent with Forth rules and conventions.

Whilst you are "0 PARSEing" filenames you allow for spaces in filenames, OTOH an accidental space in the INCLUDE line will give you a file not found as your winning prize (and prevents an easy NEEDS-DOC). Hmmmm. Couldn't just disallow spaces in Quartus-doc files, could you?

/Erwin

Re: docinc.txt (DocInclude) Now available

Posted by Erwin on October 10, 1998 at 15:45:53:

In Reply to: *Re: docinc.txt (DocInclude) Now available* posted by Erwin Schomburg on October 10, 1998 at 01:15:12:

OK, I did it. If you can live with having to put docfilenames in quotes (like DOCinclude "This File"), you can have all the spaces in docfilenames you like, and I have the DOCneeds word as well thrown in. I'll send you the file, see if you like what you get and if you want to put it up in the file area.

/Erwin

Re: docinc.txt (DocInclude) Now available

Posted by [Neal Bridges](#) on October 10, 1998 at 18:44:38:

In Reply to: *Re: docinc.txt (DocInclude) Now available* posted by Erwin on October 10, 1998 at 15:45:53:

: OK, I did it. If you can live with having to put docfilenames in quotes (like
: DOCinclude "This File"), you can have all the spaces in docfilenames you like,
: and I have the DOCneeds word as well thrown in. I'll send you the file, see if
: you like what you get and if you want to put it up in the file area.

I have your file. You can have spaces in the one I provide also -- it's just that the 'create' word in your DocNeeds doesn't pay any attention to anything past first word. The next Quartus beta will have (header) (c-addr u --) for this purpose.

Neal

Eisbär.zip: An Icelandic Drinking Puzzle -- now in the File Area

Posted by [Neal Bridges](#) on October 08, 1998 at 23:31:48:

Eisbär is an Icelandic drinking puzzle, implemented in Forth by Erwin Schomburg. Source code is provided in the zip. It has been compiled into a stand-alone PRC using Quartus D.7.1B.

Look for it in the Quartus File Area. Thanks Erwin!

Neal

- [File Area](#)
-

Include-Doc

Posted by [Erwin Schomburg](#) on October 08, 1998 at 12:05:35:

In reference to Neal once having said "one more reason for include from doc" (or something to this effect).....

Needs to be refined (?)
but works.

```
\ inc-doc ERS 98.10.08
\ Note: unlike INCLUDE,
\ DOC-INCLUDES can not
\ be nested!
needs doc \ from Neal's file area
```

```
create Eval-Buf 120 allot
variable Eval-IN

: Eval-Record ( c-addr u -- )
over + swap do
i c@ dup
13 = if drop 10 then
dup dup 32 = Eval-IN @ 80 > and
swap
10 = or if
drop
Eval-Buf Eval-IN @
2dup type
EVALUATE
0 Eval-IN !
else
```

```
Eval-Buf Eval-IN @ + c!  
1 Eval-IN +!  
then  
loop ;  
  
: doc-include ( -- incname )  
0 Eval-IN !  
DmModeReadOnly  
32 parse 2dup + 0 swap c! 1 +  
OpenDocDB  
2dup DmNumRecords 1 do  
i GetRecord Eval-Record  
loop CloseDB ;
```

Re: Include-Doc

Posted by [Neal Bridges](#) on October 08, 1998 at 15:16:36:

In Reply to: *Include-Doc* posted by Erwin Schomburg on October 08, 1998 at 12:05:35:

```
: In reference to Neal once having said "one more reason for include from  
: doc" (or something to this effect).....
```

```
: Needs to be refined (?)  
: but works.  
[code snipped]
```

Neat, Erwin. I'll give that a try soon.

I worked out a way that DOC source can be nested-- it's on my list of futures to implement. Obviously simply recursing won't work -- decoding DOC files requires a 4K buffer... at 4K per nested DOC, you'd quickly run out of dynamic RAM.

If you want to have a go at it, the key thing is to record what database, record, and offset you're currently processing before you nest, re-opening that database and decoding that record when you return.

Neal

Re: Include-Doc

Posted by Erwin on October 08, 1998 at 15:56:59:

In Reply to: *Re: Include-Doc* posted by Neal Bridges on October 08, 1998 at 15:16:36:

: Neat, Erwin. I'll give that a try soon.

: I worked out a way that DOC source can be nested-- it's on my list of futures to

: implement. Obviously simply recursing won't work -- decoding DOC files requires

: a 4K buffer... at 4K per nested DOC, you'd quickly run out of dynamic RAM.

: If you want to have a go at it, the key thing is to record what database, record, and offset you're currently processing before you nest, re-opening that

: database and decoding that record when you return.

: Neal

I figured that as well, just wanted to have (and share) the generic works. Lets see how fast I get around to nesting it (as I told you, layers of dust on my Forth skills...).

/Erwin

Re: Include-Doc

Posted by Erwin on October 09, 1998 at 08:50:51:

In Reply to: *Re: Include-Doc* posted by Erwin on October 08, 1998 at 15:56:59:

Oops that was easy:

Rules are max 80 chars per line, last char in file a linefeed, nesting level 10, linelength and nesting level defineable by user. Watch out: database names are case sensitive.

Enjoy

/Erwin

\ include-doc 98.10.09 ERS
\ with modified elements from
\ doc 98.7.24 5:57 pm NAB

needs DataMgr
needs core-ext
needs condthens
needs double

```

: checked-counter create , 0 ,
does> dup dup @ swap 1 cells + @ <
if abort" exceeding counter limit"
else 1 cells + then ;

9 checked-counter doc-depth
create deep-doc 10 2 cells * allot
create deep-index 10 cells allot

\ Fixed buffer for decompression.
create out 4096 allot
variable #out
: out, ( c -- )
out #out @ + c! 1 #out +! ;

\ Decompress a Doc record from a
\ 32-bit address to a fixed buffer.
: Decompress ( addr. len -- a n )
0 #out ! >r 2dup r> m+ 2swap
( end. addr. )
begin 2dup c@a
cond
\ 0, 9..127: verbatim
dup 0= over 9 128 within or if out,
\ 128..191: repeat earlier sequence
else dup 128 192 within if
>r 1 m+ 2dup c@a r> 8 lshift +
dup 16383 and 3 rshift
swap 7 and 3 + 0 do
out #out @ + over - c@ out,
loop drop
\ 192..255: space plus char&127
else dup 192 256 within if
bl out, 127 and out,
\ 1..8: escape next n chars
else dup 1 9 within if
0 do 1 m+ 2dup c@a out, loop
thens
1 m+
2over 2over d= until
2drop 2drop out #out @ ;

\ Get a record from the current open
\ Doc file and decompress to a fixed
\ buffer.
: GetRecord ( index -- addr u )
dup
dup deep-index doc-depth @ 1 - cells + !
deep-doc doc-depth @ 1 - 2 cells * + 2@ DmQueryRecord
2dup MemHandleSize drop >r
MemHandleLock
2dup r> Decompress 2>r
MemPtrUnlock throw

```

```
false swap deep-doc doc-depth @ 1 - 2 cells * + 2@
DmReleaseRecord throw 2r> ;
```

```
: OpenDocDB
( mode zaddr len -- )
OpenDB deep-doc doc-depth @ 2 cells * + 2!
1 doc-depth +! ;
```

```
: CloseDocDB ( -- )
deep-doc doc-depth @ 1 - 2 cells * + 2@
CloseDB
-1 doc-depth +!
doc-depth @ dup
if 1 - cells deep-index + @
GetRecord
else
drop
then ;
```

```
\ inc-doc ERS 98.10.09
\ Note: INCLUDE-DOCS,
\ now be nested (10 deep)
```

```
create Eval-Buf 80 allot
79 checked-counter Eval-IN
```

```
: Eval-Record ( c-addr u -- )
over + swap do
i c@ dup
13 = if drop 10 then
dup
10 = if
drop
Eval-Buf Eval-IN @
\ 2dup type cr \ for visible feedback
0 Eval-IN !
EVALUATE
Else
Eval-Buf Eval-IN @ + c!
1 Eval-IN +!
then
loop ;
```

```
: include-doc ( -- incname )
0 Eval-IN !
DmModeReadOnly
32 parse 2dup + 0 swap c! 1 +
OpenDocDB
deep-doc doc-depth @ 1 - 2 cells * + 2@
DmNumRecords 1 do
i GetRecord Eval-Record
```

```
loop CloseDocDB ;

: needs-doc ( -- incname )
0 Eval-IN !
DmModeReadOnly
32 parse 2dup
(find)
if 2drop drop exit
else 2dup dup >in @ swap - >in !
create
then
+ 0 swap c! 1 +
OpenDocDB
deep-doc doc-depth @ 1 - 2 cells * + 2@
DmNumRecords 1 do
i GetRecord Eval-Record
loop CloseDocDB ;
```

Re: Include-Doc

Posted by [Neal Bridges](#) on October 09, 1998 at 11:35:44:

In Reply to: *Re: Include-Doc* posted by Erwin on October 09, 1998 at 08:50:51:

```
: Oops that was easy:
: Rules are max 80 chars per line, last char in file a linefeed, nesting level
10,
: linelength and nesting level defineable by user. Watch out: database names are
: case sensitive.
```

Erwin, that's quite an effort. There's a way to do this that doesn't require modifications to the *doc* module, and will allow nesting far greater than 10 deep without the need for a special storage structure. I've got most of it down, I'll post soon.

Neal

Re: Include-Doc

Posted by Erwin on October 09, 1998 at 14:23:58:

In Reply to: *Re: Include-Doc* posted by Neal Bridges on October 09, 1998 at 11:35:44:

```
: Erwin, that's quite an effort. There's a way to do this that doesn't require
: modifications to the doc module, and will allow nesting far greater
: than 10 deep without the need for a special storage structure. I've got most
```

of
: it down, I'll post soon.

: Neal

Gimme a hint, since I get back to speed, I think I could do it by stack juggling in another day or three. Nevertheless, unless you pull something very surprising out of the hat, the principle looks sound to me. Only real enhancement would be to have it look for memo *or* doc in kernel supplied INCLUDE and/or NEEDS , but that would mean to catch the respective file not found's before they trigger ABORT. I'm not up to exception handlers so far.

/Erwin

FrmNewForm, CtlNewControl, etc...

Posted by [Christian W. Althausen](#) on October 08, 1998 at 09:23:09:

Does anyone know the number of those Systrap ?

FrmNewForm
FrmNewBitmap
FrmNewGadget
FldNewField
CtlNewControl
...

Since I don't know how to use a resource file I was trying to create something on-the-fly. Also, is this slower than using compiled resources ?

Tanks for helping,

Chris

Re: FrmNewForm, CtlNewControl, etc...

Posted by [Neal Bridges](#) on October 08, 1998 at 09:39:52:

In Reply to: *FrmNewForm, CtlNewControl, etc...* posted by Christian W. Althausen on October 08, 1998 at 09:23:09:

: Since I don't know how to use a resource file I was trying to create something
: on-the-fly. Also, is this slower than using compiled resources ?

To answer your second question -- shouldn't be any slower in actual use. The dynamic resource facilities only exist in the 3.x version of the ROM, though -- only on Palm III devices. Using them limits the downward compatibility of your application.

I'll be showing how to use resource files soon. It's simple.

Neal

Re: FrmNewForm, CtlNewControl, etc...

Posted by [Neal Bridges](#) on October 08, 1998 at 09:37:43:

In Reply to: *FrmNewForm, CtlNewControl, etc...* posted by Christian W. Althausen on October 08, 1998 at 09:23:09:

: Does anyone know the number of those Systrap ?

: FrmNewForm
: FrmNewBitmap
: FrmNewGadget
: FldNewField
: CtlNewControl
: ...

: Since I don't know how to use a resource file I was trying to create something on-the-fly. Also, is this slower than using compiled resources ?

: Tanks for helping,

: Chris

Chris, have a look at the link I've provided -- there's an earlier message that covers this. I dug it up using my site's search engine.

Neal

- [Previous message about Palm III systraps](#)

In the File Area: Regs.txt

Posted by [Neal Bridges](#) on October 07, 1998 at 16:35:31:

regs.txt is available in the Quartus File Area. It's an extension to *asm68k* that displays the current contents of all 16 CPU registers. Needed it for something I was working on, so I thought I'd make it available.

Neal

A real source for info?

Posted by [Chad Montplaisir](#) on October 07, 1998 at 16:26:39:

I wish to use Forth to program since I have a large dislike for C/C++, now (Hey, I learned a real language-- PL/I.. :o)) The most calls use data constructs for things (rectangle, bitmap, etc..) and yet I have not be able to easily find them. I've downloaded a few C packages, but unfortunetly true to C's nature, the constructs are generally strewn across .h files. Does anyone know of a more simplier place that covers them or is anyone working on making a reasonable resource package that declares most of those types already? I've got some real basics written (allocating memory and objects). Anyone like to work towards a freeware package of common code?

Chad

Dynamically created bitmaps (was Re: A real source for info?)

Posted by [Neal Bridges](#) on October 07, 1998 at 16:50:46:

In Reply to: *A real source for info?* posted by Chad Montplaisir on October 07, 1998 at 16:26:39:

: I wish to use Forth to program since I have a large dislike for C/C++,
: now (Hey, I learned a real language-- PL/I.. :o)) The most calls use data
: constructs for things (rectangle, bitmap, etc..) and yet I have not be able
: to easily find them. I've downloaded a few C packages, but unfortunetly
: true to C's nature, the constructs are generally strewn across .h files.
: Does anyone know of a more simplier place that covers them or is anyone
working
: on making a reasonable resource package that declares most of those types
: already? I've got some real basics written (allocating memory and objects).
: Anyone like to work towards a freeware package of common code?

: Chad

Hi Chad. The official source for the layout of the various PalmOS structures is in the .H files supplied free with the documentation from the 3Com site (see my links page). Another place to look is the PILOT.INC file that ships with the Pila assembler (in the ASDK). Same information, slightly different layout.

Rectangles are made of four consecutive cells -- topX, topY, extentX, extentY.

As for bitmaps, here's an example of dynamically creating a new bitmap using Quartus:

```
\ bitmap
decimal
create mybitmap
16 , 16 , \ width height (in pixels)
2 , \ bytes/row
0 , \ flags
0 , 0 , 0 , 0 , \ reserved
2 base ! \ switch to binary
1111111111111111 ,
1000000000000001 ,
1000000000000001 ,
1000000000000001 ,
1000000000000001 ,
1000000000000001 ,
1000001111000001 ,
1000001111000001 ,
1000001111000001 ,
1000001111000001 ,
1000001111000001 ,
1000000000000001 ,
1000000000000001 ,
1000000000000001 ,
1000000000000001 ,
1000000000000001 ,
1000000000000001 ,
1000000000000001 ,
1000000000000001 ,
1000000000000001 ,
1000000000000001 ,
1000000000000001 ,
1111111111111111 ,
decimal
80 80 mybitmap >abs WinDrawBitmap
```

Re: Dynamically created bitmaps (was Re: A real source for info?)

Posted by [Neal Bridges](#) on October 07, 1998 at 20:24:04:

In Reply to: *Dynamically created bitmaps (was Re: A real source for info?)*
posted by Neal Bridges on October 07, 1998 at 16:50:46:

I just updated bitmap.txt to have a far more interesting bitmap than it did when I threw it together earlier.

Neal

- [File Area](#)

Re: Dynamically created bitmaps (was Re: A real source for info?)

Posted by [Neal Bridges](#) on October 07, 1998 at 21:00:08:

In Reply to: *Re: Dynamically created bitmaps (was Re: A real source for info?)* posted by Neal Bridges on October 07, 1998 at 20:24:04:

: I just updated bitmap.txt to have a far more interesting bitmap than it did when

: I threw it together earlier.

: Neal

And one last change: renamed the file to *telephone.txt*. I'm making a library module called *bitmap.txt* that takes advantage of Forth's strengths to make a defining bitmap word. Will post shortly.

Neal

Glossary of Commonly Used PalmOS sysstraps in Quartus

Posted by [Neal Bridges](#) on October 06, 1998 at 00:02:40:

Check the Quartus File Area for a glossary of commonly used PalmOS sysstrap functions in Quartus. There's 80-odd sysstraps documented in Standard Forth style.

Neal

- [File Area](#)

Breaking out of a running program

Posted by [Neal Bridges](#) on October 05, 1998 at 14:02:11:

Now that the "Abort" menu item has been wired in, it's handy to be able to interrupt program flow during development even when you're not directly handling events. To that end, here's a useful word:

```
: ?break ekey? if ekey drop then ;
```

This can be used to redefine any word you want to allow to be interrupted, such as TYPE and . and CR

```
: TYPE ?break TYPE ;  
: CR ?break CR ;  
: . ?break . ;
```

Fatal error on Quartus exit

Posted by [Jim Weirich](#) on October 05, 1998 at 12:57:18:

There has been some discussion regarding exiting Quartus cleanly on Palm IIIs. It wasn't clear from the discussion if the problem has been fixed in all cases, but I am experiencing the following problem.

Whenever I leave quartus, I get a Fatal Error dialog with the text "Fatal Exception". This happens if I type BYE, or just switch to another app.

Details:

- Quartus 0.7.1B
- Palm Pilot, recently upgraded with the Palm III OS and IR port.
- SwitchHack, MenuHack, and AppHach installed but disabled.

Any ideas?

-- Jim Weirich

Re: Fatal error on Quartus exit

Posted by [Neal Bridges](#) on October 05, 1998 at 13:40:51:

In Reply to: *Fatal error on Quartus exit* posted by Jim Weirich on October 05, 1998 at 12:57:18:

: Whenever I leave quartus, I get a Fatal Error dialog with the text "Fatal Exception". This happens if I type BYE, or just switch to another app.

Two other questions: did you delete any previous version of Quartus before loading, and are you running any other position-dependent code (such as AlarmHack -- which, despite its name is not a HackMaster hack)?

Neal

Major Clue! (was: Fatal error on Quartus exit)

Posted by [Jim Weirich](#) on October 06, 1998 at 22:08:17:

In Reply to: *Re: Fatal error on Quartus exit* posted by Neal Bridges on October 05, 1998 at 13:40:51:

: : Whenever I leave quartus, I get a Fatal Error dialog with the text "Fatal
: : Exception". This happens if I type BYE, or just switch to another app.

: Two other questions: did you delete any previous version of Quartus before
: loading, and are you running any other position-dependent code (such as
: AlarmHack -- which, despite its name is not a HackMaster hack)?

: Neal

I just did the following ...

- o Deleted HackMaster and all hacks (switch, menu, and app)
- o Deleted Quartus
- o Warm reset the pilot
- o Reinstalled a fresh copy of Quartus
- o Started Quartus
- o Typed BYE (exited to application launcher normally)
- o Started Quartus again
- o Tapped the Applications soft button -- Got a Fatal Error
- o Warm reset, delete Quartus, reload Quartus
- o Started Quartus
- o Exited by tapping the App soft button -- Exited normally
- o Restarted Quartus
- o Typed BYE -- Got a Fatal Error
- o Warm reset
- o Remembered someone mentioned the Beam On setting
- o Went to prefs, turned the Beam Receive option to OFF
- o Started and exited Quartus several times with no problems
- o Turned Beam Receive back on ... Quartus bombs on exit

Looks like the culprit in my case is the Beam Receive On setting.
With all the hacks removed, it looks like you get one clean exit
from Quartus with the beam setting on.

Hope this helps.

Re: Major Clue! (additional info)

Posted by [Jim Weirich](#) on October 06, 1998 at 23:28:56:

In Reply to: *Major Clue! (was: Fatal error on Quartus exit)* posted by Jim Weirich on October 06, 1998 at 22:08:17:

: : : Whenever I leave quartus, I get a Fatal Error dialog with the text "Fatal
: : : Exception". This happens if I type BYE, or just switch to another app.

: : Two other questions: did you delete any previous version of Quartus before
: : loading, and are you running any other position-dependent code (such as
: : AlarmHack -- which, despite its name is not a HackMaster hack)?

: : Neal

: I just did the following ...

[... elided lots of steps determining its a Beam On problem ...]

I also went back and reinstalled Hackmaster and reenabled all the hacks. As long as the Beam Receive option is OFF, it works fine, even with the hacks.

-- Jim Weirich

Re: Major Clue! (additional info)

Posted by [Neal Bridges](#) on October 06, 1998 at 23:48:32:

In Reply to: *Re: Major Clue! (additional info)* posted by Jim Weirich on October 06, 1998 at 23:28:56:

: : : : Whenever I leave quartus, I get a Fatal Error dialog with the text
"Fatal
: : : : Exception". This happens if I type BYE, or just switch to another app.

: : : Two other questions: did you delete any previous version of Quartus before
: : : loading, and are you running any other position-dependent code (such as
: : : AlarmHack -- which, despite its name is not a HackMaster hack)?

: : : Neal

: : I just did the following ...

: [... elided lots of steps determining its a Beam On problem ...]

: I also went back and reinstalled Hackmaster and reenabled all the hacks. As
: long as the Beam Receive option is OFF, it works fine, even with the hacks.

And this is with system update 3.02, I presume.

--Neal

Re: Major Clue! (additional info)

Posted by [Jim Weirich](#) on October 07, 1998 at 07:03:03:

In Reply to: *Re: Major Clue! (additional info)* posted by Neal Bridges on October 06, 1998 at 23:48:32:

: : I also went back and reinstalled Hackmaster and reenabled all the hacks. As
: : long as the Beam Receive option is OFF, it works fine, even with the hacks.
: And this is with system update 3.02, I presume.

No, actually it was with a generic 3.0 system (an palm pilot pro with the 3.0 upgrade). I just now pulled down the 3.02 OS upgrade from the 3com site and tried with the same results (Beam off - OK, Beam On - Fatal error on exit).

-- Jim Weirich

Re: Major Clue! (additional info)

Posted by [oliver schill](#) on October 07, 1998 at 13:59:52:

In Reply to: *Re: Major Clue! (additional info)* posted by Jim Weirich on October 07, 1998 at 07:03:03:

: : And this is with system update 3.02, I presume.

: No, actually it was with a generic 3.0 system (an palm pilot pro with the 3.0
: upgrade). I just now pulled down the 3.02 OS upgrade from the 3com site and
: tried with the same results (Beam off - OK, Beam On - Fatal error on exit).

: -- Jim Weirich

The guy is right. I can reproduce it reliably.

Re: Major Clue! (additional info)

Posted by [Neal Bridges](#) on October 07, 1998 at 20:06:27:

In Reply to: *Re: Major Clue! (additional info)* posted by oliver schill on October 07, 1998 at 13:59:52:

: : : And this is with system update 3.02, I presume.

: : No, actually it was with a generic 3.0 system (an palm pilot pro with the 3.0

: : upgrade). I just now pulled down the 3.02 OS upgrade from the 3com site and
: : tried with the same results (Beam off - OK, Beam On - Fatal error on exit).
: : -- Jim Weirich
: The guy is right. I can reproduce it reliably.

Now I wonder like crazy what influence the beam setting has on the runtime environment. Can't switch the beam on in the emulator-- I'm gonna have to lay hands on the gadget itself.

Neal

Re: Fatal error on Quartus exit

Posted by [Neal Bridges](#) on October 05, 1998 at 13:32:31:

In Reply to: *Fatal error on Quartus exit* posted by Jim Weirich on October 05, 1998 at 12:57:18:

: There has been some discussion regarding exiting Quartus cleanly on Palm IIIs.
: It wasn't clear from the discussion if the problem has been fixed in all
: cases, but I am experiencing the following problem.

: Whenever I leave quartus, I get a Fatal Error dialog with the text "Fatal
: Exception". This happens if I type BYE, or just switch to another app.

: Details:

: - Quartus 0.7.1B
: - Palm Pilot, recently upgraded with the Palm III OS and IR port.
: - SwitchHack, MenuHack, and AppHach installed but disabled.

: Any ideas?

Are you running any Palm OS III update/patch?

Neal

Re: Fatal error on Quartus exit (long)

Posted by [John D. Verne](#) on October 07, 1998 at 17:15:22:

In Reply to: *Re: Fatal error on Quartus exit* posted by Neal Bridges on October 05, 1998 at 13:32:31:

: : There has been some discussion regarding exiting Quartus cleanly on Palm
: IIIs.

[...]

: : Whenever I leave quartus, I get a Fatal Error dialog with the text "Fatal
: : Exception". This happens if I type BYE, or just switch to another app.

: : Details:

: : - Quartus 0.7.1B

: : - Palm Pilot, recently upgraded with the Palm III OS and IR port.

: : - SwitchHack, MenuHack, and AppHack installed but disabled.

I've been reporting to Neal on this, but I thought I'd run through my experiences with Quartus on my PIII:

Details:

Quartus D.7.1B

PIII, Update 3.02

MenuHack, CronHack, SwitchHack

I'd been seeing the Fatal Errors on exit ("bye", SwitchHack, or Applications button) causing the PIII to lock up, requiring a reset. This happened, to a greater or lesser extent, on all version since 0.4.1 (?).

When I got D.7.1B, I decided to duplicate my machine on the PalmOS Emulator, and I found that the Update 3.02 (alone) caused a bus error when resetting, switching to the applications screen, or running some builtin apps.

I did a "up-arrow reset", removed the Update 3.02, and reinstalled Quartus. No problems since (everytime I say that, I check to make sure...).

The kicker is that on a subsequent HotSync, the Update 3.02 (in my backup directory -- I'd forgotten to take it out) was reloaded by accident. I fully expected the worse, but Quartus has not crashed since -- not ever.

My observations:

I noticed that a "Workspace" database had been created (I snoop with DB Explorer regularly, so I'm 95% sure I've never seen it before) that obviously belonged to Quartus.

My hypothesis:

Based on two weeks of gcc and pila coding for the PalmOS, I'm thinking that the Update 3.02 didn't let Quartus finish it's initial database creation process (in some magical way I don't understand), or kept the OS/Quartus from closing it on the first closing of the application.

Subsequent invocations of Quartus opened the db up, but attempts to close it resulted in an illegal reference to memory that the OS thought belonged to someone else, but Quartus thought was its own.

So when we were allowed to create the database completely, and mark it as ours, everything was fine from that point on.

This may or may not mimic what other folks are seeing. I real test might be:

1. Hard reset
2. Install Quartus by itself (move the backup dir to somewhere else)
3. Start it up and close it
4. Do a normal HotSync
5. Try Quartus

TTYL,

John

Re: Fatal error on Quartus exit

Posted by [Jim Weirich](#) on October 06, 1998 at 22:09:28:

In Reply to: *Re: Fatal error on Quartus exit* posted by Neal Bridges on October 05, 1998 at 13:32:31:

: : There has been some discussion regarding exiting Quartus cleanly on Palm IIIs.

: : It wasn't clear from the discussion if the problem has been fixed in all
: : cases, but I am experiencing the following problem.

: : Whenever I leave quartus, I get a Fatal Error dialog with the text "Fatal
: : Exception". This happens if I type BYE, or just switch to another app.

: : Details:

: : - Quartus 0.7.1B

: : - Palm Pilot, recently upgraded with the Palm III OS and IR port.

: : - SwitchHack, MenuHack, and AppHach installed but disabled.

: : Any ideas?

: : Are you running any Palm OS III update/patch?

No. Palm System V.3.0 from the info/version page of Applications.

Re: Fatal error on Quartus exit

Posted by [oliver schill](#) on October 05, 1998 at 14:34:29:

In Reply to: *Re: Fatal error on Quartus exit* posted by Neal Bridges on October 05, 1998 at 13:32:31:

: : Are you running any Palm OS III update/patch?

: : Neal

I have the same problem with version 0.7.0b. German PALM III OS, updated to 3.0.2. The reset does not happen always, about every second time i switch apps. Have not tried the new beta yet.

Re: Fatal error on Quartus exit

Posted by [Neal Bridges](#) on October 05, 1998 at 14:35:27:

In Reply to: *Re: Fatal error on Quartus exit* posted by oliver schill on October 05, 1998 at 14:34:29:

:
: : Are you running any Palm OS III update/patch?
: : Neal
: I have the same problem with version 0.7.0b. German PALM III OS, updated to
: 3.0.2. The reset does not happen always, about every second time i switch
apps.
: Have not tried the new beta yet.

Interesting. Are you using SwitchHack?

Re: Fatal error on Quartus exit

Posted by [oliver schill](#) on October 05, 1998 at 14:42:49:

In Reply to: *Re: Fatal error on Quartus exit* posted by Neal Bridges on October 05, 1998 at 14:35:27:

: :
:
: Interesting. Are you using SwitchHack?
Yes. I just removed all hacks (including switchhack).
started quartus. worked. switched back to quartus. switched.
fatal exception...

Re: Fatal error on Quartus exit

Posted by [Neal Bridges](#) on October 05, 1998 at 15:16:27:

In Reply to: *Re: Fatal error on Quartus exit* posted by oliver schill on October 05, 1998 at 14:42:49:

: : :
: :
: : Interesting. Are you using SwitchHack?
: Yes. I just removed all hacks (including switchhack).
: started quartus. worked. switched back to quartus. switched.
: fatal exception...

Can you try it with the 3.02 update disabled? That upgrade won't function on the emulator, it complains repeatedly about low memory accesses. I'd like to know if it's the culprit here.

Neal

Re: Fatal error on Quartus exit

Posted by [oliver schill](#) on October 05, 1998 at 16:45:22:

In Reply to: *Re: Fatal error on Quartus exit* posted by Neal Bridges on October 05, 1998 at 15:16:27:

: Can you try it with the 3.02 update disabled? That upgrade won't function on
: the emulator, it complains repeatedly about low memory accesses. I'd like to
: know if it's the culprit here.

: Neal

Unfortunately, my Palm refuses to uninstall the upgrade; I just tried.

Re: Fatal error on Quartus exit

Posted by [Neal Bridges](#) on October 05, 1998 at 17:01:29:

In Reply to: *Re: Fatal error on Quartus exit* posted by oliver schill on October 05, 1998 at 16:45:22:

: : Can you try it with the 3.02 update disabled? That upgrade won't function
on
: : the emulator, it complains repeatedly about low memory accesses. I'd like
to
: : know if it's the culprit here.

: : Neal

: Unfortunately, my Palm refuses to uninstall the upgrade; I just tried.

As I recall, it can be disabled by performing a reset with the Up button held down.

Neal

Re: Fatal error on Quartus exit

Posted by [oliver schill](#) on October 07, 1998 at 13:50:31:

In Reply to: *Re: Fatal error on Quartus exit* posted by Neal Bridges on October 05, 1998 at 17:01:29:

: : : Can you try it with the 3.02 update disabled? That upgrade won't function
: on

I tried it on a friends machine, without the upgrade. crash.

Re: Fatal error on Quartus exit

Posted by [Erwin Schomburg](#) on October 05, 1998 at 17:50:15:

In Reply to: *Re: Fatal error on Quartus exit* posted by Neal Bridges on October 05, 1998 at 17:01:29:

: As I recall, it can be disabled by performing a reset with the Up button held
: down.

: Neal

Errr, you can delete it *after* you did this so called warm reset, disabling it *by* doing the warm reset also does not properly initialize other system components. The warm reset is a means to be able to get rid of unwanted system extensions, I would not recommend to test-run apps in this state, but rather do a proper reset after having deleted the patch.

Besides this, I never had any problems on `_exiting_` Quartus (also having German OS 3.0.2). There seems to be a problem in the Quartus launch code that manifests itself (only) on PIIIs, so it may not properly initialize if not started from the app launcher (but via Switch-Hacking into it instead) for the first start after a reset.

/Erwin

Re: Fatal error on Quartus exit

Posted by [Neal Bridges](#) on October 05, 1998 at 18:39:40:

In Reply to: *Re: Fatal error on Quartus exit* posted by Erwin Schomburg on October 05, 1998 at 17:50:15:

: Besides this, I never had any problems on `_exiting_` Quartus (also having German

: OS 3.0.2). There seems to be a problem in the Quartus launch code that manifests itself (only) on PIIIs, so it may not properly initialize if not started from the app launcher (but via Switch-Hacking into it instead) for the first start after a reset.

The Quartus launch code is sufficiently simple that it would be remarkable if it were the source of the problem. More likely, immediately after a HotSync, SwitchHack expects the new Quartus to be in the place of the former version of Quartus, and stumbles accordingly.

Neal

Re: Fatal error on Quartus exit

Posted by [Christian W. Althausen](#) on October 06, 1998 at 10:41:00:

In Reply to: *Re: Fatal error on Quartus exit* posted by Neal Bridges on October 05, 1998 at 18:39:40:

: The Quartus launch code is sufficiently simple that it would be remarkable if it were the source of the problem. More likely, immediately after a HotSync, SwitchHack expects the new Quartus to be in the place of the former version of Quartus, and stumbles accordingly.

: Neal

I'm using AppHack instead of SwitchHack and having the same problem (as always).

But I've never, ever, had any problem exiting from version 0.3.0

Usually Palm III users turn on the Beam Receive option under preferences, that seems to be another background app, so maybe HackMaster isn't the problem.

Also it seems to be a problem that manifests after so HotSyncs

Chris

Quartus 0.7.1B now available

Posted by [Neal Bridges](#) on October 05, 1998 at 00:25:53:

Hi folks. Quartus 0.7.1B is now online in the Quartus File Area. Note that this isn't the stand-alone PRC-generating version-- that's going out under separate cover to those of you who have offered to test. It does, however, reflect all other changes to the interpreter since 0.4.1B.

Remember, delete any previous version of Quartus, disable your Hackmaster hacks, load the new version, start it once, and then re-enable your Hackmaster hacks.

Knock it around, let me know what happens!

Neal

- [File Area](#)

Re: Quartus 0.7.1B now available

Posted by [Erwin Schomburg](#) on October 05, 1998 at 00:46:28:

In Reply to: *Quartus 0.7.1B now available* posted by Neal Bridges on October 05, 1998 at 00:25:53:

: Remember, delete any previous version of Quartus, disable your Hackmaster hacks,
: load the new version, start it once, and then re-enable your Hackmaster hacks.

As with the defragging advice, these precautions are in most cases not necessary for us "damn PIII" users.

/Erwin

BTW: A general THANK YOU to Neal, for me, "it" (whatever it is) is not a computer unless there is a Forth system available for it. Now I have a palm computer.

Quartus 0.7.0B - Limited distribution

Posted by [Neal Bridges](#) on October 01, 1998 at 00:54:06:

I've sent the latest beta -- with stand-alone program generating capabilities -- to those of you who offered to test. If you asked me and you didn't receive it, let me know. And let me know how it goes!

...Neal

Re: Quartus 0.7.0B - Limited distribution

Posted by [Matthias Schneider](#) on October 01, 1998 at 10:18:49:

In Reply to: *Quartus 0.7.0B - Limited distribution* posted by Neal Bridges on October 01, 1998 at 00:54:06:

: I've sent the latest beta -- with stand-alone program generating capabilities --

: to those of you who offered to test. If you asked me and you didn't receive it,

: let me know. And let me know how it goes!

: ...Neal

Hi Neal,

I forgot one thing:

the Creation Date of all Quartus-made Applications is 5/16/96. I'm sure you know that already...

Matthias

Re: Quartus 0.7.0B - Limited distribution

Posted by [Neal Bridges](#) on October 01, 1998 at 10:28:11:

In Reply to: *Re: Quartus 0.7.0B - Limited distribution* posted by Matthias Schneider on October 01, 1998 at 10:18:49:

: I forgot one thing:

: the Creation Date of all Quartus-made Applications is 5/16/96. I'm sure you know

: that already...

Didn't realize that, no. I'll have to fix that at some point.

Neal

Re: Quartus 0.7.0B - Limited distribution

Posted by [Matthias Schneider](#) on October 01, 1998 at 10:09:30:

In Reply to: *Quartus 0.7.0B - Limited distribution* posted by Neal Bridges on October 01, 1998 at 00:54:06:

: I've sent the latest beta -- with stand-alone program generating capabilities
--
: to those of you who offered to test. If you asked me and you didn't receive
it,
: let me know. And let me know how it goes!

: ...Neal

Hi Neal,

here are my first impressions (after playing around with it an hour or two):

1.) It really works! GREAT!!!

2.) It shows a fatal error after scrolling all the strange numbers while compiling, when a program is compiled with a new creator-ID the very first time. Nevertheless, after tapping on the RESET-Button, the new program is on the launcher-Screen and works well.

After compiling it a 2nd time, "over" the old on, Quartus works correct. And even after deleting the program and compiling it new, everything works correct. BUT: If I then change the creator-ID to a virgin one for this pilot, the fatal exeption is shown again. Strange, isn't it? The error seems to be 100% reproducible.

3.) When compiling a huge program, the pilot is automatically turned off after a minute - while scrolling all the strange numbers. After pressing the green power-on-Hardware-Button, it continues to compile and SUCCEEDS. Nice! But how does this work? Does the pilot not know that it works at the moment? BTW: This behaviour is not 100% reproducible. It often is like I described above, but not always.

Overall: Live is nice again!

Matthias

Re: Quartus 0.7.0B - Limited distribution

Posted by [Neal Bridges](#) on October 01, 1998 at 10:26:44:

In Reply to: *Re: Quartus 0.7.0B - Limited distribution* posted by Matthias Schneider on October 01, 1998 at 10:09:30:

: here are my first impressions (after playing around with it an hour or two):

: 1.) It really works! GREAT!!!

: 2.) It shows a fatal error after scrolling all the strange numbers while
: compiling, when a program is compiled with a new creator-ID the very first
time.

: Nevertheless, after tapping on the RESET-Button, the new program is on the
: launcher-Screen and works well.

: After compiling it a 2nd time, "over" the old on, Quartus works correct.

: And even after deleting the program and compiling it new, everything works
: correct. BUT: If I then change the creator-ID to a virgin one for this pilot,
: the fatal exeption is shown again. Strange, isn't it? The error seems to be
100%

: reproducible.

Creating the new PRC must cause a heap shuffle, dislodging one of your hacks.
Try to reproduce the problem with hacks disabled.

: 3.) When compiling a huge program, the pilot is automatically turned off
: after a minute - while scrolling all the strange numbers. After pressing the
: green power-on-Hardware-Button, it continues to compile and SUCCEEDS. Nice!

But

: how does this work? Does the pilot not know that it works at the moment? BTW:

: This behaviour is not 100% reproducible. It often is like I described above,
but

: not always.

If it takes longer than your shut-off timeout delay to do the compile, as soon
as the compile finishes, the system will shut itself off. It won't do this
mid-compile, however.

: Overall: Live is nice again!

Thanks for the feedback!

Neal



Re: Quartus 0.7.0B - Limited distribution

Posted by [Matthias Schneider](#) on October 02, 1998 at 02:46:22:

In Reply to: *Re: Quartus 0.7.0B - Limited distribution* posted by Neal Bridges on October 01, 1998 at 10:26:44:

: : 2.) It shows a fatal error after scrolling all the strange numbers while
: : compiling, when a program is compiled with a new creator-ID the very first
: : time.
: : Nevertheless, after tapping on the RESET-Button, the new program is on the
: : launcher-Screen and works well.
: : After compiling it a 2nd time, "over" the old on, Quartus works correct.
: : And even after deleting the program and compiling it new, everything works
: : correct. BUT: If I then change the creator-ID to a virgin one for this
pilot,
: : the fatal exeption is shown again. Strange, isn't it? The error seems to be
: : 100%
: : reproducible.

: Creating the new PRC must cause a heap shuffle, dislodging one of your hacks.
: Try to reproduce the problem with hacks disabled.

You're right. With all hacks disabled, it works correctly.

: : 3.) When compiling a huge program, the pilot is automatically turned off
: : after a minute - while scrolling all the strange numbers. After pressing the
: : green power-on-Hardware-Button, it continues to compile and SUCCEEDS. Nice!
: : But
: : how does this work? Does the pilot not know that it works at the moment?

BTW:

: : This behaviour is not 100% reproducible. It often is like I described above,
: : but
: : not always.

: If it takes longer than your shut-off timeout delay to do the compile, as soon
: as the compile finishes, the system will shut itself off. It won't do this
: mid-compile, however.

Yes, it takes longer than my shut-off timeout. But the system shuts of BEFORE
compiles finishes. If measured the times: After powering the pilot on again, the
compiler scrolles its intern numbers for 10 seconds before the OK appears. So I
think it powers off mid-compile. (It's not a problem for me - seems only
strange).

Re: Quartus 0.7.0B - Limited distribution

Posted by [Neal Bridges](#) on October 02, 1998 at 14:01:35:

In Reply to: *Re: Quartus 0.7.0B - Limited distribution* posted by Matthias Schneider on October 02, 1998 at 02:46:22:

: : Creating the new PRC must cause a heap shuffle, dislodging one of your hacks.

: : Try to reproduce the problem with hacks disabled.

: You're right. With all hacks disabled, it works correctly.

...

: : If it takes longer than your shut-off timeout delay to do the compile, as soon

: : as the compile finishes, the system will shut itself off. It won't do this
: : mid-compile, however.

:

: Yes, it takes longer than my shut-off timeout. But the system shuts off BEFORE
: compiles finishes. If measured the times: After powering the pilot on again,
the

: compiler scrolls its intern numbers for 10 seconds before the OK appears. So
I

: think it powers off mid-compile. (It's not a problem for me - seems only
: strange).

It's very strange indeed. Does this happen with hack disabled? As far as I know, you need to be processing events for the system to be able to switch itself off-- and during compilation, no events are being handled.

Neal

Re: Quartus 0.7.0B - Limited distribution

Posted by [Neal Bridges](#) on October 01, 1998 at 00:57:21:

In Reply to: *Quartus 0.7.0B - Limited distribution* posted by Neal Bridges on October 01, 1998 at 00:54:06:

: I've sent the latest beta -- with stand-alone program generating capabilities
--

: to those of you who offered to test. If you asked me and you didn't receive
it,

: let me know. And let me know how it goes!

: ...Neal

By the way, since I'm sure someone will ask, next I'll be adding words to copy external resources into your target executables. Stay tuned!

Neal

Status Update

Posted by [Neal Bridges](#) on September 26, 1998 at 11:27:15:

Hi folks. Those of you who have offered to test the next beta probably wonder what I'm doing that's holding it up. The stand-alone-PRC generation code was entirely prototyped in Forth, using Quartus. Now that it works well, I've been moving the code into the kernel itself, where it belongs. Nearly done!

Neal

Re: Status Update

Posted by [Erwin Schomburg](#) on September 30, 1998 at 13:39:04:

In Reply to: *Status Update* posted by Neal Bridges on September 26, 1998 at 11:27:15:

: Hi folks. Those of you who have offered to test the next beta probably wonder
: what I'm doing that's holding it up. The stand-alone-PRC generation code was
: entirely prototyped in Forth, using Quartus. Now that it works well, I've
been
: moving the code into the kernel itself, where it belongs. Nearly done!

: Neal

??? @!#!+! mumble another (although less sophisticated) game waiting for
compilation mumble mumble...

/Erwin

Re: Status Update

Posted by [Neal Bridges](#) on September 30, 1998 at 15:08:54:

In Reply to: *Re: Status Update* posted by Erwin Schomburg on September 30, 1998
at 13:39:04:

: ??? @!#!+! mumble another (although less sophisticated) game waiting for
: compilation mumble mumble...

I've got literally two hours work to do on the thing before I'm sending it to
the testing group, Erwin. It's been a trying week-- with luck, tonight I'll

have the time to get it out.

Neal

What is wrong

Posted by [Christian W. Althausen](#) on September 25, 1998 at 09:52:36:

Can anyone help me on that:

```
\ -----  
\ runasmostra  
needs runas  
create letras ] DesA DesB DesC DesD DesE [  
: runa char a - 2* letras + @ execute ;  
\ -----
```

DesA, DesB, ... are words defined in runas.

The problem is that Quartus can't pass through the word]

What is wrong ?

Thanks in advance,

Chris

Re: What is wrong

Posted by [Erwin Schomburg](#) on September 25, 1998 at 10:42:01:

In Reply to: *What is wrong* posted by Christian W. Althausen on September 25, 1998 at 09:52:36:

: Can anyone help me on that:

```
: \ -----  
: \ runasmostra
```

I think your construct fails because you are not in suspended compile mode of a definition that you could resume. What you want, you want to store execution tokens.

Try this (unless Neal has something more elegant, or a better explanation based on the standard, me being slightly out of touch with it):

needs runas

```
create letras ' DesA , ' DesB , ' DesC , ' DesD , ' DesE ,  
: runa char a - cells letras + @ execute ;
```

/Erwin

Re: What is wrong

Posted by [Neal Bridges](#) on September 25, 1998 at 11:31:08:

In Reply to: *Re: What is wrong* posted by Erwin Schomburg on September 25, 1998 at 10:42:01:

: : Can anyone help me on that:

```
: : \ -----  
: : \ runasmostra
```

: I think your construct fails because you are not in suspended compile mode of a definition that you could resume. What you want, you want to store execution tokens.

: Try this (unless Neal has something more elegant, or a better explanation based

: on the standard, me being slightly out of touch with it):

```
: _____  
: needs runas
```

```
: create letras ' DesA , ' DesB , ' DesC , ' DesD , ' DesE ,
```

```
: : runa char a - cells letras + @ execute ;
```

```
: _____
```

Erwin has it right. Your original attempt might work on some older Forths; the compilation model in Quartus is somewhat more sophisticated. Using ' and , is the way to go, and it's Standard-compliant as well.

Neal

Lines! -- a Quartus-compiled stand-alone app

Posted by [Neal Bridges](#) on September 22, 1998 at 16:13:32:

Check the Quartus File Area for *Lines!*, a game written in Forth by Matthias Schneider. I've compiled it to a stand-alone PRC with the upcoming Quartus beta. Please give it a try and let me know how it runs on your PalmPilot.

Neal

- [File Area](#)

Re: Lines! -- a Quartus-compiled stand-alone app

Posted by [Ted Maas](#) on September 22, 1998 at 17:18:37:

In Reply to: *Lines! -- a Quartus-compiled stand-alone app* posted by Neal Bridges on September 22, 1998 at 16:13:32:

Neal:

I have a PalmPilot Professional. Its running system V.2.0.4 I downloaded lines about an hour or so ago. It installed with no problems. It takes up 14k. I have 427k out of 960k used.

So far, it runs fine. I can turn off the pilot and when I turn it back on it resumes the game.

It also mirrors Quartus itself in that when I SWITCH applications and then go back to it, it restarts from the splash screen. I'm not sure if that is what you intended, but it is expected based on my understanding of the "flow of control" used in the Quartus beta.

Hope this helps! I can't wait until you go live with 1.0

Ted

Re: Lines! -- a Quartus-compiled stand-alone app

Posted by [Neal Bridges](#) on September 22, 1998 at 19:43:40:

In Reply to: *Re: Lines! -- a Quartus-compiled stand-alone app* posted by Ted Maas on September 22, 1998 at 17:18:37:

: Neal:

: I have a PalmPilot Professional. Its running system V.2.0.4
: I downloaded lines about an hour or so ago. It installed
: with no problems. It takes up 14k. I have 427k out of 960k
: used.

: So far, it runs fine. I can turn off the pilot and when I turn
: it back on it resumes the game.

: It also mirrors Quartus itself in that when I SWITCH applications
: and then go back to it, it restarts from the splash screen. I'm
: not sure if that is what you intended, but it is expected based on
: my understanding of the "flow of control" used in the Quartus beta.

: Hope this helps! I can't wait until you go live with 1.0

Thanks, Ted. You're right, the game doesn't save its state between incarnations, but it could certainly be made to do so quite easily. The key reason for putting it up is to see if the framework it runs in works on various models & configurations. It's an addictive game, though. Keeps me from my work!

It takes 14K now; when I'm finished it'll run in about 12K.

Neal

Re: Lines! -- a Quartus-compiled stand-alone app

Posted by [Erwin Schomburg](#) on September 23, 1998 at 03:29:48:

In Reply to: *Re: Lines! -- a Quartus-compiled stand-alone app* posted by Neal Bridges on September 22, 1998 at 19:43:40:

: : Neal:

: : I have a PalmPilot Professional. Its running system V.2.0.4
: : I downloaded lines about an hour or so ago. It installed
: : with no problems. It takes up 14k. I have 427k out of 960k
: : used.

: : So far, it runs fine. I can turn off the pilot and when I turn
: : it back on it resumes the game.

: : It also mirrors Quartus itself in that when I SWITCH applications
: : and then go back to it, it restarts from the splash screen. I'm
: : not sure if that is what you intended, but it is expected based on
: : my understanding of the "flow of control" used in the Quartus beta.

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: incarnations, but it could certainly be made to do so quite easily. The key
: reason for putting it up is to see if the framework it runs in works on
various
: models & configurations. It's an addictive game, though. Keeps me from my
: work!

: It takes 14K now; when I'm finished it'll run in about 12K.

: Neal

Seems to work well on my damn PIII. Hope to have the first "user compiled" thing
ready to throw out once you send the comp.

/Erwin

/Erwin

Re: Lines! -- a Quartus-compiled stand-alone app

Posted by Erwin on September 23, 1998 at 08:42:01:

In Reply to: *Re: Lines! -- a Quartus-compiled stand-alone app* posted by Erwin
Schomburg on September 23, 1998 at 03:29:48:

: Seems to work well on my damn PIII. Hope to have the first "user compiled"
thing
: ready to throw out once you send the comp.

: /Erwin

But it once terminated with a fatal while trying to break out of the game via
the Apps button in mid-play. Although the popup showed the reset button, the pin
was needed. Could not repeat the fault so far, but ...

/Erwin

Re: Lines! -- a Quartus-compiled stand-alone app

Posted by [Neal Bridges](#) on September 23, 1998 at 10:58:55:

In Reply to: *Re: Lines! -- a Quartus-compiled stand-alone app* posted by Erwin on September 23, 1998 at 08:42:01:

:
: : Seems to work well on my damn PIII. Hope to have the first "user compiled"
: thing
: : ready to throw out once you send the comp.
: : /Erwin

: But it once terminated with a fatal while trying to break out of the game via
: the Apps button in mid-play. Although the popup showed the reset button, the
pin
: was needed. Could not repeat the fault so far, but ...

Did the error appear while the game was still on-screen?

Neal

Re: Lines! -- a Quartus-compiled stand-alone app

Posted by Erwin on September 23, 1998 at 11:24:34:

In Reply to: *Re: Lines! -- a Quartus-compiled stand-alone app* posted by Neal Bridges on September 23, 1998 at 10:58:55:

: Did the error appear while the game was still on-screen?

: Neal

It threw up the "fatal" popup when I hit the App button in mid-game, but AFAIR it came on a blank background, if that is of any help.

/Erwin

Re: Lines! -- a Quartus-compiled stand-alone app

Posted by [Neal Bridges](#) on September 23, 1998 at 11:39:43:

In Reply to: *Re: Lines! -- a Quartus-compiled stand-alone app* posted by Erwin on September 23, 1998 at 11:24:34:

: : Did the error appear while the game was still on-screen?

: : Neal

: It threw up the "fatal" popup when I hit the App button in mid-game, but AFAIR
: it came on a blank background, if that is of any help.

Let me know if it happens again.

Neal

Re: Lines! -- a Quartus-compiled stand-alone app

Posted by [Neal Bridges](#) on September 23, 1998 at 20:19:34:

In Reply to: *Re: Lines! -- a Quartus-compiled stand-alone app* posted by Neal Bridges on September 23, 1998 at 11:39:43:

: : : Did the error appear while the game was still on-screen?

: : : Neal

: : It threw up the "fatal" popup when I hit the App button in mid-game, but
AFAIR

: : it came on a blank background, if that is of any help.

: Let me know if it happens again.

Think I've got it! If you tap anywhere *outside* of the "Quartus Beta Application" alert box that appears at the beginning, you'll get a Fatal Exception when you try to leave the game. Let me know if you can get this error any other way.

Neal

Re: Lines! -- a Quartus-compiled stand-alone app

Posted by [Jim Deakin](#) on September 24, 1998 at 12:48:34:

In Reply to: *Re: Lines! -- a Quartus-compiled stand-alone app* posted by Neal Bridges on September 23, 1998 at 20:19:34:

: Think I've got it! If you tap anywhere *outside* of the "Quartus Beta
: Application" alert box that appears at the beginning, you'll get a Fatal
: Exception when you try to leave the game.

I can't get it to crash at all on a PPP, but I'm using Launchpad, rather than the standard app. launcher.

You're right about the addiction factor of the game though. Is the source for the compiled program identical to an interpreted version? (and are you planning to make the source available as a sample app? It must cover a lot of the problems I keep running into with Palm programming!)

Jim Deakin

Re: Lines! -- a Quartus-compiled stand-alone app

Posted by [Neal Bridges](#) on September 24, 1998 at 23:34:17:

In Reply to: *Re: Lines! -- a Quartus-compiled stand-alone app* posted by Jim Deakin on September 24, 1998 at 12:48:34:

: : Think I've got it! If you tap anywhere *outside* of the "Quartus Beta
: : Application" alert box that appears at the beginning, you'll get a Fatal
: : Exception when you try to leave the game.

: I can't get it to crash at all on a PPP, but I'm using Launchpad, rather than
: the standard app. launcher.

: You're right about the addiction factor of the game though. Is the source for
: the compiled program identical to an interpreted version? (and are you
: planning to make the source available as a sample app? It must cover a lot of
: the problems I keep running into with Palm programming!)

The source is the same, yes. I'll ask Matthias if he wants the source made available.

Neal

Re: Lines! -- a Quartus-compiled stand-alone app

Posted by Erwin on September 24, 1998 at 02:40:57:

In Reply to: *Re: Lines! -- a Quartus-compiled stand-alone app* posted by Neal Bridges on September 23, 1998 at 20:19:34:

: Think I've got it! If you tap anywhere *outside* of the "Quartus Beta
: Application" alert box that appears at the beginning, you'll get a Fatal
: Exception when you try to leave the game. Let me know if you can get this
error

: any other way.

: Neal

Indeed, mortality is reproduceably 100% when tapping outside the frame before
managing to hit the OK. Havn't found another path that leads to this crash.

The nature of the fatal indicates address mis-alignment, i.e. attempt
to access an odd numbered memory location. So my suspicions are that you
either have a stack leak that gives you an odd figure (when coming this way)
where a properly aligned address is expected to be; or there is an address
calculated on a byte count basis instead of counting cells, or a byte count
without the required pad up to the nearest even location.

/Erwin

Re: Lines! -- a Quartus-compiled stand-alone app

Posted by [Neal Bridges](#) on September 24, 1998 at 23:33:01:

In Reply to: *Re: Lines! -- a Quartus-compiled stand-alone app* posted by Erwin on
September 24, 1998 at 02:40:57:

: Indeed, mortality is reproduceably 100% when tapping outside the frame before
: managing to hit the OK. Havn't found another path that leads to this crash.

: The nature of the fatal indicates address mis-alignment, i.e. attempt
: to access an odd numbered memory location. So my suspicions are that you
: either have a stack leak that gives you an odd figure (when coming this way)
: where a properly aligned address is expected to be; or there is an address
: calculated on a byte count basis instead of counting cells, or a byte count
: without the required pad up to the nearest even location.

Neither of those turn out to be true; rather I think it's the system throwing
itself off by trying to handle a form event for which there is no handler. For
some reason, this doesn't surface as an error until exit.

I've resolved this problem, anyhow. Now you can tap like crazy, doesn't crash. I'll put the new version up by and by.

Neal

Status: Next Beta

Posted by [Neal Bridges](#) on September 21, 1998 at 23:36:41:

It's close, folks. I'm putting the last bit of spin on the new beta; I'll send it to those of you who've offered to test as soon as it's ready.

The biggest news is the ability to compile stand-alone PRC files.

Regards, Neal

An alternate BYE

Posted by [Neal Bridges](#) on September 17, 1998 at 13:25:54:

Those of you interested in the behaviour of BYE, try using this definition:

```
: BYE SysAppLauncherDialog ;
```

Should solve any problems.

Neal

Re: An alternate BYE

Posted by [Erwin Schomburg](#) on September 17, 1998 at 16:43:46:

In Reply to: *An alternate BYE* posted by Neal Bridges on September 17, 1998 at 13:25:54:

: Those of you interested in the behaviour of BYE, try using this definition:

```
: : BYE SysAppLauncherDialog ;
```

: Should solve any problems.

: Neal

Near miss. It launches the OS2 applauncher. If you have an OS2 system this might be what you want. In OS3 systems you call the new bye, you get an app launcher

screen you hoped never to see again after the upgrade purchase, if you then tap the silk screen app button you return to Quartus where you left it. If instead you launch another app from old launcher, it brings you back to PIII launcher when terminated, when you call Quartus then, you get a fatal (app resource id 1000 not found).

"Very simple, easy to understand, but wrong"

Back to square one, I'd say.

/Erwin

Re: An alternate BYE

Posted by [Neal Bridges](#) on September 17, 1998 at 23:12:01:

In Reply to: *Re: An alternate BYE* posted by Erwin Schomburg on September 17, 1998 at 16:43:46:

: : Those of you interested in the behaviour of BYE, try using this definition:

: : : BYE SysAppLauncherDialog ;

: : Should solve any problems.

: : Neal

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: be what you want. In OS3 systems you call the new bye, you get an app launcher screen you hoped never to see again after the upgrade purchase, if you then tap

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: "Very simple, easy to understand, but wrong"

: Back to square one, I'd say.

Damn you PIII users, you'll force me to upgrade yet! :)

Neal

Re: An alternate BYE

Posted by [Erwin Schomburg](#) on September 18, 1998 at 08:50:01:

In Reply to: *Re: An alternate BYE* posted by Neal Bridges on September 17, 1998 at 23:12:01:

: Damn you PIII users, you'll force me to upgrade yet! :)

: Neal

Lets try this for (us) dammned PIII users:

```
\ BYE-BYE \ERS 98.09.18
\ For inclusion in Startup.Quartus
\ until fixed proper in Quartus kernel by NAB
```

```
base @ hex
create ByeEvt 4 , 0 , 0 , 0 , 108 ,
0 , 8 ,
base !
```

needs IDS

ID psys \ Watch the case for psys!!

```
create ver 2 cells allot
```

```
OSver >abs 1 psys FtrGet drop
```

```
: BYE OSver @ 8 RSHIFT 2 > if
```

```
ByeEvt >abs EvtAddEventToQueue
```

```
else
```

```
SysAppLauncherDialog
```

```
then ;
```

Re: An alternate BYE

Posted by Erwin on September 18, 1998 at 09:02:15:

In Reply to: *Re: An alternate BYE* posted by Erwin Schomburg on September 18, 1998 at 08:50:01:

: : Damn you PIII users, you'll force me to upgrade yet! :)

: : Neal

I was overcautious, this shoul work on ALL Systems
so, lets try this for (all of us) dammned users:

```
\ BYE-BYE \ERS 98.09.18
\ For inclusion in Startup.Quartus
\ until fixed proper in Quartus kernel by NAB
```

```
base @ hex
create ByeEvt 4 , 0 , 0 , 0 , 108 ,
0 , 8 ,
base !

: BYE
ByeEvt >abs EvtAddEventToQueue ;
```

Re: An alternate BYE

Posted by [Neal Bridges](#) on September 18, 1998 at 20:30:56:

In Reply to: *Re: An alternate BYE* posted by Erwin on September 18, 1998 at 09:02:15:

: : : Damn you PIII users, you'll force me to upgrade yet! :)

: : : Neal

: I was overcautious, this shoul work on ALL Systems
: so, lets try this for (all of us) dammned users:

```
: \ BYE-BYE \ERS 98.09.18
: \ For inclusion in Startup.Quartus
: \ until fixed proper in Quartus kernel by NAB
```

```
: base @ hex
: create ByeEvt 4 , 0 , 0 , 0 , 108 ,
: 0 , 8 ,
: base !
```

```
: : BYE
: ByeEvt >abs EvtAddEventToQueue ;
```

Make it this:

```
: BYE
ByeEvt >abs EvtAddEventToQueue begin key again ;
```

Neal

Re: An alternate BYE

Posted by [Neal Bridges](#) on September 18, 1998 at 16:59:18:

In Reply to: *Re: An alternate BYE* posted by Erwin on September 18, 1998 at 09:02:15:

: : : Damn you PIII users, you'll force me to upgrade yet! :)

: : : Neal

: I was overcautious, this shoul work on ALL Systems
: so, lets try this for (all of us) dammned users:

: \ BYE-BYE \ERS 98.09.18
: \ For inclusion in Startup.Quartus
: \ until fixed proper in Quartus kernel by NAB

: base @ hex
: create ByeEvt 4 , 0 , 0 , 0 , 108 ,
: 0 , 8 ,
: base !

: : BYE
: ByeEvt >abs EvtAddEventToQueue ;

Erwin, this'll work so long as you continue processing events afterwards, via ACCEPT or KEY or just returning to the interpreter. Let me test it a bit.

Neal

Re: An alternate BYE

Posted by [Erwin Schomburg](#) on September 19, 1998 at 10:06:47:

In Reply to: *Re: An alternate BYE* posted by Neal Bridges on September 18, 1998 at 16:59:18:

: : \ BYE-BYE \ERS 98.09.18
: : \ For inclusion in Startup.Quartus
: : \ until fixed proper in Quartus kernel by NAB

: : base @ hex
: : create ByeEvt 4 , 0 , 0 , 0 , 108 ,
: : 0 , 8 ,
: : base !

: : : BYE
: : ByeEvt >abs EvtAddEventToQueue ;

: Erwin, this'll work so long as you continue processing events afterwards, via

: ACCEPT or KEY or just returning to the interpreter. Let me test it a bit.

: Neal

I disagree. This works, period.

/Erwin

Re: An alternate BYE

Posted by [Neal Bridges](#) on September 19, 1998 at 10:29:58:

In Reply to: *Re: An alternate BYE* posted by Erwin Schomburg on September 19, 1998 at 10:06:47:

:

: : : \ BYE-BYE \ERS 98.09.18

: : : \ For inclusion in Startup.Quartus

: : : \ until fixed proper in Quartus kernel by NAB

: : : base @ hex

: : : create ByeEvt 4 , 0 , 0 , 0 , 108 ,

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: : : ByeEvt >abs EvtAddEventToQueue ;

: : Erwin, this'll work so long as you continue processing events afterwards,
via

: : ACCEPT or KEY or just returning to the interpreter. Let me test it a bit.

: : Neal

: I disagree. This works, period.

: /Erwin

Fortunately it's not a matter of agreement or disagreement. Let me illustrate.

Using your BYE:

```
: test BYE begin again ;
```

This word will not exit.

Using my BYE (a couple of messages up in the thread, the one that follows your BYE with BEGIN KEY AGAIN), the word will exit.

It's a tiny point, but processing events after sending the exit event means the new BYE word meets the letter of the Standard.

Neal

Re: An alternate BYE

Posted by [Erwin Schomburg](#) on September 19, 1998 at 12:44:33:

In Reply to: *Re: An alternate BYE* posted by Neal Bridges on September 19, 1998 at 10:29:58:

```
: :
: : : : \ BYE-BYE \ERS 98.09.18
: : : : \ For inclusion in Startup.Quartus
: : : : \ until fixed proper in Quartus kernel by NAB
: : : : base @ hex
: : : : create ByeEvt 4 , 0 , 0 , 0 , 108 ,
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: : : : : BYE
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: : : ACCEPT or KEY or just returning to the interpreter. Let me test it a bit.

: : : Neal
```

```
: : I disagree. This works, period.
: : /Erwin
```

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: It's a tiny point, but processing events after sending the exit event means the

: new BYE word meets the letter of the Standard.

: Neal

I am nonplussed and stand corrected. Sorry, haven't tested with an empty killer loop following the call.

/Erwin

Re: An alternate BYE

Posted by Erwin on September 19, 1998 at 12:47:33:

In Reply to: *Re: An alternate BYE* posted by Erwin Schomburg on September 19, 1998 at 12:44:33:

```
: : :
: : : : : \ BYE-BYE \ERS 98.09.18
: : : : : \ For inclusion in Startup.Quartus
: : : : : \ until fixed proper in Quartus kernel by NAB
: : : : : base @ hex
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: : : test BYE begin again ;

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: the
: : new BYE word meets the letter of the Standard.

: : Neal

: I am nonplussed and stand corrected. Sorry, haven't tested with an empty
killer
: loop following the call.

: /Erwin
```

But it should really be BEGIN KEY UNTIL *or* BEGIN KEY DROP AGAIN

/Erwin

Re: An alternate BYE

Posted by [Neal Bridges](#) on September 19, 1998 at 14:37:03:

In Reply to: *Re: An alternate BYE* posted by Erwin on September 19, 1998 at 12:47:33:

```
: : : :
: : : : : \ BYE-BYE \ERS 98.09.18
: : : : : \ For inclusion in Startup.Quartus
: : : : : \ until fixed proper in Quartus kernel by NAB

: : : : : base @ hex
: : : : : create ByeEvt 4 , 0 , 0 , 0 , 108 ,
: : : : : 0 , 8 ,
: : : : : base !

: : : : : : BYE
: : : : : : ByeEvt >abs EvtAddEventToQueue ;

: : : : : Erwin, this'll work so long as you continue processing events
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: : : via
: : : : : ACCEPT or KEY or just returning to the interpreter. Let me test it a
: bit.

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: : : Using your BYE:
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: : : your BYE with BEGIN KEY AGAIN), the word will exit.

: : : It's a tiny point, but processing events after sending the exit event
means
: : the
: : : new BYE word meets the letter of the Standard.

: : : Neal

: : I am nonplussed and stand corrected. Sorry, haven't tested with an empty
: killer
```

: : loop following the call.

: : /Erwin

: But it should really be BEGIN KEY UNTIL *or* BEGIN KEY DROP AGAIN

That occurred to me also, but it turns out not to matter; the very next event on the queue is the bye event, and it's processed immediately by the handler in KEY. In fact, the BEGIN AGAIN is superfluous.

Neal

Re: An alternate BYE

Posted by [Erwin Schomburg](#) on September 19, 1998 at 17:01:48:

In Reply to: *Re: An alternate BYE* posted by Neal Bridges on September 19, 1998 at 14:37:03:

: That occurred to me also, but it turns out not to matter; the very next event on
: the queue is the bye event, and it's processed immediately by the handler in
: KEY. In fact, the BEGIN AGAIN is superfluous.

: Neal

I found that too, also that EKEY would work, but its just (optically) untidy not to use or DROP it.

/Erwin

Re: An alternate BYE

Posted by [Neal Bridges](#) on September 19, 1998 at 17:27:06:

In Reply to: *Re: An alternate BYE* posted by Erwin Schomburg on September 19, 1998 at 17:01:48:

:
: : That occurred to me also, but it turns out not to matter; the very next event
: on
: : the queue is the bye event, and it's processed immediately by the handler in
: : KEY. In fact, the BEGIN AGAIN is superfluous.

: : Neal

: I found that too, also that EKEY would work, but its just (optically) untidy

not
: to use or DROP it.

At any rate, I've built this functionality into the BYE primitive; seems to work well. On another note, the beta that has PRC file generation abilities is nearly ready; it'll go out soon to those of you who asked to be beta testers.

Neal

Re: An alternate BYE

Posted by [Christian W. Althausen](#) on September 18, 1998 at 08:30:06:

In Reply to: *Re: An alternate BYE* posted by Neal Bridges on September 17, 1998 at 23:12:01:

: Damn you PIII users, you'll force me to upgrade yet! :)

: Neal

hehehehe ;->

Chris

About about

Posted by [Neal Bridges](#) on September 17, 1998 at 13:14:48:

Here's something interesting...

\ about 98.6.10 4:43 pm NAB

needs ids

ID p4pr
p4pr AbtShowAbout

Neal

editing?

Posted by [Thomas](#) on September 11, 1998 at 04:20:30:

I really enjoy using Quartus and I find it to be a very useful development tool. I prefer being able to run an interactive environment on the target system, and it's important to me to be able to make changes "in the field". On the other hand, for editing, I would very much like to be able to edit on a host system and download the text files into the Pilot or CoPilot.

On the Pilot itself, the MemoPad has some limitations for developing code (size limitations, etc.). Moving text back and forth during development via hotsync is also kind of tricky.

I have also tried developing using CoPilot. But I haven't found a good way of moving text files back and forth between the CoPilot memopad and my editor. Is there some way of moving text back and forth quickly between CoPilot and the host operating system? The HotSync menu entry doesn't seem to be doing anything.

What do people do for editing?

Thanks,
Thomas.

Re: editing?

Posted by [Erwin Schomburg](#) on September 11, 1998 at 05:34:19:

In Reply to: *editing?* posted by Thomas on September 11, 1998 at 04:20:30:

: What do people do for editing?

: Thanks,
: Thomas.

I edit in Notepad and copy/paste the stuff into memos in the Desktop app for Hotsync. If I want to transfer to Emulator (I know its klutzy, someone with a better solution?), I install a docreader to Emulator, convert my plaintext files to doc-pdb, install on Emulator, copy paste to MemoPad.

For to Hotsync directly to Emulator you would need two serial ports connected with a loopback cable.

/Erwin

Re: editing?

Posted by [Thomas](#) on September 11, 1998 at 20:57:49:

In Reply to: *Re: editing?* posted by Erwin Schomburg on September 11, 1998 at 05:34:19:

: I edit in Notepad and copy/paste the stuff into memos in the Desktop app for
: Hotsync. If I want to transfer to Emulator (I know its klutzy, someone with a
: better solution?), I install a docreader to Emulator, convert my
: plaintext files to doc-pdb, install on Emulator, copy paste to
: MemoPad.

:
: For to Hotsync directly to Emulator you would need two serial ports connected
: with a loopback cable.

Well, or a software hack to the emulator. For example, the emulator might accept pasting text into it. Or it might support hotsync or TCP/IP through a software-emulated serial port connection. Or the emulator could do something special to get text into the notepad directly, just like it does something special for .PRC files.

In fact, that gives me an idea: there are various scripting languages that support "sendkey" (among them, winbatch). It might be easier to transfer text files into the emulator with those than to hotsync. I'll give it a try.

Cheers,
Thomas.

Re: editing?

Posted by [Neal Bridges](#) on September 11, 1998 at 11:47:46:

In Reply to: *Re: editing?* posted by Erwin Schomburg on September 11, 1998 at 05:34:19:

: I edit in Notepad and copy/paste the stuff into memos in the Desktop app for
: Hotsync. If I want to transfer to Emulator (I know its klutzy, someone with a
: better solution?), I install a docreader to Emulator, convert my plaintext
files
: to doc-pdb, install on Emulator, copy paste to MemoPad.

This provides me with an additional motivation to finish the includedoc extension to doc.txt.

Neal

Palm III troubles?

Posted by [Neal Bridges](#) on September 10, 1998 at 09:52:09:

Folks, I've had two reports of problems with the PIII -- fatal exceptions when exiting Quartus, on an intermittent basis. How many of you are having this problem? I'm trying to determine if it's an application interaction, a Hack conflict, or some difference in the new ROM that causes the exception.

Thanks,
Neal

Re: Palm III troubles?

Posted by [Erwin Schomburg](#) on September 10, 1998 at 11:04:33:

In Reply to: *Palm III troubles?* posted by Neal Bridges on September 10, 1998 at 09:52:09:

I run it on a PIII (of course, no use to respond otherwise). Well, I had my share of crashes, but they were mainly related to The Story below. But seriously, I (only) just verified that something really seems to be wrong with Quartus' exit routine. Symptoms: If one exits via "bye" Quartus does not get registered in the SwitchHack list. If one is in the MemoPad app editing a Quartus source and uses the SwitchHack (list or switch over stroke) to invoke Quartus, then (again) uses the bye word, the system immediately falls back to MemoPad, an attempt to use the SwitchHack stroke to go back to Quartus gets you the app used prior to Quartus, if you go via the SwitchHack list instead, the system eventually locks up with a chunk error (Heck, can't get it to boink just now, was it over- or underlocked?) I never counted, but I think you can try the Spiel 16 times before the lock occurs. Looks like Quartus drops one item too many from the stack of least recent used apps! Something very like this was to be seen in the PocketChess implementation prior to it being patched up for use with PIII and SwitchHack, maybe some (assembler programming) designer's conference call directed to the eskimo domain should be asked for?

/Erwin

Re: Palm III troubles?

Posted by [Neal Bridges](#) on September 10, 1998 at 11:22:56:

In Reply to: *Re: Palm III troubles?* posted by Erwin Schomburg on September 10, 1998 at 11:04:33:

: I run it on a PIII (of course, no use to respond otherwise).
: Well, I had my share of crashes, but they were mainly related to The Story
: below. But seriously, I (only) just verified that something really seems to be
: wrong with Quartus' exit routine. Symptoms: If one exits via "bye" Quartus
does
: not get registered in the SwitchHack list. If one is in the MemoPad app
[other oddities relating to BYE]

I think the problem here is that Palm programs aren't meant to exit under their own steam, but only when requested to do so by the system. BYE has slightly different results under PalmOS 1 and 2. Under PalmOS 1, it restarts Quartus; under PalmOS 2, it returns to the previous application (not the Applications launcher, unless you've replaced it with an application like LaunchPad). Under PalmOS 3, well, I'm still investigating.

I provided BYE because it was simple; it seems, however, that the PalmOS is somewhat unprepared for a program to simply return without being asked. All the built-in applications run in a continuous event-processing loop until another application is selected.

Neal

Re: Palm III troubles?

Posted by [Erwin Schomburg](#) on September 10, 1998 at 11:47:42:

In Reply to: *Re: Palm III troubles?* posted by Neal Bridges on September 10, 1998 at 11:22:56:

: I think the problem here is that Palm programs aren't meant to exit under their
own steam, but only when requested to do so by the system. BYE has slightly different results under PalmOS 1 and 2. Under PalmOS 1, it restarts Quartus; under PalmOS 2, it returns to the previous application (not the Applications launcher, unless you've replaced it with an application like LaunchPad). Under
: PalmOS 3, well, I'm still investigating.

: I provided BYE because it was simple; it seems, however, that the PalmOS is
: somewhat unprepared for a program to simply return without being asked. All the
: built-in applications run in a continuous event-processing loop until another

: application is selected.

: Neal

Oops, I have Bunny The Psychic Rabbit and Dates!, both have an exit button to terminate on their own behalf and fall correctly back to the Launcher.

But to addend to the beginning of this thread, other then self inflicted crashes, like trying a create does> sequence outside a definition and system calls with the stack in disarray, the bye behaviour was the only real oddity I could observe in 0.4.1

/Erwin

Re: Palm III troubles?

Posted by [Neal Bridges](#) on September 10, 1998 at 16:20:18:

In Reply to: *Re: Palm III troubles?* posted by Erwin Schomburg on September 10, 1998 at 11:47:42:

: : I think the problem here is that Palm programs aren't meant to exit under
: their

: : own steam, but only when requested to do so by the system. BYE has slightly
: : different results under PalmOS 1 and 2. Under PalmOS 1, it restarts

Quartus;

: : under PalmOS 2, it returns to the previous application (not the Applications
: : launcher, unless you've replaced it with an application like LaunchPad).

: Under

: : PalmOS 3, well, I'm still investigating.

: : I provided BYE because it was simple; it seems, however, that the PalmOS is
: : somewhat unprepared for a program to simply return without being asked. All
: the

: : built-in applications run in a continuous event-processing loop until
another

: : application is selected.

: : Neal

:

: Oops, I have Bunny The Psychic Rabbit and Dates!, both have an exit button to
: terminate on their own behalf and fall correctly back to the Launcher.

I doubt either Bunny or Dates! work with dynamic RAM in quite the way Quartus does. I have a theory on a fix I'll be testing in the new version.

Neal

Re: Palm III troubles?

Posted by [Christian W. Althausen](#) on September 11, 1998 at 16:05:33:

In Reply to: *Re: Palm III troubles?* posted by Neal Bridges on September 10, 1998 at 16:20:18:

: I doubt either Bunny or Dates! work with dynamic RAM in quite the way Quartus
: does. I have a theory on a fix I'll be testing in the new version.

As you now, I've tried everything I could to make version 0.4.x to work
correctly (I've done even the I-Don't-Like-You-Anymore reset (over night without
batteries)) and installed only Quartus and it didn't worked.

Here are my experiences:

- It only works with a Warm-Reset (even when HackMaster is not installed)
- Quartus 0.3.0 has no problems at all (I use SwitchHack, AppHack,
ParenthesesHack, etc)

For now 0.3.0 is good to me, after all I'm only doing the first steps in
programing forth.

Chris

PS: I'll try the next version.

Re: Palm III troubles?

Posted by [Erwin](#) on September 12, 1998 at 11:13:45:

In Reply to: *Re: Palm III troubles?* posted by Christian W. Althausen on
September 11, 1998 at 16:05:33:

: As you now, I've tried everything I could to make version 0.4.x to work
: correctly (I've done even the I-Don't-Like-You-Anymore reset (over night
without
: batteries)) and installed only Quartus and it didn't worked.

: Here are my experiences:

- : - It only works with a Warm-Reset (even when HackMaster is not installed)
- : - Quartus 0.3.0 has no problems at all (I use SwitchHack, AppHack,
: ParenthesesHack, etc)

: For now 0.3.0 is good to me, after all I'm only doing the first steps in
: programing forth.

I seriously suspect a faulty unit of yours, I kind of tested 0.4.1 with various

ROM images in Emulator, with original PIII board, with PIII board in my old evaluation-P5000 without any problems, now have it in the PIII with 8MB TRG board alongside about 5M off stuff, as probable system mangles this is including one and a half handfull of Hacks (Menu, Pop, Battery, VoltageDisplay, GermanChars, Find and Switch) and T9, the Ericsson IR replacement libraries, Commander lite for security reasons.

I have developed and tested a tiny project on the full life system without any more problems then reported for the misbehaving bye word and my own stupidity. All crashes could be resolved by a normal reset. Go figure.

/Erwin

Re: Palm III troubles?

Posted by [Peter Lucas](#) on September 12, 1998 at 15:58:19:

In Reply to: *Re: Palm III troubles?* posted by Erwin on September 12, 1998 at 11:13:45:

Just another data point:

I loaded 0.4.0 onto a Palm III, had immediate and serious problems with crashes when switching to other apps. Didn't have time to investingate--switched back to 0.3 and all is well.

-pete

:

: : As you now, I've tried everything I could to make version 0.4.x to work
: : correctly (I've done even the I-Don't-Like-You-Anymore reset (over night
: : without
: : batteries)) and installed only Quartus and it didn't worked.

: : Here are my experiences:

: : - It only works with a Warm-Reset (even when HackMaster is not installed)
: : - Quartus 0.3.0 has no problems at all (I use SwitchHack, AppHack,
: : ParenthesesHack, etc)

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: : programing forth.

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: ROM images in Emulator, with original PIII board, with PIII board in my old
: evaluation-P5000 without any problems, now have it in the PIII with 8MB TRG
: board alongside about 5M off stuff, as probable system mangles this is
including

: one and a half handfull of Hacks (Menu, Pop, Battery, VoltageDisplay,
: GermanChars, Find and Switch) and T9, the Ericsson IR replacement libraries,
: Commander lite for security reasons.

: I have developed and tested a tiny project on the full life system without any
: more problems than reported for the misbehaving bye word and my own stupidity.
: All crashes could be resolved by a normal reset. Go figure.

: /Erwin

Re: Palm III troubles?

Posted by [Neal Bridges](#) on September 12, 1998 at 17:00:03:

In Reply to: *Re: Palm III troubles?* posted by Peter Lucas on September 12, 1998
at 15:58:19:

: Just another data point:
: I loaded 0.4.0 onto a Palm III, had immediate and serious problems with
crashes
: when switching to other apps. Didn't have time to investigate--switched back
to
: 0.3 and all is well.
: -pete

I think I've got that app-switching on the Palm III fixed; it's in testing now.
New version'll be up soon.

Neal

The Story

Posted by [Erwin Schomburg](#) on September 10, 1998 at 02:23:38:

Ah, forgot to tell how my two last postings hang together. As the
UserName from syncname.txt left one unexpected item on stack and Font from
Graphics.txt removed one unexpectedly, and my little project coincidentally
uses equal numbers of calls to both these words, I ended up with a balanced
stack (thats Forth), but couldn't for my life find for quite a while why the
#@!! implementation of my little project didn't work as supposed despite.

/Erwin

Re: The Story

Posted by [Neal Bridges](#) on September 10, 1998 at 09:47:57:

In Reply to: *The Story* posted by Erwin Schomburg on September 10, 1998 at 02:23:38:

: Ah, forgot to tell how my two last postings hang together. As the
: UserName from syncname.txt left one unexpected item on stack and Font from
: Graphics.txt removed one unexpectedly, and my little project coincidentally
: uses equal numbers of calls to both these words, I ended up with a balanced
: stack (thats Forth), but couldn't for my life find for quite a while why the
: #@!! implementation of my little project didn't work as supposed despite.

That happens. What I do now is use tester to ensure that my
modules don't leak. I've also learned the Forth way -- keep words short, so you
can test all the paths through each word.

BTW, I thought we fixed syncname a while back.

Neal

Re: The Story

Posted by [Erwin Schomburg](#) on September 10, 1998 at 11:11:25:

In Reply to: *Re: The Story* posted by Neal Bridges on September 10, 1998 at 09:47:57:

: : Ah, forgot to tell how my two last postings hang together.

: BTW, I thought we fixed syncname a while back.

: Neal

Yeah, we fixed it two days ago, the same time I kicked out font from Graphics,
but only know it occured to me that others might be interested in the whole
story and I am in talkative mood.

/Erwin

"Font" in Graphics.txt breaks my code

Posted by [Erwin Schomburg](#) on September 10, 1998 at 02:15:02:

Just a caveat, the Font word in Graphics.txt overloads the Font word in the kernel. The kernel word leaves previous font on Stack, the Graphics version explicitly removes it. If one relies on Kernel word behaviour one needs to comment out the instance in Graphics (of course only if Graphics is intended for inclusion).

/Erwin

Re: "Font" in Graphics.txt breaks my code

Posted by [Neal Bridges](#) on September 10, 1998 at 09:44:25:

In Reply to: *"Font" in Graphics.txt breaks my code* posted by Erwin Schomburg on September 10, 1998 at 02:15:02:

: Just a caveat, the Font word in Graphics.txt overloads the Font word in the
: kernel. The kernel word leaves previous font on Stack, the Graphics version
: explicitly removes it. If one relies on Kernel word behaviour one needs to
: comment out the instance in Graphics (of course only if Graphics is intended
for
: inclusion).

Thanks Erwin. That's a holdover from the PilotFORTH world; I'll remove it.

Neal

Documentation

Posted by [Tom Nutley](#) on September 08, 1998 at 07:03:28:

I'm just trying to get into Forth on the P3 and it would be a great help if a few comments could be added to code you post in the file area, esp. in the area of interaction with the Palm OS.

Thanks

Re: Documentation

Posted by [Neal Bridges](#) on September 08, 1998 at 09:52:37:

In Reply to: *Documentation* posted by Tom Nutley on September 08, 1998 at 07:03:28:

: I'm just trying to get into Forth on the P3 and it would be a great help if a
: few comments could be added to code you post in the file area, esp. in the
area
: of interaction with the Palm OS.

Give me a hand, Tom; tell me what your questions are, and I'll write answers.

Neal

Sound.txt now available in the File Area

Posted by [Neal Bridges](#) on September 07, 1998 at 12:14:25:

By request, sound.txt is now available; it allows you to operate the PalmPilot's internal speaker.

Neal

- [File Area](#)

Tester.txt available in the File Area

Posted by [Neal Bridges](#) on September 07, 1998 at 11:39:01:

I've posted John Hayes' tester.txt, which allows this sort of thing:

```
needs tester
{ -> } \ tests for an empty stack
{ 3 5 + -> 8 }
{ 1 0 xor -> 1 }
{ 23 17 swap -> 17 23 }
```

I use tester to code all the word and unit-tests I use for regression testing new releases of Quartus.

Neal

- [File Area](#)

Stack leak in Syncname example?

Posted by [Erwin Schomburg](#) on September 07, 1998 at 04:32:36:

Shouldn't it look like below?
/Erwin

```
_____
create NameBuf 41 chars allot

: UserName ( -- c-addr u )
0. 0. NameBuf >abs 0. 0. 0.
DlkGetSyncInfo drop \ *!@#!*
NameBuf dup >abs StrLen ;

_____
```

Re: Stack leak in Syncname example?

Posted by [Neal Bridges](#) on September 07, 1998 at 11:27:51:

In Reply to: *Stack leak in Syncname example?* posted by Erwin Schomburg on September 07, 1998 at 04:32:36:

```
: Shouldn't it look like below?
: /Erwin
: _____
: create NameBuf 41 chars allot

: : UserName ( -- c-addr u )
: 0. 0. NameBuf >abs 0. 0. 0.
: DlkGetSyncInfo drop \ *!@#!*
: NameBuf dup >abs StrLen ;

: _____
```

It should. In fact the one in my Pilot does have that change, but it wasn't reflected in the Quartus documentation. I've made the correction, thanks.

Neal

ONBOARD development tools

Posted by [Lou Solomon](#) on September 03, 1998 at 12:03:03:

Neal:

Have you (or anyone else) looked at 'Onboard development tools'

url: <http://www.individeo.net/onboard/onbaordC/dox/onboarddevl.html>

From what I can see, pretty wild stuff... Basically, it is a pilot based C compiler, assembler, and, most important to Quartus developers, a pilot based resource editor. From what I can tell, it allows you to build forms, screens, etc... using many (if not all) the pilot widget type things (I'm in over my head here...), stuff like menus, pull down boxes, check boxes, etc. From what I can tell, it can directly access virtually any resource database and allow changes, additions, etc.

I have no idea how they will integrate with Q, but if it does, it could very well be the UI toolkit that quartus needs.

Lou

PS: The demo tools, according the the website, timed out at the end of august. They have not updated the above page yet.

Re: ONBOARD development tools

Posted by [Erwin Schomburg](#) on September 03, 1998 at 12:20:03:

In Reply to: *ONBOARD development tools* posted by Lou Solomon on September 03, 1998 at 12:03:03:

: Neal:

: Have you (or anyone else) looked at 'Onboard development tools'

: url: <http://www.individeo.net/onboard/onbaordC/dox/onboarddevl.html>

: From what I can see, pretty wild stuff... Basically, it is a pilot based C compiler, assembler, and, most important to Quartus developers, a pilot based resource editor. From what I can tell, it allows you to build forms, screens, etc... using many (if not all) the pilot widget type things (I'm in over my head here...), stuff like menus, pull down boxes, check boxes, etc. From what I can tell, it can directly access virtually any resource database and allow changes, additions, etc.

: I have no idea how they will integrate with Q, but if it does, it could very well be the UI toolkit that quartus needs.

: Lou

: PS: The demo tools, according the the website, timed out at the end of august.

They have not updated the above page yet.

I wish you would not try to type a long cryptic URL from a scratchpad but use "proper" copy/paste from onscreen. Here it is copy/pasted directly from my browser: <http://www.individeo.net/Onboard/OnboardC/Dox/OnBoardDev1.html>

/Erwin

Re: ONBOARD development tools

Posted by [Lou Solomon](#) on September 03, 1998 at 18:08:02:

In Reply to: *Re: ONBOARD development tools* posted by Erwin Schomburg on September 03, 1998 at 12:20:03:

: I wish you would not try to type a long cryptic URL from a scratchpad but use
: "proper" copy/paste from onscreen. Here it is copy/pasted directly from my
: browser: <http://www.individeo.net/Onboard/OnboardC/Dox/OnBoardDev1.html>

: /Erwin

Erwin:

I actually tried to cut and paste... when I highlighted the URL in the explorer address, neither the copy nor cut menu item was available.

Lou

Re: ONBOARD development tools

Posted by [Neal Bridges](#) on September 03, 1998 at 14:33:39:

In Reply to: *Re: ONBOARD development tools* posted by Erwin Schomburg on September 03, 1998 at 12:20:03:

: : I have no idea how they will integrate with Q, but if it does, it could very
: well be the UI toolkit that quartus needs.

Looked at it a couple of weeks ago. An on-board resource compiler would be a handy beast indeed. Quartus, in its current form, can use resources compiled with PilRC and Hotsync'd to the Pilot; that's the route I'm currently taking as I proceed with the stand-alone compiler component.

Neal

Re: ONBOARD development tools

Posted by Erwin on September 03, 1998 at 12:57:13:

In Reply to: *Re: ONBOARD development tools* posted by Erwin Schomburg on September 03, 1998 at 12:20:03:

: I wish you would not try to type a long cryptic URL from a scratchpad but use
: "proper" copy/paste from onscreen. Here it is copy/pasted directly from my
: browser: <http://www.individeo.net/Onboard/OnboardC/Dox/OnBoardDev1.html>
: /Erwin

Oh #@%t, it *has* expired.

/Erwin

Re: ONBOARD development tools

Posted by [David Bright](#) on October 02, 1998 at 14:15:22:

In Reply to: *Re: ONBOARD development tools* posted by Erwin on September 03, 1998 at 12:57:13:

: Oh #@%t, it *has* expired.

Check again, a third beta has been posted that doesn't expire until November (so the page says; I haven't personally tried it).

/dab

- [Onboard Development](#)

LeftHack 2.3 available

Posted by [Neal Bridges](#) on September 02, 1998 at 23:44:43:

A little shameless self-promotion. If you're left-handed, have a look at LeftHack, it might make your life a little easier.

Neal

- [LeftHack](#)

Re: LeftHack 2.3 available

Posted by [Erwin Schomburg](#) on September 03, 1998 at 01:59:49:

In Reply to: *LeftHack 2.3 available* posted by Neal Bridges on September 02, 1998 at 23:44:43:

: A little shameless self-promotion. If you're left-handed, have a look at
: LeftHack, it might make your life a little easier.

: Neal

Its your page, you can promote whatever you want (as long as the "real" Quartus compiler is still scheduled to pop up within my statistically to be expected lifetime).

/Erwin

Re: LeftHack 2.3 available

Posted by [Neal Bridges](#) on September 03, 1998 at 09:13:46:

In Reply to: *Re: LeftHack 2.3 available* posted by Erwin Schomburg on September 03, 1998 at 01:59:49:

: : A little shameless self-promotion. If you're left-handed, have a look at
: : LeftHack, it might make your life a little easier.

: : Neal

: Its your page, you can promote whatever you want (as long as the "real"
Quartus
: compiler is still scheduled to pop up within my statistically to be expected
: lifetime).

If you're going to last a few more days, I think I'll be able to meet your condition, Erwin. :)

Neal

Tutorial

Posted by [Jim Cook](#) on September 01, 1998 at 14:49:32:

Neil,

In July you posted a message that you were putting together a tutorial on building a complete app. How far along have you gotten. I've done a lot of programming on the HP-48 but I need help getting started with FORTH and how Palm apps are created. I have all the 3COM documentation printed out, etc. What I really need is a step-by-step guide to putting together a simple app. Perhaps a simple doc viewer or a form app for a J-File database (bicycle log, phone log, etc.)

Thanks!

Jim

Re: Tutorial

Posted by [Neal Bridges](#) on September 01, 1998 at 16:22:21:

In Reply to: *Tutorial* posted by Jim Cook on September 01, 1998 at 14:49:32:

: Neil,

: In July you posted a message that you were putting together a tutorial on
: building a complete app. How far along have you gotten. I've done a lot of
: programming on the HP-48 but I need help getting started with FORTH and how
: Palm apps are created. I have all the 3COM documentation printed out, etc.
: What I really need is a step-by-step guide to putting together a simple app.
: Perhaps a simple doc viewer or a form app for a J-File database (bicycle log,
: phone log, etc.)

A simple DOC viewer is what I have in mind. It's in progress; my primary focus has been the standalone-PRC generation and working through a PalmIII problem a couple of users have reported.

I'll polish up the outline, and post that, and then work on fleshing it in over time.

Neal

Fixed a bug in Environment.txt

Posted by [Neal Bridges](#) on September 01, 1998 at 10:28:15:

If you previously downloaded environment.txt, download it again; I fixed a bug. After clicking on it in the file area, you may need to click Reload to see the new file.

Neal

- [File Area](#)

MEMORY.TXT now available

Posted by [Neal Bridges](#) on August 31, 1998 at 15:01:51:

memory.txt is now available in the Quartus file area. It provides the ISO/ANSI Standard MEMORY wordset: ALLOCATE, FREE and RESIZE, with a non-standard (but handy) word size that returns the size of an allocated region.

For compatibility back to PalmOS 1, keep your total allocations under 14K; for later OS versions, more dynamic RAM is available.

Neal

- [File Area](#)

Graphics.txt now available

Posted by [Neal Bridges](#) on August 31, 1998 at 11:53:01:

I thought this module was in the Quartus File Area; it wasn't. It is now. I blame CRT radiation for my faulty recollection :)

LINE, POINT, CIRCLE, RECTANGLE, ROUNDED-RECTANGLE, FRAME, FONT, and AT are provided.

Neal

- [File Area](#)
-

Snowflake fatal exception

Posted by [Jay Mackey](#) on August 30, 1998 at 07:57:28:

Hi Neal,

I loaded the necessary files on my PIII to run the snowflake program and ran it using Quartus, latest version. It created the snowflake and returned to the blinking cursor. However, something in the OS becomes 'messed-up'. I noticed that the 'Command' stroke didn't work, and as soon as I try to go back to the Applications program a fatal exception occurs.

I realize that these files were intended for PilotForth, so I am wondering if they should or shouldn't work with Quartus.

Also, I am brand new to Forth, so if you could give me a tip for the very first, most effective thing I could do to learn the basics of Forth, be it a website or a book. So far I haven't been able to find a site that has a good "primer" on forth.

Thanks in advance!

Jay Mackey
Spectra Technologies, Inc.
Arlington TX

Re: Snowflake fatal exception

Posted by [Neal Bridges](#) on August 30, 1998 at 10:05:57:

In Reply to: *Snowflake fatal exception* posted by Jay Mackey on August 30, 1998 at 07:57:28:

: I loaded the necessary files on my PIII to run the snowflake program and ran it
: using Quartus, latest version. It created the snowflake and returned to the
: blinking cursor. However, something in the OS becomes 'messed-up'. I noticed
: that the 'Command' stroke didn't work, and as soon as I try to go back to the
: Applications program a fatal exception occurs.

: I realize that these files were intended for PilotForth, so I am wondering if
: they should or shouldn't work with Quartus.

Certainly the graphics module from the PilotFORTH page is PilotFORTH-specific. Try using graphics.txt from the Quartus File Area.

: Also, I am brand new to Forth, so if you could give me a tip for the very first,
: most effective thing I could do to learn the basics of Forth, be it a website or

: a book. So far I haven't been able to find a site that has a good "primer" on
: forth.

The first thing I'd do is download the Standard and read through the Appendices.
Also, have a look at my 'links' page, there's a link to "Forth Resources on the
Web" that has pointers to online tutorials.

And subscribe to comp.lang.forth.

Kind regards,
Neal

Thanks and another question

Posted by [Jay Mackey](#) on September 02, 1998 at 00:14:54:

In Reply to: *Re: Snowflake fatal exception* posted by Neal Bridges on August 30,
1998 at 10:05:57:

: The first thing I'd do is download the Standard and read through the
Appendices.

: Also, have a look at my 'links' page, there's a link to "Forth Resources on
the
: Web" that has pointers to online tutorials.

: And subscribe to comp.lang.forth.

: Kind regards,
: Neal

Thanks,

And another question:

: SQUARED DUP * ;

2 SQUARED . /returns 4

: CUBED DUP SQUARED * ;

2 CUBED . /returns 8

: ^4 SQUARED SQUARED ;

2 ^4 . /returns 16

: ^16 ^4 ^4 ;

2 ^16 . /returns 0

Does "^16" return zero because of an "overflow" condition?

Thanks in advance,

Jay

Re: Thanks and another question

Posted by [Neal Bridges](#) on October 29, 1998 at 01:00:33:

In Reply to: *Thanks and another question* posted by Jay Mackey on September 02, 1998 at 00:14:54:

: 2 ^16 . /returns 0

: Does "^16" return zero because of an "overflow" condition?

Yes, it returns 0 because cells are 16-bits wide, in Quartus. Arithmetic overflow.

Neal

Re: Snowflake fatal exception

Posted by [Matthias Schneider](#) on August 31, 1998 at 04:40:35:

In Reply to: *Re: Snowflake fatal exception* posted by Neal Bridges on August 30, 1998 at 10:05:57:

: : I loaded the necessary files on my PIII to run the snowflake program and ran
: it

: : using Quartus, latest version. It created the snowflake and returned to
the

: : blinking cursor. However, something in the OS becomes 'messed-up'. I
noticed

: : that the 'Command' stroke didn't work, and as soon as I try to go back to
the

: : Applications program a fatal exception occurs.

: : I realize that these files were intended for PilotForth, so I am wondering
if

: : they should or shouldn't work with Quartus.

: Certainly the graphics module from the PilotFORTH page is

: PilotFORTH-specific. Try using graphics.txt from the Quartus

File

: Area.

Hi Neal,

sorry, I can't find graphics.txt in the Quartus File Area.

(and have also problems with the PILOTFORTH-Version.

Where is it?

Matthias

Re: Snowflake fatal exception

Posted by [Neal Bridges](#) on August 31, 1998 at 11:56:28:

In Reply to: *Re: Snowflake fatal exception* posted by Matthias Schneider on August 31, 1998 at 04:40:35:

: I
: noticed
: : : that the 'Command' stroke didn't work, and as soon as I try to go back to
: the
: : : Applications program a fatal exception occurs.

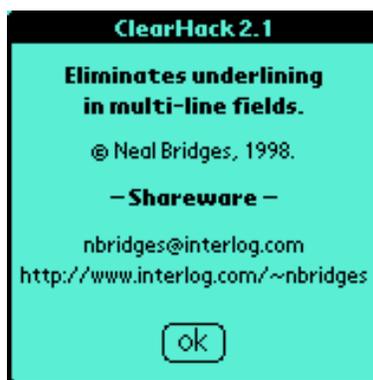
I've put graphics.txt in the File Area; see my other posting on that.

As to the Command stroke, Snowflake does a 1001 showform, which switches to a blank full-screen form with no graffiti indicator or menu. The command stroke only works in forms having a menu. Type MainForm to return to the main Quartus form, and the Command stroke will work.

Neal

ClearHack 1.1 now available!

Posted by [Neal Bridges](#) on August 29, 1998 at 23:44:20:



After months of being driven to distraction by that annoying dotted underlining in the MemoPad, months of squinting at colons and periods to see if they're not really semi-colons or commas, I threw down the gauntlet and wrote ClearHack. It's a HackMaster hack that takes the underlining out of all multi-line fields.

Have a look!

- [ClearHack 1.1](#)

Encryption algorithm now available in the File Area

Posted by [Neal Bridges](#) on August 22, 1998 at 00:31:29:



Check out *arcfour.txt* in the File Area. It's a Standard Forth implementation of a strong symmetric stream cipher with a variable key size.

Neal

- [File Area](#)

Re: Encryption algorithm now available in the File Area

Posted by [Ingo Mathyl](#) on August 23, 1998 at 05:05:26:

In Reply to: *Encryption algorithm now available in the File Area* posted by Neal Bridges on August 22, 1998 at 00:31:29:

: Check out *arcfour.txt* in the File Area. It's a Standard Forth
: implementation of a strong symmetric stream cipher with a variable key size.

: Neal

Hi Neal!

Your encryption code works fine but the example is not ok:

```
: K s" password" ;  
: M s" Secret message!" ;  
M type cr  
K arcfourkey M arcfour  
M type cr  
K arcfourkey M arcfour  
M type cr
```

Ingo

Re: Encryption algorithm now available in the File Area

Posted by [Neal Bridges](#) on August 23, 1998 at 12:43:41:

In Reply to: *Re: Encryption algorithm now available in the File Area* posted by Ingo Mathyl on August 23, 1998 at 05:05:26:

:
: : Check out *arcfour.txt* in the File Area. It's a Standard Forth
: : implementation of a strong symmetric stream cipher with a variable key size.
: : Neal

: Hi Neal!

: Your encryption code works fine but the example is not ok:

```
: : K s" password" ;  
: : M s" Secret message!" ;  
: M type cr  
: K arcfourkey M arcfour  
: M type cr  
: K arcfourkey M arcfour  
: M type cr
```

: Ingo

Found and fixed late yesterday, Ingo. Thanks for the report.

Neal

Back Up And Running...

Posted by [Synthe Omicron](#) on August 21, 1998 at 23:42:13:

Hi again all:

Okay, got back home and I'm now up and running, after some HotSync problems. Here's a complete list of what's on the Pilot now, not including the ROM (preinstalled by Palm) apps (version 2.0.5 on the Palm, version 3.0 Palm Desktop software):

Installed on Pilot

=====

AportisDoc Mobile Edition

RPN

AppMan

BackupBuddy

HackMaster (hacks below)

L0pht-Ball
Pilot Info
Quartus
PocketChess

Hacks
=====
TextEditHack
MenuHack
FindHack
CalcHack

Quartus seems to be running fine. Since I've had no problems with Eco Hack, I plan to get it back and use it, only when Quartus is run, I'll have it switch back to normal (16MHz) mode. I also plan to use BackupBuddy on a regular basis and run Palm Info's defrag liberally (esp. when hacking FORTH).

Next question: What do all of you PalmOS/FORTH hackers have installed, I'd be interested in seeing what utilities everyone is using. I just got the Pilot on Wednesday, so I'm ultra-new. Please, email or post your lists. I encourage you to post, for the benefit of others. Include all your installed stuff, I'm also looking for a good organizer and other useful (small is good) programming aids.

Thanks to all, and thanks Neal for the prompt replies.

--Synthe

- [Synthe Omicron's Web Site](#)

Quartus vs PilotFORTH: New features

Posted by [Neal Bridges](#) on August 21, 1998 at 17:00:32:

: I have a brand new Palm Pro (with no hardware upgrades) and have been installing
: all the usual apps, including PilotFORTH and then Quartus (I then deleted
: PilotFORTH, which raises a sub question for Neal: What is in Quartus that's not
: in PilotFORTH and what makes it better? I realize there's the added debugger
and
: other features, but I was looking for a comprehensive compare and contrast
: list).

PilotFORTH was the prototype and proving ground for Quartus. Quartus is a ground-up reimplementaion.

Quartus has:

- Much more available code- and dataspace
- Transparent access to PalmOS sysstraps
- Hashed and threaded Forth dictionary lookup
- Integrated fast floating-point routines

- Register caching of the top datastack item
- Text messages for all ISO/ANS Forth Standard exceptions
- Larger set of Standard words incorporated into the kernel
- (coming soon in the commercial release) the ability to spawn Forth applications as stand-alone, native-code, freely-distributable PRC files
- Other minor features, such as a Graffiti shift-state indicator on the console

Neal

Eco Hack and Quartus == Hard Reset to Fix(?)

Posted by [Synthe Omicron](#) on August 21, 1998 at 16:14:11:

Hi all:

I have a brand new Palm Pro (with no hardware upgrades) and have been installing all the usual apps, including PilotFORTH and then Quartus (I then deleted PilotFORTH, which raises a sub question for Neal: What is in Quartus that's not in PilotFORTH and what makes it better? I realize there's the added debugger and other features, but I was looking for a comprehensive compare and contrast list).

In any event, I also have Eco Hack installed, and recently, upon launching Quartus, I preformed the "up" stroke for Eco Hack (this will probably only make sense for Eco Hack users) which returns the Pilot from 10MHz to 16MHz (I keep the Pilot in 10 MHz mode most of the time. Usually, I switch right before going to Quartus, which is just about the only app I want running at full speed on my Palm [not counting serial-opening apps, which do the same by themselves, again, more Eco Hack specific stuff]) and got a Fatal Exception.

Restarted as prompted, got the "Welcome" screen and the dialogue to reinstall all my Hacks. Tapped "Ok". Fatal Exception. Next, I restarted and the same thing but chose "Cancel" so as not to reactivate the Hacks. Fatal Exception. Soft Reset did nothing (same deal as above), Warm Reset did the same thing as above, only displaed a different error message which I didn't write down. Something about XXXXXXX.c and a line 3XXX (where the Xs represent the information I don't remember). Did a Hard Reset, which worked to the point of throwing me back to square one. I'll go home tonight from work and re-load and run some diagnostics and see what turns up.

In any event, here's a nigh-complete list of just what was on my Pilot before it went boom. Some of these may or not be Hacks, cant fully remember. As far as pre-installed apps go, I was using PalmOS 2.0.5.

AppMan
L0pht-Ball
BatteryMonitor
TextEditHack
CalcHack
RPN
AportisDOC (Mobile Edition)

HackMaster
Quartus
PocketChess
MenuHack
FPSutility
EcoHack (without Eco Config)

Hrm. Seems like a small list. Well, after I get done with the diagnostics, I'll let you all know. Anyone here experience the same problem or have any hypothesis?

--Synthe

- [Synthe Omicron's Web Site](#)

Re: Eco Hack and Quartus == Hard Reset to Fix(?)

Posted by [Neal Bridges](#) on August 21, 1998 at 16:45:40:

In Reply to: *Eco Hack and Quartus == Hard Reset to Fix(?)* posted by Synthe Omicron on August 21, 1998 at 16:14:11:

: Hi all:

: I have a brand new Palm Pro (with no hardware upgrades) and have been installing
: all the usual apps, including PilotFORTH and then Quartus (I then deleted
: PilotFORTH, which raises a sub question for Neal: What is in Quartus that's
not
: in PilotFORTH and what makes it better? I realize there's the added debugger
and
: other features, but I was looking for a comprehensive compare and contrast
: list).

I'll tackle this question in another posting.

: In any event, I also have Eco Hack installed, and recently, upon launching
: Quartus, I preformed the "up" stroke for Eco Hack (this will probably only
make
: sense for Eco Hack users) which returns the Pilot from 10MHz to 16MHz (I keep
: the Pilot in 10 MHz mode most of the time. Usually, I switch right before
going
: to Quartus, which is just about the only app I want running at full speed on
my
: Palm [not counting serial-opening apps, which do the same by themselves,
again,
: more Eco Hack specific stuff]) and got a Fatal Exception.

My experiences with EcoHack have been all bad. When Quartus starts, it asks the OS to allocate a 40000-byte workspace in storage RAM; depending on the state of

memory fragmentation your system, this may involve a fair number of memory moves by the system itself. I believe that it's during these intensive memory accesses that some Pilots fail when EcoHack is active. Obviously if the system crashes during a major memory-reallocation, it's not going to be any too happy on restart. For this reason (and also because of display instabilities I experienced with EcoHack) I don't use it.

Of course, your mileage may vary.

Neal

Re: Eco Hack and Quartus == Hard Reset to Fix(?)

Posted by [Mike MacPhee](#) on August 30, 1998 at 22:11:08:

In Reply to: *Re: Eco Hack and Quartus == Hard Reset to Fix(?)* posted by Neal Bridges on August 21, 1998 at 16:45:40:

For this reason (and also because of display instabilities I : experienced with EcoHack) I don't use it.

I have been adding Quartus to my PIII since a very early version. Somewhere along the way, the newer versions became unable to initiallize their own workspace, but would work happily if I installed an "old" workspace. That was good enough until Launch'Em did something inappropriate, and caused several problems. I have cleaned all of them up (with a complete backup except for 'saved' and 'unsaved' preferences), but now Quartus causes a Fatal Exception upon quitting (tapping the APPS button). Per the earlier contributions to this thread, I tried deleting EcoHack, but to no avail. I have a bunch of applications including hacks loaded, of course (can you loan me the money for a TRG card?), but rather than bore you with all that now, I'll just ask if any of this has been solved.

BTW, thanks for a great program.

Mike

Re: Eco Hack and Quartus == Hard Reset to Fix(?)

Posted by [Neal Bridges](#) on August 31, 1998 at 00:43:10:

In Reply to: *Re: Eco Hack and Quartus == Hard Reset to Fix(?)* posted by Mike MacPhee on August 30, 1998 at 22:11:08:

: I have been adding Quartus to my PIII since a very early version. Somewhere
: along the way, the newer versions became unable to initialize their own
: workspace, but would work happily if I installed an "old" workspace. That was

Odd. The workspace allocation code is unchanged from the earliest versions.
Try deleting Quartus, disabling all hacks, installing it, starting it, and then
re-enabling hacks, let me know what happens.

Neal

Re: Eco Hack and Quartus == Hard Reset to Fix(?)

Posted by [Mike MacPhee](#) on September 02, 1998 at 01:04:20:

In Reply to: *Re: Eco Hack and Quartus == Hard Reset to Fix(?)* posted by Neal Bridges on August 31, 1998 at 00:43:10:

: Try deleting Quartus, disabling all hacks, installing it, starting it, and
then

: re-enabling hacks, let me know what happens.

: Neal

Right you are: With all the hacks disabled, the workspace is initialized
properly, and the program terminates properly. I will do some experimenting
with hacks to see which one(s) might be acting up.

Thanks for the help.

Mike

low-level serial port programming

Posted by [Stephen Bannasch](#) on August 19, 1998 at 16:12:39:

Can I do low level serial port programming with Quartus?

I have designed devices which communicate using simple rs-232 serial protocols at 2400 to 9600 bps. I'd like to write code to collect and graph data sent by these devices.

Re: low-level serial port programming

Posted by [Neal Bridges](#) on August 19, 1998 at 20:02:34:

In Reply to: *low-level serial port programming* posted by Stephen Bannasch on August 19, 1998 at 16:12:39:

: Can I do low level serial port programming with Quartus?

: I have designed devices which communicate using simple rs-232 serial protocols
: at 2400 to 9600 bps. I'd like to write code to collect and graph data sent by
: these devices.

You can indeed. Wade Johnson produced some code for PilotFORTH which could be ported to Quartus without much difficulty. Have a look at the link below.

Neal

- [Wade Johnson's PilotFORTH code](#)

Hiding the Cell Size from ANS Forths?

Posted by [Bill Volk](#) on August 18, 1998 at 16:39:26:

This may be a really stupid question, but is there a way of removing "word size" and "addressing specifics" dependency from Forth code?

For example here is my definition of a word that creates two dimensional matrixes...

```
: Matrix ( x y "name" -- )
CREATE 2DUP , ,
* 2* ALLOT
DOES> ( x y -- addr )
>R I @ * 2*
SWAP 2* +
```

4 + R> +

;

The 2* and the 4 + are dependent on the fact that this ANS Forth uses 2 bytes per. word and that addressing is byte based.

Are there words like CELLSIZE or something else to hide this dependency?

On another thought ... is it possible to create a ANS equivalent of multiple CFA words? I.E. define multiple runtime actions for a Matrix (return value, return address, set value) and have some prefix word compile the proper CFA?

Thanks,

Bill Volk

--

``Perfection (in design) is achieved not when there is nothing more to add, but rather when there is nothing more to take away.'' Antoine de Saint-Exupery

Re: Hiding the Cell Size from ANS Forths?

Posted by [Neal Bridges](#) on August 19, 1998 at 00:04:25:

In Reply to: *Hiding the Cell Size from ANS Forths?* posted by Bill Volk on August 18, 1998 at 16:39:26:

: This may be a really stupid question, but is there a way of removing "word size"

: and "addressing specifics" dependency from Forth code?

Bill, look up CELLS in the standard, also CHARS. These words are for just what you describe, making CELL and CHAR-sized operations system-independent.

Neal

Re: Hiding the Cell Size from ANS Forths?

Posted by [Bill Volk](#) on August 19, 1998 at 19:53:03:

In Reply to: *Re: Hiding the Cell Size from ANS Forths?* posted by Neal Bridges on August 19, 1998 at 00:04:25:

: : This may be a really stupid question, but is there a way of removing "word : size"

: : and "addressing specifics" dependency from Forth code?

: Bill, look up CELLS in the standard, also CHARS. These words are for just what

: you describe, making CELL and CHAR-sized operations system-independent.

Cool stuff, I get more and more impressed with ANS Forth (and QUARTUS) every time I find something like this.

Is there a good published text on ANS Forth? Has Leo Brodie updated "Starting FORTH" to ANS standards?

Thanks,

Bill Volk

Re: Hiding the Cell Size from ANS Forths?

Posted by [Neal Bridges](#) on August 19, 1998 at 20:17:00:

In Reply to: *Re: Hiding the Cell Size from ANS Forths?* posted by Bill Volk on August 19, 1998 at 19:53:03:

: Cool stuff, I get more and more impressed with ANS Forth (and QUARTUS) every
: time I find something like this.

: Is there a good published text on ANS Forth? Has Leo Brodie updated "Starting
: FORTH" to ANS standards?

There's a page out there with examples from Starting Forth updated for ANS; you may find it before I do. Also, I understand it's being revised by Leo.

Neal

ENVIRONMENT.TXT now in the File Area

Posted by [Neal Bridges](#) on August 16, 1998 at 20:09:04:

environment.txt provides ENVIRONMENT? from the CORE wordset. It's in the File Area.

Neal

- [File Area](#)

?DO what's the ANS susbtitute? OOP in 12 lines!

Posted by [Bill Volk](#) on August 12, 1998 at 23:06:10:

I managed to find the "OOP in 12 lines" stuff ... won't compile due to the use of a word "?DO" ... what's ?DO do?

Anyway, here's the OOP stuff...

From: Bernd Paysan

```
: METHOD ( m v -- m' v ) CREATE OVER , SWAP CELL+ SWAP
DOES> ( ... o -- ... ) @ OVER @ + @ EXECUTE ;
: VAR ( m v size -- m v' ) CREATE OVER , +
DOES> ( o -- addr ) @ + ;
: CLASS ( class -- class methods vars ) DUP 2@ ;
: END-CLASS ( class methods vars -- )
CREATE HERE >R , DUP , 0 ?DO [' ] NOOP , LOOP
CELL+ DUP CELL+ SWAP @ 2 - CELLS R> 2 CELLS + SWAP MOVE ;
: DEFINES ( xt class -- ) ' >BODY @ + ! ;
: NEW ( class -- o ) HERE SWAP DUP , @ 1 CELLS - ALLOT ;
: :: ( class "name" -- ) ' >BODY @ + @ COMPILE, ;
CREATE OBJECT 1 CELLS , 2 CELLS ,
```

Re: ?DO what's the ANS susbtitute? OOP in 12 lines!

Posted by [Neal Bridges](#) on August 13, 1998 at 00:23:23:

In Reply to: *?DO what's the ANS susbtitute? OOP in 12 lines!* posted by Bill Volk on August 12, 1998 at 23:06:10:

: I managed to find the "OOP in 12 lines" stuff ... won't compile due to the use
: of a word "?DO" ... what's ?DO do?

?DO is in the CORE EXT wordset, in the Quartus File Area as core-ext.txt. It's a Standard word that works just as DO does if its arguments differ; if they are equal, the ?DO..LOOP is not performed.

Neal

Re: ?DO what's the ANS susbtitute? OOP in 12 lines!

Posted by [Bill Volk](#) on August 13, 1998 at 18:36:58:

In Reply to: *Re: ?DO what's the ANS susbtitute? OOP in 12 lines!* posted by Neal Bridges on August 13, 1998 at 00:23:23:

Thanks. I figured out that during some marketing meeting (isn't the pilot great fun?).

Anyway, just attempting to understand what the oop stuff does, and how it does it ... is a really good education.

I'm impressed that the ANS model does so much without having to be specific about the threading model or the nature of cfa's. Really clean.

By the way, what Forth do you recommend for a Windows PC?

Thanks,

Bill

Re: ?DO what's the ANS susbtitute? OOP in 12 lines!

Posted by [Neal Bridges](#) on August 14, 1998 at 00:05:39:

In Reply to: *Re: ?DO what's the ANS susbtitute? OOP in 12 lines!* posted by Bill Volk on August 13, 1998 at 18:36:58:

: I'm impressed that the ANS model does so much without having to be specific
: about the threading model or the nature of cfa's. Really clean.

I like it also. The ANS model is really a beautiful Forth.

: By the way, what Forth do you recommend for a Windows PC?

I don't use one under Windows with any regularity. I've tried Win32Forth, it's very large and seems to have one of everything except documentation.

Neal

Quartus 0.4.1β now available in the Quartus File Area

Posted by [Neal Bridges](#) on August 12, 1998 at 22:17:36:

Changes in 0.4.1β: Fixed a bug in MARKER.

Neal

- [File Area](#)

Re: Quartus 0.4.1β now available in the Quartus File Area

Posted by [Ed Wilborne](#) on August 12, 1998 at 22:26:26:

In Reply to: *Quartus 0.4.1β now available in the Quartus File Area* posted by Neal Bridges on August 12, 1998 at 22:17:36:

Neal,

Did the version # get missed in the update?

Thanks!

Ed

: Changes in 0.4.1β: Fixed a bug in MARKER.

: Neal

Re: Quartus 0.4.1β now available in the Quartus File Area

Posted by [Neal Bridges](#) on August 12, 1998 at 23:02:29:

In Reply to: *Re: Quartus 0.4.1β now available in the Quartus File Area* posted by Ed Wilborne on August 12, 1998 at 22:26:26:

: Neal,

: Did the version # get missed in the update?

: Thanks!

: Ed

Yup. Fixed it 10 minutes later.

Neal

FOR NEXT

Posted by [Neal Bridges](#) on August 12, 1998 at 14:31:23:

Also present in 0.4.0 are two new words, FOR and NEXT. They provide an optimized, decrement-only form of DO LOOP.

```
: demo 10 for i . next ;  
demo 9 8 7 6 5 4 3 2 1 0 ok
```

Neal

safe.txt now available in the File Area

Posted by [Neal Bridges](#) on August 12, 1998 at 13:58:44:

safe.txt is now available in the Quartus File Area. It provides compile and run-time error-checking for a number of common Forth programming errors.

Neal

- [File Area](#)

Do not use Defraggers on PIII

Posted by [Erwin Schomburg](#) on August 12, 1998 at 13:36:30:

From assorted threads below I get it that some people have followed Neal's advice for preparing ones system to the letter and tried to defrag a PIII, thus asking for real trouble.

As Forthies are supposed to know what they do, else live with the consequences, one should have expected that people, conciously trying out this beautiful but most dangerous and unforgiving programming environment, would have realized that the memory model for OS3 does no longer feature the 64k heap structure the defraggers meant for OS1 and OS2 are trying to act upon.

Again, do not try to defrag a PIII, as there is only one big user heap left,

defragging memory shuffling may end up in system areas not even a hard reset touches, thus requiring you to de-power the machine until all memory is lost and start from scratch.

/Erwin

Re: Do not use Defraggers on PIII

Posted by [Neal Bridges](#) on August 12, 1998 at 13:51:38:

In Reply to: *Do not use Defraggers on PIIIs* posted by Erwin Schomburg on August 12, 1998 at 13:36:30:

: From assorted threads below I get it that some people have followed Neal's
: advice for preparing ones system to the letter and tried to defrag a PIII,
thus
: asking for real trouble.

Thanks Erwin.

Neal

Bug in MARKER

Posted by [Neal Bridges](#) on August 12, 1998 at 11:43:32:

Jim Deakin turned up a bug in MARKER whereby some word names still show up in the wordlist after they've been forgotten. I've fixed it and will upload 0.4.1 tonight.

Neal

Using Palm Pilot Emulator with QUARTUS

Posted by [Bill Volk](#) on August 11, 1998 at 17:21:30:

This may sound stupid, but how can I move text (Forth Source) into the Notebook of the Palm Pilot Emulator (under Windows) so I can develop my QUARTUS applications that way?

On the same subject, is there a reliable way of switching between the notepad application and QUARTUS on a real PalmPilot as well?

Thanks,

Bill

Re: Using Palm Pilot Emulator with QUARTUS

Posted by [Neal Bridges](#) on August 11, 1998 at 19:53:13:

In Reply to: *Using Palm Pilot Emulator with QUARTUS* posted by Bill Volk on August 11, 1998 at 17:21:30:

: This may sound stupid, but how can I move text (Forth Source) into the Notebook

: of the Palm Pilot Emulator (under Windows) so I can develop my QUARTUS applications that way?

: On the same subject, is there a reliable way of switching between the notepad application and QUARTUS on a real PalmPilot as well?

Hi, Bill. You can hotsync the emulator just like a real device, if you have the appropriate cable... beyond that, I have a memory of someone telling me they'd written something to redirect a file into keystrokes for the emulator; I'll see if I can remember.

I use SwitchHack to go back and forth between the MemoPad and Quartus. Never fails me.

Neal

Re: Using Palm Pilot Emulator with QUARTUS

Posted by [Bill Volk](#) on August 12, 1998 at 23:02:17:

In Reply to: *Re: Using Palm Pilot Emulator with QUARTUS* posted by Neal Bridges on August 11, 1998 at 19:53:13:

: I use SwitchHack to go back and forth between the MemoPad and Quartus. Never fails me.

Works o.k., but Quartus re-inits itself when I switch back from the Notepad. Is there a way of keeping Quartus "alive" and accessing the Notepad?

Thanks,

Bill

Re: Using Palm Pilot Emulator with QUARTUS

Posted by [Neal Bridges](#) on August 13, 1998 at 00:24:14:

In Reply to: *Re: Using Palm Pilot Emulator with QUARTUS* posted by Bill Volk on August 12, 1998 at 23:02:17:

:
: : I use SwitchHack to go back and forth between the MemoPad and Quartus.
Never
: : fails me.

: Works o.k., but Quartus re-inits itself when I switch back from the Notepad.
: Is there a way of keeping Quartus "alive" and accessing the Notepad?

Not yet. It's on my to-do list.

Neal

Fatal Exception in 0.4.0

Posted by [Christian W. Althausen](#) on August 11, 1998 at 14:12:57:

Hi Neal,

tanks for your great software, I'm having a real good time with it, but I got a few problems:

1st - I coldn't use vers 0.4.0 because it caused many fatal exceptions when I switched from Quartus to other programs (I usualy set my ToDo button to Quartus so I can get back and forth Memopad with easy). SwitchHack was turned off!

2nd - I'm not a Forth programer (the closest I got whas programming my HP48 calculator), so I have some headache to find out how to show what is in the stack. My documentation is very old (GraFORTH for the Apple][) and it has a word that turn on the "stack echo", like after each operation it shows the stack.

Thanks in advance,

Chris

PS: Don't have us whait too long before the full compilation hability.

Re: Fatal Exception in 0.4.0

Posted by [Neal Bridges](#) on August 11, 1998 at 14:19:38:

In Reply to: *Fatal Exception in 0.4.0* posted by Christian W. Althausen on August 11, 1998 at 14:12:57:

: Hi Neal,

: tanks for your great software, I'm having a real good time with it, but I got a
: few problems:

: 1st - I coldn't use vers 0.4.0 because it caused many fatal exceptions when I
: switched from Quartus to other programs (I usually set my ToDo button to
Quartus
: so I can get back and forth Memopad with easy). SwitchHack was turned off!

Have a look at the advice I gave Deakin in the thread below.

: 2nd - I'm not a Forth programer (the closest I got whas programming my HP48
: calculator), so I have some headache to find out how to show what is in the
: stack. My documentation is very old (GraFORTH for the Apple][) and it has a
: word that turn on the "stack echo", like after each operation it shows the
: stack.

.S will show the stack contents at any point. If a word is so long you find
yourself needing to know the stack contents at several points, that's a strong
indicator that you should factor your word into smaller parts.

: Thanks in advance,

: Chris

: PS: Don't have us whait too long before the full compilation hability.

It's in the works... It's good to see the enthusiasm.

Neal

- [Resolving HackMaster issues](#)

Re: Fatal Exception in 0.4.0

Posted by [Christian W. Althausen](#) on August 12, 1998 at 09:30:17:

In Reply to: *Re: Fatal Exception in 0.4.0* posted by Neal Bridges on August 11, 1998 at 14:19:38:

: Have a look at the advice I gave Deakin in the thread below.

Done that didn't worked. I'm using a Palm III and have done the following steps:

- Uninstall and delete all hacks
- Delete HackMaster
- Delete Quartus
- Used PilotInfo from Derek Kwan to de-frag
- Hard Reset
- Installed only Quartus 0.4.0

And after all that it still doesn't work (all I have to do to crash is open Quartus then tap the NotePad button). Version 0.3.0 works perfectly.

My startup.quartus is empty, and I have not installed HackMaster anymore.

thanks for your patience,

chris

Re: Fatal Exception in 0.4.0

Posted by [Neal Bridges](#) on August 12, 1998 at 14:06:35:

In Reply to: *Re: Fatal Exception in 0.4.0* posted by Christian W. Althausen on August 12, 1998 at 09:30:17:

: : Have a look at the advice I gave Deakin in the thread below.

: Done that didn't work. I'm using a Palm III and have done the following steps:

- : - Uninstall and delete all hacks
- : - Delete HackMaster
- : - Delete Quartus
- : - Used PilotInfo from Derek Kwan to de-frag
- : - Hard Reset
- : - Installed only Quartus 0.4.0

: And after all that it still doesn't work (all I have to do to crash is open Quartus then tap the NotePad button). Version 0.3.0 works perfectly.

: My startup.quartus is empty, and I have not installed HackMaster anymore.

: thanks for your patience,

Have you started the MemoPad and created at least one memo before starting Quartus? Quartus assumes the MemoPad database exists, and it occurs to me it may not actually exist before the MemoPad is run for the first time.

Neal

Re: Fatal Exception in 0.4.0

Posted by [Christian W. Althausen](#) on August 13, 1998 at 07:08:02:

In Reply to: *Re: Fatal Exception in 0.4.0* posted by Neal Bridges on August 12, 1998 at 14:06:35:

: Have you started the MemoPad and created at least one memo before starting
: Quartus?

My MemoPad is never empty, so that's not the problem.

I've done the Ultimate Reset (remove batteries for 1 hour), installed only the system 3.0.1 update and Quartus and it also didn't worked. I haven't tested without the system update...

Did anyone tested Quartus in a real Palm III ? Maybe the debug mode that is always turned on on the emulator prevents this error, just guessing.

Chris

Re: Fatal Exception in 0.4.0

Posted by [Christian W. Althausen](#) on August 13, 1998 at 07:35:33:

In Reply to: *Re: Fatal Exception in 0.4.0* posted by Christian W. Althausen on August 13, 1998 at 07:08:02:

: I've done the Ultimate Reset (remove batteries for 1 hour), installed only the
: system 3.0.1 update and Quartus and it also didn't worked. I haven't tested
: without the system update...

Well, now I have, same problem. But I found out that It work if I do a Warm Reset.

I don't now what is patching my memory, for I've deleted everything but Quartus, and even so it only work in Warm Reset mode.

HELP !!

Chris

Re: Fatal Exception in 0.4.0

Posted by [Neal Bridges](#) on August 13, 1998 at 15:18:04:

In Reply to: *Re: Fatal Exception in 0.4.0* posted by Christian W. Althausen on August 13, 1998 at 07:35:33:

: : I've done the Ultimate Reset (remove batteries for 1 hour), installed only the
: : system 3.0.1 update and Quartus and it also didn't worked. I haven't tested
: : without the system update...

: Well, now I have, same problem. But I found out that It work if I do a Warm
: Reset.

: I don't now what is patching my memory, for I've deleted everything but
Quartus,
: and even so it only work in Warm Reset mode.

: HELP !!

It's been tested on other Palm III devices without problems, Chris. I'm curious as to the exact sequence of steps that's causing your error; I'd like to be able to replicate it.

Is it possible that your Flash RAM is in some way corrupted and needs to be reinstalled?

Do you have a non-US version of the ROM?

Neal

Re: Fatal Exception in 0.4.0

Posted by [Erwin Schomburg](#) on August 12, 1998 at 15:22:10:

In Reply to: *Re: Fatal Exception in 0.4.0* posted by Neal Bridges on August 12, 1998 at 14:06:35:

: Have you started the MemoPad and created at least one memo before starting
: Quartus? Quartus assumes the MemoPad database exists, and it occurs to me it
: may not actually exist before the MemoPad is run for the first time.

: Neal

Arggh, when did you last have to hard reset your Pilot?

You get that Palm advertisement memo on hard reset, just to make sure there is something in, in case someone assumes the MemoDB exists....

/Erwin

Re: Fatal Exception in 0.4.0

Posted by [Neal Bridges](#) on August 12, 1998 at 16:37:54:

In Reply to: *Re: Fatal Exception in 0.4.0* posted by Erwin Schomburg on August 12, 1998 at 15:22:10:

: : Have you started the MemoPad and created at least one memo before starting
: : Quartus? Quartus assumes the MemoPad database exists, and it occurs to me
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: : Neal

: Arggh, when did you last have to hard reset your Pilot?

: You get that Palm advertisement memo on hard reset, just to make sure there is
: something in, in case someone assumes the MemoDB exists....

: /Erwin

Erwin, I know about the two default memos, they come from a ROM image. I'm not
certain, however, that they're written out before MemoPad is run for the first
time. I'm going to check.

Neal

Re: Fatal Exception in 0.4.0

Posted by [Neal Bridges](#) on August 12, 1998 at 16:42:25:

In Reply to: *Re: Fatal Exception in 0.4.0* posted by Neal Bridges on August 12,
1998 at 16:37:54:

: Erwin, I know about the two default memos, they come from a ROM image. I'm
not
: certain, however, that they're written out before MemoPad is run for the first
: time. I'm going to check.

I just checked the Palm III emulator, and in fact the memo database does exist
before the first execution of the MemoPad, which rules out that thought.

Neal

Re: Fatal Exception in 0.4.0

Posted by [Erwin Schomburg](#) on August 13, 1998 at 00:42:24:

In Reply to: *Re: Fatal Exception in 0.4.0* posted by Neal Bridges on August 12, 1998 at 16:42:25:

Yep, in fact at least one item for every built in app's databases.
/Erwin

Re: Fatal Exception in 0.4.0

Posted by [Erwin Schomburg](#) on August 12, 1998 at 13:10:30:

In Reply to: *Re: Fatal Exception in 0.4.0* posted by Christian W. Althausen on August 12, 1998 at 09:30:17:

Using **any** defragger on Palm OS3 is a pretty effective way of asking to have your system fucked up real good. Get out your batteries overnight (as it may be beyond a hard reset beeing able to cure it) and start from scratch.

/Erwin

What's a CFA in Quartus, QUANS etc....

Posted by [William Volk](#) on August 10, 1998 at 16:38:55:

Traditionally in Forth if I want to extend the language I often access the Code Field Address of a Word. In other words an address that points to the execution block of a colon definition.

I don't know how Quartus deals with this, since it's a native code compiler.

Specifically I want to do two things ... QUANS (multiple CFA words) and an OOP layer. Quans are words that compile diffenet behavior with a prefix. For example:

```
QUAN FOO 5
```

```
FOO . 5
```

```
7 -> FOO
```

```
FOO . 7
```

So the function `->` has no runtime behavior, but at compile time compiles a CFA that does a `" ' FOO ! "` or something usefull. QUAN sort of creates a constant called FOO, but also creates a second CFA that does the assignment operation.

In the case of OOP I need to define some clever words that can execute multiple

colon definitions attached to a particular object.

Anyway hope you can help

Re: What's a CFA in Quartus, QUANS etc....

Posted by [William Volk](#) on August 10, 1998 at 17:08:35:

In Reply to: *What's a CFA in Quartus, QUANS etc....* posted by William Volk on August 10, 1998 at 16:38:55:

I did take a look at the ANSI core-ext wordset. And I see definitions for;

```
: VALUE ( x "name" --) create , does> @ ;
```

```
: TO ( x "name" --)
```

```
' >body state @
```

```
if postpone literal postpone !
```

```
else !
```

```
then ; immediate
```

Which I recognize as the QUAN wordset in ANSI Forth. I assume the following

```
' >body ... takes the address of the word and converts it to the "body" of the word, if we are in runtime the else does a store into that address.
```

So it's NOT a multiple CFA word, but a constant and a word "TO" whose behavior stores into that constant.

Interesting.

Bill

Re: What's a CFA in Quartus, QUANS etc....

Posted by [Neal Bridges](#) on August 10, 1998 at 20:45:01:

In Reply to: *Re: What's a CFA in Quartus, QUANS etc....* posted by William Volk on August 10, 1998 at 17:08:35:

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```

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```

```
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: word, if we are in runtime the else does a store into that address.

: So it's NOT a multiple CFA word, but a constant and a word "TO" whose behavior
: stores into that constant.

: Interesting.

That's the ANSI semantics of VALUE and TO. If you're looking for
object-orientation in Forth, there are several implementations available from
the Taygeta site, among others; the smallest I've seen is 14 lines long.

Neal

Re: What's a CFA in Quartus, QUANS etc....

Posted by [Bill Volk](#) on August 11, 1998 at 17:17:35:

In Reply to: *Re: What's a CFA in Quartus, QUANS etc....* posted by Neal Bridges
on August 10, 1998 at 20:45:01:

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behavior
: : stores into that constant.

: : Interesting.

And you replied....

: That's the ANSI semantics of VALUE and TO. If you're looking for
: object-orientation in Forth, there are several implementations available from
: the Taygeta site, among others; the smallest I've seen is 14 lines long.

: Neal

Can you point me to the 14 line example (filename?) in question?

I guess (heck I KNOW) I'm out of date ... I guess multiple CFA words are NOT
possible with a native coded version, but by using compile time behavior ...
you can get the desired effect????

How does one impliment control structures with a native coded Forth?

For example I once wrote a system for local variables that used a common area
of memory for the locals, but pushed their values on the return stack, the
count of locals used, AND the CFA of a colon definition onto the return stack,
so any exit out of the word that used the locals ... would restore their prior
value by invoking an execution of the "clean up" definition.

What would I " >R " in QUARTUS to get a "execute this on exit of my word" thing
to happen?

Bill

Re: What's a CFA in Quartus, QUANS etc....

Posted by [Neal Bridges](#) on August 11, 1998 at 20:21:25:

In Reply to: *Re: What's a CFA in Quartus, QUANS etc....* posted by Bill Volk on August 11, 1998 at 17:17:35:

: : That's the ANSI semantics of VALUE and TO. If you're looking for
: : object-orientation in Forth, there are several implementations available
from
: : the Taygeta site, among others; the smallest I've seen is 14 lines long.
: : Neal

: Can you point me to the 14 line example (filename?) in question?

: I guess (heck I KNOW) I'm out of date ... I guess multiple CFA words are NOT
: possible with a native coded version, but by using compile time behavior ...
: you can get the desired effect????

I'm not sure what a multiple CFA word would be used for, but there's no reason
it can't be done in high-level Forth, or at a native-code level, for that
matter.

: How does one impliment control structures with a native coded Forth?

Control structures such as IF ELSE THEN?

: For example I once wrote a system for local variables that used a common area
: of memory for the locals, but pushed their values on the return stack, the
: count of locals used, AND the CFA of a colon definition onto the return stack,
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thing
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I'd need to provide a XT>ABS word to facilitate this, but it seems ugly to me...
from a structured programming (not to mention portability) standpoint, it'd be
better to provide a controlled exit from your word that transfers control
specifically to another word. The mechanism you describe looks a lot like a
GOTO to me, something from which Forth is thankfully free.

Neal

Re: What's a CFA in Quartus, QUANS etc....

Posted by [Bill Volk](#) on August 11, 1998 at 23:17:30:

In Reply to: *Re: What's a CFA in Quartus, QUANS etc....* posted by Neal Bridges on August 11, 1998 at 20:21:25:

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: GOTO to me, something from which Forth is thankfully free.
```

It's more of a "on-exit" thing. I used this for a "locals" system in '84, it allowed for the use of registers as temps ... pretty well recieved at the Asilomar conference that year.

I really would like to look at some of the OOP examples ... do you have a specific filename?

Bill

Re: What's a CFA in Quartus, QUANS etc....

Posted by [Neal Bridges](#) on August 12, 1998 at 00:03:40:

In Reply to: *Re: What's a CFA in Quartus, QUANS etc....* posted by Bill Volk on August 11, 1998 at 23:17:30:

```
: : I'd need to provide a XT>ABS word to facilitate this,
```

```
and here it is.
```

```
\ xt>abs
```

```
needs asm68k
```

```
code codespace ( -- CS. )
```

```
  tos sp -) move
```

```
  cs tos .l move
```

```
  tos sp -) .w move
```

```
  tos swap
```

```
end-code
```

```
: xt>abs ( xt -- addr. )
```

```
s>d codespace d+ ;
```

Neal

Re: What's a CFA in Quartus, QUANS etc....

Posted by [Neal Bridges](#) on August 11, 1998 at 23:40:53:

In Reply to: *Re: What's a CFA in Quartus, QUANS etc....* posted by Bill Volk on August 11, 1998 at 23:17:30:

: It's more of a "on-exit" thing. I used this for a "locals" system in '84, it
: allowed for the use of registers as temps ... pretty well recieved at the
: Asilomar conference that year.

: I really would like to look at some of the OOP examples ... do you have a
: specific filename?

I included this in my last post, but made the mistake of including it in angle
brackets.

<http://www.complang.tuwien.ac.at/anton/lvas/12-zeilen-oof>

Have a look at that... if you want to see a much more complex OOP
implementation, shout-- I can point you at one.

Neal

Re: What's a CFA in Quartus, QUANS etc....

Posted by [Bill Volk](#) on August 12, 1998 at 23:14:50:

In Reply to: *Re: What's a CFA in Quartus, QUANS etc....* posted by Neal Bridges on August 11, 1998 at 23:40:53:

: <http://www.complang.tuwien.ac.at/anton/lvas/12-zeilen-oof>

: Have a look at that... if you want to see a much more complex OOP
: implementation, shout-- I can point you at one.

It will take me some time to figure out what that code does ... need to replace
?DO as well...

Bill

ANN: Quartus 0.4.0 Now Available

Posted by [Neal Bridges](#) on August 09, 1998 at 20:21:23:

Download the new Quartus beta, 0.4.0B, from the file area. New features include:

- SOURCE-ID added
- MARKER added
- 2ROT added to double.txt
- DMAX, DMIN internalized, removed from double.txt
- EVALUATE modified to allow INCLUDE and INCLUDED
- added [end] and [defined] to toolkit.txt
- ECHO (newflag -- oldflag) added; controls display of included source
- last word display moved from interpreter to error handler

The kernel is now nearly complete. Thank you all for your feedback. The next beta will have stand-alone compilation abilities; write me if you'd like to be a tester.

Neal

- [File Area](#)

Quartus 0.4.0 problems

Posted by [Jim Deakin](#) on August 10, 1998 at 07:24:48:

In Reply to: *ANN: Quartus 0.4.0 Now Available* posted by Neal Bridges on August 09, 1998 at 20:21:23:

I'm trying the 0.4.0 version, on a PPPro, and it doesn't seem to like hacks at all. I'm having to use the paperclip reset a lot if there are any active at all. I checked the card was seated properly, and disabled all hacks except one, for testing (tealecho in this case) renamed startup.quartus, so nothing would interfere, and started Quartus, tapped 'application' to go back to the launcher, and repeated. Usually it dies on the second attempt to go back to the launcher. It seems ok with your own shifthack, There are several other hacks that seem to have problems, eg switchhack, EcoHack etc.

I was going to give a list of all hacks that had noticeable problems, but I've just checked one that may be helpful. I enabled 'Daylight Saving Hack' and started and left Quartus several times with no problem, Then I went to Hackmaster and disabled DSH. I got a message 'MemoryMgr,c, Line 4378, chunk under-locked'

I hope that's helpful

Re: Quartus 0.4.0 problems

Posted by [Neal Bridges](#) on August 10, 1998 at 08:11:54:

In Reply to: *Quartus 0.4.0 problems* posted by Jim Deakin on August 10, 1998 at 07:24:48:

: I'm trying the 0.4.0 version, on a PPro, and it doesn't seem to like hacks at

: all. I'm having to use the paperclip reset a lot if there are any active at

Jim, nothing has been added or removed in Quartus 0.4.0 that would affect its behaviour with hacks. It's more likely you're experiencing problems with memory fragmentation. Quartus initially creates a relatively large workspace (40K) and this can cause various heaps to be reorganized; when those heaps contain hacks, the problems you describe can result. It's only been reported to me once before.

I recommend removing Quartus from memory, disabling all hacks, running a memory de-fragmenter, reloading Quartus, and then re-enabling your hacks.

Neal

Re: Quartus 0.4.0 problems

Posted by [Jim Deakin](#) on August 10, 1998 at 09:31:41:

In Reply to: *Re: Quartus 0.4.0 problems* posted by Neal Bridges on August 10, 1998 at 08:11:54:

Done that now, and it seems ok again.

I never expected that sort of problem though. I was prepared for the <"Quartus initializing workspace..." never goes away, or returns a fatal error> one you warned us about, but this happened after the first initialization, and it could load from memos and everything. I had plenty of space available too, and I thought syncing allowed it to shuffle memory round until it had the space it needed.

Sorry for throwing up a scare, colour me embarrassed.

Is there anything a program can do to check if it's in that sort of position?

Jim

Re: Quartus 0.4.0 problems

Posted by [Neal Bridges](#) on August 10, 1998 at 09:55:28:

In Reply to: *Re: Quartus 0.4.0 problems* posted by Jim Deakin on August 10, 1998 at 09:31:41:

: Done that now, and it seems ok again.

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: load from memos and everything. I had plenty of space available too, and I
: thought syncing allowed it to shuffle memory round until it had the space it
: needed.

: Sorry for throwing up a scare, colour me embarrassed.

: Is there anything a program can do to check if it's in that sort of position?

The system can shuffle memory around until it has the space it needs. Under some circumstances, it seems the system can also move locked chunks, and thus move installed HackMaster hacks around, and that leads to crashes. The procedure I outlined in a previous post seems to remedy all such situations.

In fairness to USR/3COM, I think it's important to remember that the whole system of HackMaster hacks, as necessary and useful as they are, were bolted on after the fact.

Neal

Re: Quartus 0.4.0 problems

Posted by [Erwin Schomburg](#) on August 12, 1998 at 13:00:47:

In Reply to: *Re: Quartus 0.4.0 problems* posted by Neal Bridges on August 10, 1998 at 09:55:28:

These Situations are gone with PIII. For those sticking to OS2 or older, if you fear a lockup while installing to a crowded (fragmented) system, try to Hotsync while the System is in warm reset state (reset pushed while keeping scroll up button pressed). No patches nor Hacks will be linked in the OS in this state, thus making it safe for the OS to shuffle with memory blocks normally locked by said patches and Hacks. Likewise if Hotsync memory shuffling does no longer suffice and you feel forced to run a defragging tool, do this **only** in warm reset state. Don't forget to do a proper reset after such a Hotsync (a defragging run will do that for you at the end of its proceedings automatically).

/Erwin

Am I doing this right?

Posted by [Jim Deakin](#) on August 07, 1998 at 05:15:25:

I'm trying out some of the example code in dpANS94, appendix A, and having problems. So I tried to make a word to help me debug. I wrote a word to pause and wait for a keystroke, no problem. Then I wrote

```
: S .s postpone ." pause ;
```

which I thought should let me write

```
: newword ...  
S firststop"  
... ;
```

and get a stack picture and message when newword runs,
but I get a compilation error of 'unknown word firststop" '

It's probably obvious, but what's the right way to do this?

Thanks for any help.

Re: Am I doing this right?

Posted by [Neal Bridges](#) on August 07, 1998 at 15:57:26:

In Reply to: *Am I doing this right?* posted by Jim Deakin on August 07, 1998 at 05:15:25:

```
: I'm trying out some of the example code in dpANS94, appendix A, and having  
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```
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```

: which I thought should let me write

```
: : newword ...  
: S firststop"  
: ... ;
```

```
: and get a stack picture and message when newword runs,  
: but I get a compilation error of 'unknown word firststop" '
```

: It's probably obvious, but what's the right way to do this?

: Thanks for any help.

You want your S word to compile new code, so it must be made immediate so that it will execute in compilation state. Also, you must postpone the actions of both .S and PAUSE along with ." so that all the actions will occur at runtime, and not at compile time.

Try

```
: S postpone .s postpone ." postpone pause ; immediate
```

Neal

Thanks and Application Interfaces?

Posted by [William Volk](#) on August 05, 1998 at 18:47:37:

I haven't programmed Forth since '85 ... when I wrote some games for the Macintosh. Thanks for doing the work on Quartus. I'd like to do some simple applications for the Pilot .. like a cyclist training log etc... and perhaps a game or two ...

When or where should I look for documentation on the Pilot's OS calls?

Re: Thanks and Application Interfaces?

Posted by [Neal Bridges](#) on August 05, 1998 at 22:31:02:

In Reply to: *Thanks and Application Interfaces?* posted by William Volk on August 05, 1998 at 18:47:37:

```
: I haven't programmed Forth since '85 ... when I wrote some games for the  
: Macintosh. Thanks for doing the work on Quartus. I'd like to do some simple  
: applications for the Pilot .. like a cyclist training log etc... and perhaps a  
: game or two ...
```

```
: When or where should I look for documentation on the Pilot's OS calls?
```

Check out the Links on the Quartus page... there's a pointer to 3COM's official documentation in PDF form. Also look at the examples in the File Area.

Neal

Re: Thanks and Application Interfaces?

Posted by [Arto Nummelin](#) on August 12, 1998 at 07:51:57:

In Reply to: *Re: Thanks and Application Interfaces?* posted by Neal Bridges on August 05, 1998 at 22:31:02:

I can't find the description of the Hwr... systrops in 3COM's documentation. Are those available anywhere. I'm interested in accessing the HwrDockSignals trap, and I can guess how it works from the prototype:

```
Err HwrDockSignals(WordPtr inputsP, Word outputSet, Word outputClr)
but it would be nice to see a description of it.
```

/Arto

```
: : I haven't programmed Forth since '85 ... when I wrote some games for the
: : Macintosh. Thanks for doing the work on Quartus. I'd like to do some
simple
: : applications for the Pilot .. like a cyclist training log etc... and perhaps
a
: : game or two ...
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: : When or where should I look for documentation on the Pilot's OS calls?
```

```
: Check out the Links on the Quartus page... there's a pointer to 3COM's
official
```

```
: documentation in PDF form. Also look at the examples in the File Area.
```

```
: Neal
```

Re: Thanks and Application Interfaces?

Posted by [Neal Bridges](#) on August 12, 1998 at 09:28:42:

In Reply to: *Re: Thanks and Application Interfaces?* posted by Arto Nummelin on August 12, 1998 at 07:51:57:

```
: I can't find the description of the Hwr... systrops in 3COM's documentation.
: Are those available anywhere. I'm interested in accessing the HwrDockSignals
: trap, and I can guess how it works from the prototype:
```

```
: Err HwrDockSignals(WordPtr inputsP, Word outputSet, Word outputClr)
: but it would be nice to see a description of it.
```

```
: /Arto
```

Arto, most of the Hwr* systrops are undocumented. You might try an email to the developer's support people at 3Com, if your guesses prove unfounded.

Neal

Compiling word...

Posted by [Alberto Santini](#) on August 05, 1998 at 06:43:17:

Hello,

I tried

```
1 2 < if .s then ;
```

and it's an infinite loop.

In GFORTH this is an error: the word 'if' is permitted in compiling contest like

```
:foo
```

```
1 2 < if .s then ;
```

Thanks in advance,
Alberto Santini

Re: Compiling word...

Posted by [Neal Bridges](#) on August 05, 1998 at 09:33:46:

In Reply to: *Compiling word...* posted by Alberto Santini on August 05, 1998 at 06:43:17:

: Hello,

: I tried

```
: 1 2 < if .s then ;
```

: and it's an infinite loop.

: In GFORTH this is an error: the word 'if' is permitted in
: compiling contest like

```
: :foo
```

```
: 1 2 < if .s then ;
```

Alberto,

```
1 2 < if .s then ;
```

is an invalid code snippet; IF and THEN are only valid in compilation state, as is the semicolon. Regardless, however, I cannot see any way that this would produce an infinite loop.

Your second example

```
:foo
  1 2 < if .s then ;
```

is almost correct, but you need a space after the colon...

```
: foo
  1 2 < if .s then ;
```

Neal

Spawning Executable Images

Posted by [Erwin Schomburg](#) on August 03, 1998 at 03:38:10:

I am aware that you need to let beta test the kernel as such, but still the most waited for feature is the "real" compiler. I wouldn't mind if your scheme would require (pre-) registration (read: payment) to get this feature for testing. So please give a hint re availability and commercialisation of the REAL thing.

/Erwin

Re: Spawning Executable Images

Posted by [Neal Bridges](#) on August 04, 1998 at 12:02:00:

In Reply to: *Spawning Executable Images* posted by Erwin Schomburg on August 03, 1998 at 03:38:10:

```
: I am aware that you need to let beta test the kernel as such, but still the
most
: waited for feature is the "real" compiler. I wouldn't mind if your scheme
would
: require (pre-) registration (read: payment) to get this feature for testing.
: So please give a hint re availability and commercialisation of the REAL thing.
```

My concern with beta testing of the commercial compiler isn't monetary, but rather that eager testers may release products compiled with pre-releases of Quartus that then have beta-related problems, which would be something of a negative advertisement.

I'll keep you updated; I should have releasable something soon. Erwin, I know you're interested in beta testing; other serious testers, please drop me a note.

Neal

Re: Spawning Executable Images

Posted by [Erwin Schomburg](#) on August 07, 1998 at 03:23:24:

In Reply to: *Re: Spawning Executable Images* posted by Neal Bridges on August 04, 1998 at 12:02:00:

: I'll keep you updated; I should have releasable something soon. Erwin, I know
: you're interested in beta testing; other serious testers, please drop me a
note.

: Neal

I understand your concerns. When I was still programming for a living, I did
some work in Forth, I even modified a PC compiler project set up by a magazine
in the '80es into usefulness, then earned some bucks writing apps for it.

Now with your project I might or might not be lured back into some coding, but
as you know 8-) the least you can expect from me testing stuff is some pointing
to stress areas (e.g. unexpected and unwanted interactions with other apps "out
there", not necessarily to be seen as fault in *your* implementation).

/Erwin

Speculation...

Posted by [Jim Deakin](#) on July 28, 1998 at 09:11:57:

Now you've demonstrated memo writing, and doc file reading. Which do you
think will be first to arrive: File access words using docs, or block access,
with four blocks to a memo? :-)

Just wondering.

Jim Deakin (still struggling with ANS)

Re: Speculation...

Posted by [Neal Bridges](#) on July 28, 1998 at 09:27:20:

In Reply to: *Speculation...* posted by Jim Deakin on July 28, 1998 at 09:11:57:

: Now you've demonstrated memo writing, and doc file reading. Which do you
: think will be first to arrive: File access words using docs, or block access,
: with four blocks to a memo? :-)
: Just wondering.

: Jim Deakin (still struggling with ANS)

File access with DOC files would be ugly at best; the internal compression would mean file repositioning would be extremely slow, for instance.

I have no strong desire to build block support, but the MemoPad would be an odd place to put them. Georg Bauer wrote a BLOCK wordset for PilotFORTH; it could be ported. It uses an external database to store blocks.

A FILE wordset that uses the MemoPad will likely arrive first. Reading from memos is just as simple as writing to them.

Neal

Reading AportisDOC documents using Quartus

Posted by [Neal Bridges](#) on July 25, 1998 at 18:41:08:

I've put an updated version of *DataMgr* and a new file, *condthens* in the file area. Both of these support *doc*, which contains words for fast reading and decompression of DOC (AportisDOC) documents.

This can easily be expanded into an includedoc word that can read Forth source from AportisDOC documents-- if nobody tackles this I'll get around to it myself eventually.

Neal

- [File Area](#)

Re: Reading AportisDOC documents using Quartus

Posted by [Bret Latshaw](#) on July 26, 1998 at 21:08:40:

In Reply to: *Reading AportisDOC documents using Quartus* posted by Neal Bridges on July 25, 1998 at 18:41:08:

: I've put an updated version of *DataMgr* and a new file,
: *condthens* in the file area. Both of these support *doc*,
which
: contains words for fast reading and decompression of DOC (AportisDOC)
documents.

Trying to run the example gives an error. It doesn't recognize the word

OpenDB which I suspect should have been defined in *DataMgr*. The *DataMgr* in the filearea has a new date, but is exactly the same as the old version.

bret

Re: Reading AportisDOC documents using Quartus

Posted by [Neal Bridges](#) on July 27, 1998 at 00:19:14:

In Reply to: *Re: Reading AportisDOC documents using Quartus* posted by Bret Latshaw on July 26, 1998 at 21:08:40:

: Trying to run the example gives an error. It doesn't recognize the word
: OpenDB which I suspect should have been defined in
: *DataMgr*. The *DataMgr* in the filearea has a new date, but is
: exactly the same as the old version.

You probably have to do a Reload with your browser to snag the new version.

Neal

Re: Reading AportisDOC documents using Quartus

Posted by [Bret Latshaw](#) on July 27, 1998 at 01:05:27:

In Reply to: *Re: Reading AportisDOC documents using Quartus* posted by Neal Bridges on July 27, 1998 at 00:19:14:

: You probably have to do a Reload with your browser to snag the new version.

Tried that. Tried clearing my cache. Tried a different browser that had never been to your site, just in case. It's still the same file, dated July 3. Maybe I'm barking up the wrong tree and OpenDB is defined somewhere else?

Thanks,
Bret

Re: Reading AportisDOC documents using Quartus

Posted by [Neal Bridges](#) on July 27, 1998 at 08:50:13:

In Reply to: *Re: Reading AportisDOC documents using Quartus* posted by Bret Latshaw on July 27, 1998 at 01:05:27:

Here is the DataMgr.txt: I just went to the File Area, brought it up, and cut and pasted it into this posting...

```
\ DataMgr 98.7.24 3:00 am NAB
```

```
base @ hex
```

```
0001 constant dmModeReadOnly
```

```
0002 constant dmModeWrite
```

```
0003 constant dmModeReadWrite
```

```
0004 constant dmModeLeaveOpen
```

```
0008 constant dmModeExclusive
```

```
0010 constant dmModeShowSecret
```

```
base !
```

```
variable cardnum
```

```
: UseCard ( n -- ) cardnum ! ;
```

```
0 UseCard
```

```
: OpenDB ( mode zaddr len -- dbr. )
```

```
drop >abs
```

```
cardnum @ DmFindDatabase
```

```
2dup or 0= -38 and throw
```

```
cardnum @ DmOpenDatabase ;
```

```
: CloseDB ( dbr. -- )
```

```
dmCloseDatabase throw ;
```

Re: Reading AportisDOC documents using Quartus

Posted by [Neal Bridges](#) on July 27, 1998 at 08:48:40:

In Reply to: *Re: Reading AportisDOC documents using Quartus* posted by Bret Latshaw on July 27, 1998 at 01:05:27:

:

: : You probably have to do a Reload with your browser to snag the new version.

: Tried that. Tried clearing my cache. Tried a different browser that had never

: been to your site, just in case. It's still the same file, dated July 3. Maybe
: I'm barking up the wrong tree and OpenDB is defined somewhere
else?

You are barking up the right tree-- OpenDB is in fact defined in DataMgr.txt.
I've just had a look at it myself, though, and it's not the July 3rd file, but
in fact the new version. I can't account for why you're seeing the old version,
but I'd be curious as to whether anyone else is experiencing this.

Neal

Re: Reading AportisDOC documents using Quartus

Posted by [Bret Latshaw](#) on July 27, 1998 at 22:32:48:

In Reply to: *Re: Reading AportisDOC documents using Quartus* posted by Neal
Bridges on July 27, 1998 at 08:48:40:

I went back today and now I can see the new version, with both Explorer and
Lynx. No idea what happened, but it's fixed.

Thanks again,

Bret

Shift and Punc. indicators

Posted by [Michel Pelletier](#) on July 23, 1998 at 22:27:22:

Howdy,

Last month Allen Chen posted this simple example of event driven programming:

```
\ drawpen
```

```
event 2 cells + constant coords  
1 constant pendown  
3 constant penmove  
variable oldcoords 1 cells allot  
-1 oldcoords !
```

```
: drawpen  
WinEraseWindow  
begin
```

```
ekey dup pendown = swap penmove = or if
coords 2@ 2dup
oldcoords @ 0< if 2dup else oldcoords 2@ then
WinDrawLine oldcoords 2!
else
-1 oldcoords !
then
again ;
```

works quite well, thanks Allen, my question is, while the drawpen word is executing, the shift and punctuation indicators pop up when you request them from the grafiti area, is this functionality built into EKEY? From C programming I always though you had to explicitly put the indicators in there, but in Quartus they seem implicitly built in. Can this be overridden?

Thanks!

Michel

Re: Shift and Punc. indicators

Posted by [Neal Bridges](#) on July 23, 1998 at 23:57:20:

In Reply to: *Shift and Punc. indicators* posted by Michel Pelletier on July 23, 1998 at 22:27:22:

: Howdy,

: Last month Allen Chen posted this simple example of event driven programming:

```
: works quite well, thanks Allen, my question is, while the drawpen word is
: executing, the shift and punctuation indicators pop up when you request them
: from the grafiti area, is this functionality built into EKEY? From C
: programming I always though you had to explicitly put the indicators in
there,
: but in Quartus they seem implicitly built in. Can this be overridden?
```

The graffiti shift-state indicator is a part of the default Quartus form. There's another form (#1001) available without an indicator or a menu...

1001 ShowForm

is what you need to switch to it.

Neal

Documentation on the format of floating-point numbers

Posted by [Neal Bridges](#) on July 20, 1998 at 21:50:57:

Have a look at floats.html in the Quartus File Area.

Neal

- [File Area](#)
-

ANN: Asm68k 1.21 Now Available

Posted by [Neal Bridges](#) on July 20, 1998 at 21:20:09:

Fixed a bug in MULU. Check it out in the Quartus File Area.

Neal

- [File Area](#)
-

Printing Comments

Posted by [Lou Solomon](#) on July 20, 1998 at 18:34:48:

NB:

Just received my copy of Forth Programmer's Handbook from Forth, Inc. and in going through the examples, I saw the word `.(` which prints out the comments as they are being executed. My question is: What is the best way to embed carriage returns in these comments, so as they print, they appear on different lines?

Lou

PS: I've learned not to ask "Can you?" when dealing with Forth. It really does seem like every thing is definable/redefinable! It's the wierdest thing reading about forth... there always seems to be some comment like, if this word isn't in your implementation, you can define it as follows....

Not like your father's olds....

Re: Printing Comments

Posted by [Neal Bridges](#) on July 20, 1998 at 20:42:02:

In Reply to: *Printing Comments* posted by Lou Solomon on July 20, 1998 at 18:34:48:

: NB:

: Just received my copy of Forth Programmer's Handbook from Forth, Inc. and in
: going through the examples, I saw the word `.(` which prints out the
: comments as they are being executed. My question is: What is the best way
: to embed carriage returns in these comments, so as they print, they appear
: on different lines?

: Lou

: PS: I've learned not to ask "Can you?" when dealing with Forth. It really
: does seem like every thing is definable/redefinable! It's the wierdest thing
: reading about forth... there always seems to be some comment like, if this
word

: isn't in your implementation, you can define it as follows....

: Not like your father's olds....

That's for sure. Accepting the freedom Forth provides is the first hurdle for
programmers coming from, for instance, C.

As to your carriage returns,

`.(This is a comment.) cr`

works for me. If you really want, you could redefine `.(` as

`: .([char]) parse type cr ; immediate`

Neal

Freeing a variable?

Posted by [Chad Montplaisir](#) on July 13, 1998 at 22:55:51:

Forget doesn't seem to be implemented. Is there an
implimentation?

Thanks,
Chad

Re: Freeing a variable?

Posted by [Neal Bridges](#) on July 13, 1998 at 23:36:27:

In Reply to: *Freeing a variable?* posted by Chad Montplaisir on July 13, 1998 at 22:55:51:

: Forget doesn't seem to be implemented. Is there an
: implimentation?

Hi Chad. FORGET isn't provided, but MARKER is in the next beta, just finished coding it tonight. Coming soon.

Neal

MathLib anybody ?

Posted by Marcio on July 13, 1998 at 21:20:17:

Has anybody interfaced with MathLib from Quartus ?
I wanted to use 8-byte IEEE floats (doubles) and
I was wondering if MathLib is the way to go.
If anybody has had any luck using MathLib, I'd
be interested in the results & interfacing code.

thanks !

marcio

Re: MathLib anybody ?

Posted by [Neal Bridges](#) on July 14, 1998 at 01:17:26:

In Reply to: *MathLib anybody ?* posted by Marcio on July 13, 1998 at 21:20:17:

:
: Has anybody interfaced with MathLib from Quartus ?
: I wanted to use 8-byte IEEE floats (doubles) and
: I was wondering if MathLib is the way to go.
: If anybody has had any luck using MathLib, I'd
: be interested in the results & interfacing code.

Marcio, I'm coding up an example of using MathLib. Give me a couple of days. I'll announce it here and put it in the File Area when it's done.

Neal

Example of file access.

Posted by [Chad Montplaisir](#) on July 13, 1998 at 14:37:47:

I'm working on an DOC style application and so I would like to figure out how to access the memo files and well as fully access PDB files (read/write/create/delete). Anyone know of a place with this info in a usable format?

Thank you,
Chad

Re: Example of file access.

Posted by [Neal Bridges](#) on July 13, 1998 at 23:35:23:

In Reply to: *Example of file access.* posted by Chad Montplaisir on July 13, 1998 at 14:37:47:

: I'm working on an DOC style application and so I would like to figure
: out how to access the memo files and well as fully access PDB files
: (read/write/create/delete). Anyone know of a place with this info
: in a usable format?

Check out *memo.txt* in the Quartus File Area. You'll need a few other files, they're there too... *toolkit*, *core-ext*, *ids*, *zstrings* and *DataMgr*.

Let me know what you think!

Neal

Re: Example of file access.

Posted by [Chad Montplaisir](#) on July 16, 1998 at 14:49:47:

In Reply to: *Re: Example of file access.* posted by Neal Bridges on July 13, 1998 at 23:35:23:

: Check out *memo.txt* in the Quartus File Area. You'll need a few other
: files, they're there too... *toolkit*, *core-ext*, *ids*,
: *zstrings* and *DataMgr*.

Thank you for the code. I don't understand it fully, yet. If you could show me code that accesses PDB file for read, I'd really appreciate it.

Thank you for your help!

Chad

Re: Example of file access.

Posted by [Neal Bridges](#) on July 16, 1998 at 22:57:55:

In Reply to: *Re: Example of file access.* posted by Chad Montplaisir on July 16, 1998 at 14:49:47:

:
: : Check out *memo.txt* in the Quartus File Area. You'll need a few
other
: : files, they're there too... *toolkit*, *core-ext*,
ids,
: : *zstrings* and *DataMgr*.

: Thank you for the code. I don't understand it fully, yet. If you could
: show me code that accesses PDB file for read, I'd really appreciate it.

I'll throw something together for ya.

Neal

Re: Example of file access.

Posted by [Chad Montplaisir](#) on July 17, 1998 at 10:36:53:

In Reply to: *Re: Example of file access.* posted by Neal Bridges on July 16, 1998 at 22:57:55:

: I'll throw something together for ya.

I'll make an offer that if you can explain things to be, I'll write documentation.. :)

Thanks,
Chad

Memo.txt explained

Posted by [Neal Bridges](#) on July 17, 1998 at 15:44:50:

In Reply to: *Re: Example of file access.* posted by Chad Montplaisir on July 17, 1998 at 10:36:53:

Have a look in the Quartus file area; I wrote a simple doc explaining its operation, and I'd appreciate your feedback.

Neal

Fatal Error...

Posted by [Michel Pelletier](#) on July 10, 1998 at 23:28:54:

Howdy,

Well, been using Quartus for weeks when my PalmIII choked on an unrelated issue and had to hard reset. Redownloaded it yesterday, tried it for the first time today, and it:

Fatal Error

MemoryMgrNew.c

Line:30009, Nill ID

every time. I'm only using 574K out of 2048K on a PalmIII (which from what I understand doesn't suffer from fragmentation) so the tips on your front page I don't think apply...

Ever seen it?

Michel

Re: Fatal Error... (nevermind)

Posted by [Michel Pelletier](#) on July 10, 1998 at 23:53:41:

In Reply to: *Fatal Error...* posted by Michel Pelletier on July 10, 1998 at 23:28:54:

Uhm... hard reset, reinstalled everything, identical configuration as before... now it works!

?

: Howdy,

: Well, been using Quartus for weeks when my PalmIII choked on an unrelated
issue
: and had to hard reset. Redownloaded it yesterday, tried it for the first time
: today, and it:
:
: Fatal Error
:
: MemoryMgrNew.c
: Line:30009, Nill ID
:
: every time. I'm only using 574K out of 2048K on a PalmIII (which from what I
: understand doesn't suffer from fragmentation) so the tips on your front page I
: don't think apply...
:
: Ever seen it?
:
: Michel

Behaviour of EKEY

Posted by [Matthias Schneider](#) on July 10, 1998 at 07:26:42:

Hallo Neal,

I think the command EKEY is beautiful! It simplifies the event handling a lot! The only problem I have with it is the delay if no event occurs. EKEY "waits" for about half a second before returning 0. Is it possible to shorten this time? I ask because I want to do drawing work while "waiting" for the user input.

Matthias

Re: Behaviour of EKEY

Posted by [Neal Bridges](#) on July 10, 1998 at 08:40:54:

In Reply to: *Behaviour of EKEY* posted by Matthias Schneider on July 10, 1998 at 07:26:42:

: Hallo Neal,

: I think the command EKEY is beautiful! It simplifies the event handling a
: lot! The only problem I have with it is the delay if no event occurs. EKEY
: "waits" for about half a second before returning 0. Is it possible to shorten
: this time? I ask because I want to do drawing work while "waiting" for the
user
: input.

Matthias, use EKEY? to check to see if an event is pending without incurring any delay. When an event becomes available, use EKEY to retrieve it.

What are you writing?

Neal

Re: Behaviour of EKEY

Posted by [Matthias Schneider](#) on July 14, 1998 at 02:49:37:

In Reply to: *Re: Behaviour of EKEY* posted by Neal Bridges on July 10, 1998 at 08:40:54:

: What are you writing?

: Neal

I'm writing a little game called "Lines". I've seen it years ago on a PC and it was one of the very few games I played for a relatively long time. I mail it to you - you will hate the programming style I used (I have none - sorry - but Quartus understood me!!), but you will love the game (I'm quite sure).

Matthias

accessing index in DO LOOP

Posted by [Russell Speed](#) on July 08, 1998 at 17:20:54:

I have been using pForth as a means of getting both a tutorial and testing ideas before risking crashing my Pilot (I'm new to this).

In the pForth tutorial it mentions that I will have the value of the index in a DO ... LOOP, so 8 1 DO I . CR LOOP prints a value from 1 through 7 on successive lines under pForth but not under Quartus on my Palm III.

I don't have a copy of the standard to verify if this is a feature of pForth or part of the standard. Can you tell me how I would access the index and where I can get the latest copy of the Standard that you are developing from?

Thanks - really great product, I'm a die hard 'C' developer and have been for over 10 years and in a few days I've really come to like Forth especially as a means of writing code for the Pilot... bravo!

Russell

Re: accessing index in DO LOOP

Posted by [Neal Bridges](#) on July 09, 1998 at 00:51:26:

In Reply to: *accessing index in DO LOOP* posted by Russell Speed on July 08, 1998 at 17:20:54:

: In the pForth tutorial it mentions that I will have the value of the index
: in a DO ... LOOP, so 8 1 DO I . CR LOOP prints a value from 1 through 7 on
: successive lines under pForth but not under Quartus on my Palm III.

Russel, do this:

```
: demo 8 i do i . cr loop ;  
demo
```

You have to put the do...loop in a definition to use it. pForth may support their use in interpretation state, but Quartus does not; it would bloat the kernel and is unnecessary, as the syntax overhead for creating a definition is minor.

: I don't have a copy of the standard to verify if this is a feature of pForth
: or part of the standard. Can you tell me how I would access the index and
: where I can get the latest copy of the Standard that you are developing from?

Check my "Related Links" page.

: Thanks - really great product, I'm a die hard 'C' developer and have been for
: over 10 years and in a few days I've really come to like Forth especially as
: a means of writing code for the Pilot... bravo!

Thank you!

Neal

Re: accessing index in DO LOOP

Posted by Marcio on July 10, 1998 at 13:45:50:

In Reply to: *Re: accessing index in DO LOOP* posted by Neal Bridges on July 09, 1998 at 00:51:26:

Can one use "I" to get a copy of the return stack even without using loops, or this is not legal ?

Seems to work in PilotFORTH, but I'm not sure this is "legal" in standrad implementations. It is certainly much more convenient than having to do r> dup >r

There may be a word for that other than "I", I will have to

check the book I have.

marcio

: : In the pForth tutorial it mentions that I will have the value of the index
: : in a DO ... LOOP, so 8 1 DO I . CR LOOP prints a value from 1 through 7 on
: : successive lines under pForth but not under Quartus on my Palm III.

: Russel, do this:

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: demo 8 i do i . cr loop ;  
: demo
```

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: their use in interpretation state, but Quartus does not; it would bloat the
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: : where I can get the latest copy of the Standard that you are developing
from?

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: : Thanks - really great product, I'm a die hard 'C' developer and have been
for

: : over 10 years and in a few days I've really come to like Forth especially as
: : a means of writing code for the Pilot... bravo!

: Thank you!

: Neal

Re: accessing index in DO LOOP

Posted by [Mike T. Miller](#) on July 09, 1998 at 12:06:50:

In Reply to: *Re: accessing index in DO LOOP* posted by Neal Bridges on July 09, 1998 at 00:51:26:

: : In the pForth tutorial it mentions that I will have the value of the index
: : in a DO ... LOOP, so 8 1 DO I . CR LOOP prints a value from 1 through 7 on
: : successive lines under pForth but not under Quartus on my Palm III.

: Russel, do this:

:

```
: demo 8 i do i . cr loop ;
```

: demo

Ooops! I think you meant:

```
: demo 8 1 do i . cr loop ;  
demo
```

The first "i" should be a one.

[snip]

mike

Re: accessing index in DO LOOP

Posted by [Neal Bridges](#) on July 11, 1998 at 08:01:15:

In Reply to: *Re: accessing index in DO LOOP* posted by Mike T. Miller on July 09, 1998 at 12:06:50:

: Ooops! I think you meant:

:

```
: demo 8 1 do i . cr loop ;
```

```
: demo
```

: The first "i" should be a one.

Quite right.

Neal

Forth Instruction

Posted by [Lou Solomon](#) on July 07, 1998 at 16:07:05:

Can anyone recommend a good book, tutorial, whatever regarding ANSI forth?

For example: I'm looking at the ANSI documentation, specifically CATCH & THROW. Is there any book out there with examples? Lets face it, sometimes the stack diagrams don't really do justice to learning forth...

Lou

Re: Forth Instruction

Posted by [Zoltan Leskowsky](#) on July 30, 1998 at 15:06:56:

In Reply to: *Forth Instruction* posted by Lou Solomon on July 07, 1998 at 16:07:05:

: Can anyone recommend a good book, tutorial, whatever regarding ANSI forth?

: For example: I'm looking at the ANSI documentation, specifically CATCH & THROW. Is there any book out there with examples? Lets face it, sometimes the stack diagrams don't really do justice to learning forth...

: Lou

Jack Woehr has a book on ANS Forth that's not too bad.

Zoltan

Re: Forth Instruction

Posted by [Neal Bridges](#) on July 07, 1998 at 16:58:43:

In Reply to: *Forth Instruction* posted by Lou Solomon on July 07, 1998 at 16:07:05:

: Can anyone recommend a good book, tutorial, whatever regarding ANSI forth?

: For example: I'm looking at the ANSI documentation, specifically CATCH & THROW. Is there any book out there with examples? Lets face it, sometimes the stack diagrams don't really do justice to learning forth...

: Lou

One thing not to overlook is the Appendix sections of the Standard, they can be helpful. Also on www.dejanews.com, search the `comp.lang.forth` forum.

Neal

Re: Forth Instruction

Posted by [Michel Pelletier](#) on July 08, 1998 at 00:59:02:

In Reply to: *Re: Forth Instruction* posted by Neal Bridges on July 07, 1998 at 16:58:43:

: : Can anyone recommend a good book, tutorial, whatever regarding ANSI forth?

: : For example: I'm looking at the ANSI documentation, specifically CATCH &

: THROW. Is there any book out there with examples? Lets face it, sometimes the

: stack diagrams don't really do justice to learning forth...

: : Lou

: One thing not to overlook is the Appendix sections of the Standard, they can be

: helpful. Also on www.dejanews.com, search the `comp.lang.forth` forum.

: Neal

I learned FORTH from the excellent book MASTERING FORTH a couple years before I could even get my hands on a FORTH, or a computer for that matter, but I'm in Maine now and my book is in Illinois, for the life of me I can't remember who wrote it, but I believe the author also wrote LEARNING FORTH (I could be wrong). OK all you FORTHheads out there, someone knows who wrote these.

The book is pre ANSI spec. I don't remember seeing anything about CATCH or THROW.

While I'm getting in my 2%; nice job Neal. I like. Just a couple questions:

Only Pilot programming I've done is with the GCC tools, all dinky UI stuff. My FORTH experiences are definately non-UI programs. I noticed you've got words for the common API funcs including the `Frm*` stuff. So how do we compile in UI resources? I'm guessing at the moment it can't be done cuz Quartus is always 'interpreting' in the background of your program, but when quartus can compile standalone apps there will need to be some UI resource stuff in there somewhere.

Michel

Re: Forth Instruction

Posted by [Neal Bridges](#) on July 08, 1998 at 01:16:05:

In Reply to: *Re: Forth Instruction* posted by Michel Pelletier on July 08, 1998 at 00:59:02:

: Only Pilot programming I've done is with the GCC tools, all dinky UI stuff. My

: FORTH experiences are definately non-UI programs. I noticed you've got words
: for the common API funcs including the `Frm*` stuff. So how do we compile in UI
: resources? I'm guessing at the moment it can't be done cuz Quartus is always
: 'interpreting' in the background of your program, but when quartus can compile
: standalone apps there will need to be some UI resource stuff in there
somewhere.

Actually it works now. You can compile a resource database using `PilRC` and `Pila`, load it into the Pilot, and use the forms in it directly from a Quartus program. I'm putting together a tutorial for this.

Neal

Dumb Forth Questions

Posted by [Michael Heinz](#) on July 07, 1998 at 13:04:51:

Neal,

A couple newbie questions:

1. I haven't used Forth since the early 1980's, so perhaps this is in the spec, but why is `." string` now a No-op while `.(string)` now emits a string? A quick check of the ANSI spec does indicate that `."` is supposed to emit the string...
2. Any examples of using resources that aren't part of the Quartus run-time? (i.e., can you code resources into your dictionary?)

Thanks.

Re: Dumb Forth Questions

Posted by Michael Heinz on July 07, 1998 at 13:15:04:

In Reply to: *Dumb Forth Questions* posted by Michael Heinz on July 07, 1998 at 13:04:51:

I think I've answered question #1. `."` is only valid inside a definition, while `.(` is valid in immediate mode. Correct?

Re: Dumb Forth Questions

Posted by [Neal Bridges](#) on July 07, 1998 at 16:57:17:

In Reply to: *Re: Dumb Forth Questions* posted by Michael Heinz on July 07, 1998 at 13:15:04:

: I think I've answered question #1. `."` is only valid inside a definition,
: while `.(` is valid in immediate mode. Correct?

Correct. Get a copy of the ANS Standard, it covers the semantics of all the standard words.

As to resources, I'm putting together an example, it'll be here soon.

Neal

Calendar and double number words available in the File Area

Posted by [Neal Bridges](#) on July 05, 1998 at 23:37:02:

I've put new source in the File Area:

- `double.txt`: ANSI Standard DOUBLE words elective.
- `dblmath.txt` Several additional double-number arithmetic words. Needs *double*.
- `calendar.txt`: ANSI Standard implementation of Gregorian and ISO date manipulation words. Needs *dblmath*.
- `holidays.txt`: Words to calculate various holidays. Needs *calendar*.

Neal

Fatal Error when using Battery Meter

Posted by [Ted Maas](#) on July 05, 1998 at 22:35:37:

Neal,

I found a unique problem for you. I synced in "Battery Meter" by Dave MacLeod (dated 15/04/97). After I checked my battery level and then started Quartus I received a "fatal error".

I removed it, and then tried a number of other apps with no problem. Not really a concern of mine as I was just trying it out, but I thought you might want to know.

I can e-mail you the the .zip of it if us wish as its only about 4.2K.

I'll keep playing with Quartus -- so far thats the only problem I've found.

Ted

Re: Fatal Error when using Battery Meter

Posted by [Neal Bridges](#) on July 05, 1998 at 23:16:24:

In Reply to: *Fatal Error when using Battery Meter* posted by Ted Maas on July 05, 1998 at 22:35:37:

: I can e-mail you the the .zip of it if us wish as its
: only about 4.2K.

Please do. Ah, the joy of debugging other people's hacks.

Neal

Asm68K version 1.2 Now Available in the File Area

Posted by [Neal Bridges](#) on July 05, 1998 at 21:41:01:

Updated docs and version 1.2 of asm68k are available in the file area. I found and killed two bugs.

Neal

- [File Area](#)

Re: Asm68K version 1.2 Now Available in the File Area

Posted by Allen Chen on July 08, 1998 at 00:03:50:

In Reply to: *Asm68K version 1.2 Now Available in the File Area* posted by Neal Bridges on July 05, 1998 at 21:41:01:

Great stuff!

ANN: asm68k v1.0 now available!

Posted by [Neal Bridges](#) on July 04, 1998 at 22:18:36:

Check out *asm68k*, a symbolic Motorola 68000 assembler written in Forth and available in the File Area. It's a neat port of an assembler dated from 1987 available on the taygeta site. I'd like to attribute the original source it properly to its author; if anyone knows, please e-mail me.

Neal

Re: ANN: asm68k v1.0 now available!

Posted by [Stanley Okoye](#) on October 16, 1998 at 07:20:47:

In Reply to: *ANN: asm68k v1.0 now available!* posted by Neal Bridges on July 04, 1998 at 22:18:36:

: Check out *asm68k*, a symbolic Motorola 68000 assembler written in
I need a 68000 simulator and debugger for pc's urgently.

Re: ANN: asm68k v1.0 now available!

Posted by [Neal Bridges](#) on October 21, 1998 at 14:53:53:

In Reply to: *Re: ANN: asm68k v1.0 now available!* posted by Stanley Okoye on October 16, 1998 at 07:20:47:

: I need a 68000 simulator and debugger for pc's urgently.

I know such a thing is available, at least for DOS. Use Altavista to do a search.

Neal

Re: ANN: asm68k v1.0 now available!

Posted by [Neal Bridges](#) on July 05, 1998 at 20:00:04:

In Reply to: ANN: *asm68k v1.0 now available!* posted by Neal Bridges on July 04, 1998 at 22:18:36:

Please download asm68k version 1.1 from the file area; I've updated the docs and made a bug fix.

Thanks!

- [File Area](#)

ANN: Quartus 0.3.0b now available!

Posted by [Neal Bridges](#) on July 04, 1998 at 22:16:19:

Grab a copy of the new Quartus beta from the File Area!

Neal

- [File Area](#)

File Area now online

Posted by [Neal Bridges](#) on July 04, 1998 at 02:09:55:

I've put together a centralized file area where I'll be putting (among other things) the Quartus examples and demos I've been furiously working on.

Coming shortly:

- A 68000 assembler
- Demonstration code showing the use of PalmOS resources and events.

Neal

- [File Area Now Online](#)

FAQ: Quartus vs. PilotFORTH RAM usage

Posted by [Neal Bridges](#) on July 03, 1998 at 09:00:50:

> Neal,
>
> Why is PilotFORTH so small (10K) and Quartus so big (70K) ?

PilotFORTH is a stripped-down Forth kernel (7422 bytes), no more. Quartus has a far richer Forth kernel (15420 bytes in the current build), a symbol table of over 700 systrap calls with their arguments and returns (16214 bytes), the text of somewhere near 60 trap messages (1360 bytes) and of course the beautiful Quartus logo (302 bytes). So Quartus runs about 35K vs. 10K for PilotFORTH. Add to this the approx. 32K workspace + overhead that Quartus generates in storage RAM, and you have 70K for Quartus.

Neal

Only Hard Reset Possible After Quartus Programming Error

Posted by [Matthias Schneider](#) on July 03, 1998 at 02:59:46:

Hallo Neal,

i've got a strange problem:

If I am running a Forth program and this program has an mistake resulting in an never ending loop, I have to reset my Pilot.

Sometimes after pressing the Reset-Button, the Welcome-Screen is not deleted after a while as normal. (I'm not quite sure when this happens and when it doesn't. I've got the suspect that it could have a relation to the ".s"-command) The Welcome-Screen is displayed with no end and in the left upper corner a little blinking "cursor" is displayed. Neither a second "reset" nor a "warm reset" (reset plus Page-Up-Button) helps. So I have to hard reset my pilot and loose all my data.

Is this behaviour normal (I think not)? What can I do? Is ist possible that Quartus is writing anywhere outside the workspace into my pilot?

Matthias

PS: My Pilot is a Pilot5000 with OS 1.0.6 and 1MB RAM.

Re: Only Hard Reset Possible After Quartus Programming Error

Posted by [John Verne](#) on October 07, 1998 at 17:24:49:

In Reply to: *Only Hard Reset Possible After Quartus Programming Error* posted by Matthias Schneider on July 03, 1998 at 02:59:46:

: If I am running a Forth program and this program has an mistake resulting in an
: never ending loop, I have to reset my Pilot.
[...]

: The Welcome-Screen is displayed with no end and in the left upper corner a
: little blinking "cursor" is displayed. Neither a second "reset" nor a "warm
: reset" (reset plus Page-Up-Button) helps.
: So I have to hard reset my pilot and loose all my data.

I seem to recall that this little cursor is part of the builtin debug routines.

John

Re: Only Hard Reset Possible After Quartus Programming Error

Posted by [Neal Bridges](#) on July 03, 1998 at 08:46:06:

In Reply to: *Only Hard Reset Possible After Quartus Programming Error* posted by Matthias Schneider on July 03, 1998 at 02:59:46:

: Hallo Neal,

: i've got a strange problem:

: If I am running a Forth program and this program has an mistake resulting in an
: never ending loop, I have to reset my Pilot.

: Sometimes after pressing the Reset-Button, the Welcome-Screen is not deleted
: after a while as normal. (I'm not quite sure when this happens and when it
: doesn't. I've got the suspect that it could have a relation to the
: ".s"-command)

: The Welcome-Screen is displayed with no end and in the left upper corner a
: little blinking "cursor" is displayed. Neither a second "reset" nor a "warm
: reset" (reset plus Page-Up-Button) helps.
: So I have to hard reset my pilot and loose all my data.

: Is this behaviour normal (I think not)? What can I do? Is ist possible that
: Quartus is writing anywhere outside the workspace into my pilot?

: Matthias

: PS: My Pilot is a Pilot5000 with OS 1.0.6 and 1MB RAM.

Certainly doesn't sound like normal behaviour to me. The .s command can't be the culprit, it just displays the stack contents. Please post a code-snippet.

Try resetting your Pilot without running Quartus, and see if the same problem occurs. I suspect Quartus isn't the problem.

I haven't done a lot of testing under PalmOS 1. I'll install my test suite in the emulator and try it out.

Neal

Re: Only Hard Reset Possible After Quartus Programming Error

Posted by [Matthias Schneider](#) on July 06, 1998 at 07:27:41:

In Reply to: *Re: Only Hard Reset Possible After Quartus Programming Error* posted by Neal Bridges on July 03, 1998 at 08:46:06:

: : Hallo Neal,

: : i've got a strange problem:

: : If I am running a Forth program and this program has an mistake resulting in
: an

: : never ending loop, I have to reset my Pilot.

: : Sometimes after pressing the Reset-Button, the Welcome-Screen is not deleted
: : after a while as normal. (I'm not quite sure when this happens and when it
: : doesn't. I've got the suspect that it could have a relation to the
: ".s"-command)

: : The Welcome-Screen is displayed with no end and in the left upper corner a
: : little blinking "cursor" is displayed. Neither a second "reset" nor a "warm
: : reset" (reset plus Page-Up-Button) helps.

: : So I have to hard reset my pilot and loose all my data.

: : Is this behaviour normal (I think not)? What can I do? Is ist possible that
: : Quartus is writing anywhere outside the workspace into my pilot?

: : Matthias

: : PS: My Pilot is a Pilot5000 with OS 1.0.6 and 1MB RAM.

: Certainly doesn't sound like normal behaviour to me. The .s command can't be
: the culprit, it just displays the stack contents. Please post a code-snippet.

it's not code-dependent. Try

: test begin repeat ;

: Try resetting your Pilot without running Quartus, and see if the same problem
: occurs. I suspect Quartus isn't the problem.

I had the problem once or twice after resetting the pilot "without" quartus. But
with the use of Quartus it happens much more often. Nevertheless, your suspect
could be true.

: I haven't done a lot of testing under PalmOS 1. I'll install my test suite in
: the emulator and try it out.

Thanks!

: Neal

Matthias

Re: Only Hard Reset Possible After Quartus Programming Error

Posted by [Neal Bridges](#) on July 07, 1998 at 17:03:52:

In Reply to: *Re: Only Hard Reset Possible After Quartus Programming Error* posted
by Matthias Schneider on July 06, 1998 at 07:27:41:

: it's not code-depending. Try
: : test begin repeat ;

Hmm, that code should fail. REPEAT is only valid in a BEGIN ... WHILE ...
REPEAT context.

Does the same thing happen with

: test begin again ;

? Let me know.

Re: Only Hard Reset Possible After Quartus Programming Error

Posted by [Matthias Schneider](#) on July 08, 1998 at 03:09:37:

In Reply to: *Re: Only Hard Reset Possible After Quartus Programming Error* posted
by Neal Bridges on July 07, 1998 at 17:03:52:

: : it's not code-depending. Try
: : : test begin repeat ;

: Hmm, that code should fail. REPEAT is only valid in a BEGIN ... WHILE ...

: REPEAT context.

: Does the same thing happen with

: : test begin again ;

: ? Let me know.

Yes, it does. Sorry for confusing you with my wrong program line posted.

I made the experience that it might be in conjunction with the time I press the reset button. If I press it only one little moment, the strange cursor appears. If I press it for longer (one second or so), it goes well.

So it seems I have found a workaround (or is it generally advisable to press the reset button for longer)?

Perhaps my hardware (or the V1-OS) has a little problem.

Neal, overall I think it's not your wonderful QUARTUS!

Matthias

Re: Only Hard Reset Possible After Quartus Programming Error

Posted by Allen Chen on July 07, 1998 at 17:39:16:

In Reply to: *Re: Only Hard Reset Possible After Quartus Programming Error* posted by Neal Bridges on July 07, 1998 at 17:03:52:

: : it's not code-dependent. Try

: : : test begin repeat ;

: Hmm, that code should fail. REPEAT is only valid in a BEGIN ... WHILE ...

: REPEAT context.

: Does the same thing happen with

: : test begin again ;

: ? Let me know.

On my Palm III the begin-repeat gives a stack underflow error as expected, while begin-again requires a soft reset. I only have 200K free memory left.

Re: Only Hard Reset Possible After Quartus Programming Error

Posted by [Neal Bridges](#) on July 08, 1998 at 13:15:25:

In Reply to: *Re: Only Hard Reset Possible After Quartus Programming Error* posted by Allen Chen on July 07, 1998 at 17:39:16:

: On my Palm III the begin-repeat gives a stack underflow error as expected, while

: begin-again requires a soft reset. I only have 200K free memory left.

Ok, this is as expected... begin again is a closed loop requiring reset. What I want to know is when you do the soft reset, do you have the problem you mentioned earlier in this thread?

Neal

Systrap #'s for new PalmOS 3.0 API's..where?

Posted by [Allen Chen](#) on July 01, 1998 at 17:35:00:

Hi does anyone here knows where I can get a list of the Systrap #'s for the new API in the PalmOS 3.0?

TIA

-Allen

Re: Systrap #'s for new PalmOS 3.0 API's..where?

Posted by [Mike T. Miller](#) on July 01, 1998 at 18:58:21:

In Reply to: *Systrap #'s for new PalmOS 3.0 API's..where?* posted by Allen Chen on July 01, 1998 at 17:35:00:

: Hi does anyone here knows where I can get a list of the Systrap #'s for the new

: API in the PalmOS 3.0?

: TIA

: -Allen

If you download the includes for the PalmOS 3.0 SDK at

<http://palmpilot.3com.com/devzone/tools/incs30.zip>

you'll find them in System/SysTraps.h

The only problem is that they're not in a very convenient format :(

mike

Re: Systrap #'s for new PalmOS 3.0 API's..where?

Posted by [Allen Chen](#) on July 01, 1998 at 22:18:45:

In Reply to: *Re: Systrap #'s for new PalmOS 3.0 API's..where?* posted by Mike T. Miller on July 01, 1998 at 18:58:21:

: If you download the includes for the PalmOS 3.0 SDK at
: <http://palmpilot.3com.com/devzone/tools/incs30.zip>
: you'll find them in System/SysTraps.h

Thanks Mike. I looked everywhere but never thought to look there! Duh. :)

: The only problem is that they're not in a very convenient format :(

With the help of MS Excel, I've put together the list for the new v3.0 sysstraps:

```
41639  "sysTrapDlkControl,"      // was sysTrapCmBroadcast
41643  "sysTrapUnused2,"          // *DO NOT RE-USE UNTIL 3.0* was sysTrapPsrInit
(vmk 7/16/96)
41644      "sysTrapSysLibLoad,"    // ADDED IN v2.0 was sysTrapPsrClose,
41645      "sysTrapSndPlaySmf,"    // ADDED IN v3.0 (was sysTrapPsrGetCommand in
1.0, removed in 2.0)"
41646      "sysTrapSndCreateMidiList,"    "// ADDED IN v3.0 (was
sysTrapPsrSendReply in 1.0, removed in 2.0)"

      // PalmOS 3.X traps

41735  "sysTrapExgInit,"
41736  "sysTrapExgConnect,"
41737      "sysTrapExgPut,"
41738  "sysTrapExgGet,"
41739  "sysTrapExgAccept,"
41740      "sysTrapExgDisconnect,"
41741  "sysTrapExgSend,"
41742  "sysTrapExgReceive,"
41743      "sysTrapExgRegisterData,"
41744  "sysTrapExgNotifyReceive,"
41745  "sysTrapExgControl,"
41746      "sysTrapPrgStartDialog,"
41747  "sysTrapPrgStopDialog,"
41748  "sysTrapPrgUpdateDialog,"
```

```

41749 "sysTrapPrgHandleEvent, "
41750 "sysTrapImcReadFieldNoSemicolon, "
41751 "sysTrapImcReadFieldQuotablePrintable, "
41752 "sysTrapImcReadPropertyParameter, "
41753 "sysTrapImcSkipAllPropertyParameters, "
41754 "sysTrapImcReadWhiteSpace, "
41755 "sysTrapImcWriteQuotedPrintable, "
41756 "sysTrapImcWriteNoSemicolon, "
41757 "sysTrapImcStringIsAscii, "
41758 "sysTrapTblGetItemFont, "
41759 "sysTrapTblSetItemFont, "
41760 "sysTrapFontSelect, "
41761 "sysTrapFntDefineFont, "
41762 "sysTrapCategoryEdit, "
41763 "sysTrapSysGetOSVersionString, "
41764 "sysTrapSysBatteryInfo, "
41765 "sysTrapSysUIBusy, "
41766 "sysTrapWinValidateHandle, "
41767 "sysTrapFrmValidatePtr, "
41768 "sysTrapCtlValidatePointer, "
41769 "sysTrapWinMoveWindowAddr, "
41770 "sysTrapFrmAddSpaceForObject, "
41771 "sysTrapFrmNewForm, "
41772 "sysTrapCtlNewControl, "
41773 "sysTrapFldNewField, "
41774 "sysTrapLstNewList, "
41775 "sysTrapFrmNewLabel, "
41776 "sysTrapFrmNewBitmap, "
41777 "sysTrapFrmNewGadget, "
41778 "sysTrapFileOpen, "
41779 "sysTrapFileClose, "
41780 "sysTrapFileDelete, "
41781 "sysTrapFileReadLow, "
41782 "sysTrapFileWrite, "
41783 "sysTrapFileSeek, "
41784 "sysTrapFileTell, "
41785 "sysTrapFileTruncate, "
41786 "sysTrapFileControl, "
41787 "sysTrapFrmActiveState, "
41788 "sysTrapSysGetAppInfo, "
41789 "sysTrapSysGetStackInfo, "
41790 "sysTrapScrDisplayMode, "
41791 "sysTrapHwrLCDGetDepth, "
41792 "sysTrapHwrGetROMToken, "
41793 "sysTrapDbgControl, "
41794 "sysTrapExgDBRead, "
41795 "sysTrapExgDBWrite, "
41796 "sysTrapSysGremlins, "
41797 "sysTrapFrmRemoveObject, "

```

These are, of course, in addition to the v2.0 and v1.0 sysstraps documented elsewhere. I'm actually interested in the FrmNew***, etc, API's for setting up

dynamic UI for the possibility of visually creating UI resources directly on the PalmIII without pilrc.

-Allen

Using Resources

Posted by [Jim Deakin](#) on July 01, 1998 at 07:48:51:

Are there any examples available of how to generat a resource, with PilRC, and use it from Quartus?

Jim Deakin

unhelpful error messages from startup.quartus

Posted by [Jim Deakin](#) on July 01, 1998 at 07:46:32:

When you've cut and pasted a file into a memo, and included it from startup.quartus, if the load hits an unknown word, it doesn't echo it to the screen to let you see how far the load got. You're stuck using 'words' to see how far it managed, then trying to spot the bad word in the next definition. Is there any chance of a fix?

Having fun with it so far though

Jim deakin

Re: unhelpful error messages from startup.quartus

Posted by [Neal Bridges](#) on July 01, 1998 at 11:45:17:

In Reply to: *unhelpful error messages from startup.quartus* posted by Jim Deakin on July 01, 1998 at 07:46:32:

: When you've cut and pasted a file into a memo, and included it from
: startup.quartus, if the load hits an unknown word, it doesn't echo it to the
: screen to let you see how far the load got. You're stuck using 'words' to see
: how far it managed, then trying to spot the bad word in the next definition.
Is

: there any chance of a fix?

: Having fun with it so far though

There's more than a chance; I've put an echo switch in the next version to

display each line of source as it loads.

Neal

Re: unhelpful error messages from startup.quartus

Posted by Robert Patten on July 02, 1998 at 00:19:50:

In Reply to: *Re: unhelpful error messages from startup.quartus* posted by Neal Bridges on July 01, 1998 at 11:45:17:

```
: z ." z " .s
begin key 31 > refill and
while source type cr
source evaluate .s
repeat ;
z
```

Re: unhelpful error messages from startup.quartus

Posted by [Robert Patten](#) on July 02, 1998 at 10:24:00:

In Reply to: *Re: unhelpful error messages from startup.quartus* posted by Robert Patten on July 02, 1998 at 00:19:50:

\ Tool for locating errors in Forth source.

\ CR will exit tool.

\ patten@ainet.com 98.7.2 7:00

```
: z ." z " .s
```

```
begin
```

```
key 31 > refill and \ wait for key
```

```
\ refill \ don't wait for key
```

```
while source type cr
```

```
source evaluate .s
```

```
repat ." z " ;
```

```
z \ Place z at end of line. REFILL will discard after z.
```

```
\ If the last line of memo doesn't have a carriage return,
```

```
\ INCLUDE evaluates line also.
```

Price of Quartus Pro

Posted by [Telmo Carmo](#) on June 30, 1998 at 08:29:32:

Can you give an aproximate price for the professional version of Quartus.
Only the Pro version will be able to generate prc?

Re: Price of Quartus Pro

Posted by [Neal Bridges](#) on June 30, 1998 at 12:15:53:

In Reply to: *Price of Quartus Pro* posted by Telmo Carmo on June 30, 1998 at 08:29:32:

: Can you give an aproximate price for the professional version of Quartus.
: Only the Pro version will be able to generate prc?

Quartus will be available in two forms, 1) no-cost, but without the ability to generate standalone PRC files, and 2) in a Professional version that can generate stripped stand-alone PRCs. Pricing has yet to be determined, and will depend upon the distribution channels, etc.

Neal

Re: Price of Quartus Pro

Posted by [Ted Maas](#) on July 05, 1998 at 13:50:12:

In Reply to: *Re: Price of Quartus Pro* posted by Neal Bridges on June 30, 1998 at 12:15:53:

: : Can you give an aproximate price for the professional version of Quartus.
: ... Pricing has yet to be determined ...

Neal,

I think pricing your product will not be an easy task. Some of the PalmPilot development tools cost many hundreds of dollars, others are free. You have a good handle on the main difference - the ability to generate "native code pilot apps".

But what we'd like is an "esitmate". Will it be in hundreds of dollars range for the professional version? Or will it be in the tens of dollars range? I'm sure my wife would let me spring for the latter ... but the

former? "no way dude!" would be her response :-}

Good Luck!

ted

Re: Price of Quartus Pro

Posted by [Neal Bridges](#) on July 07, 1998 at 01:28:44:

In Reply to: *Re: Price of Quartus Pro* posted by Ted Maas on July 05, 1998 at 13:50:12:

: But what we'd like is an "esitmate". Will it be in hundreds of dollars
: range for the professional version? Or will it be in the tens of dollars
: range? I'm sure my wife would let me spring for the latter ... but the
: former? "no way dude!" would be her response :-}

I think your wife won't complain about the price.

Neal

Inline 68K assembler?

Posted by [Allen Chen](#) on June 30, 1998 at 00:34:54:

Hi Neal, does Quartus have the separate assembler-wordlist that allows inline macro-assembler functions? Words like assembler, code, end-code and the like which I think is part of the standard toolkit extension or something. (Damn, I really should start reading the standards soon). Anyway, if it's not included do you have any plan to add it to the professional version?

-Allen

Re: Inline 68K assembler?

Posted by [Neal Bridges](#) on June 30, 1998 at 08:47:21:

In Reply to: *Inline 68K assembler?* posted by Allen Chen on June 30, 1998 at 00:34:54:

: Hi Neal, does Quartus have the separate assembler-wordlist that allows inline
: macro-assembler functions? Words like assembler, code, end-code and the like
: which I think is part of the standard toolkit extension or something. (Damn,
I
: really should start reading the standards soon). Anyway, if it's not included
: do you have any plan to add it to the professional version?

The Standard allows for an implementation-specific inline assembler, but such a thing is too large to leave as part of the kernel. However, I have ported a 68000 post-fix assembler from another environment, and will make it available as an unsupported module.

Inline assembly is available now, albeit in a less convenient form. Machine language can be added directly to the dictionary from within a definition. For instance, this precisely reproduces DUP from the 0.2.1B kernel:

```
: DUP ( x -- x x )  
  [ hex 3907 CS, ] \ move.w TOS,-(SP)  
; inline
```

Neal

Brief Glossary of Implementation-Specific Words in Quartus

Posted by [Neal Bridges](#) on June 29, 1998 at 20:40:55:



I'll be incorporating this into the documentation in the next release. Let me know what you think.

- [Brief Glossary of Implementation-Specific Words in Quartus](#)

Quartus interpreter behaviour

Posted by [Allen Chen](#) on June 25, 1998 at 11:16:17:

Hi Neal, another question. I've noticed that when you try to compile a definition using `:` via the interpreter, if you mistype something and go to the next line, it gives you an "undefine" error (which is okay) but then jumps out of the `:` compiler state right away (which is not okay I don't think?). Anything else you enter that has a compile-state definition (such as `;`) will return a "stack underflow" error.

I am not sure if this is a standard behaviour, but it's rather inconvenient when you are trying to test out something quick and dirty on the interpreter. Although I can see how this behaviour can be useful when you are loading a program via the memopad. Is there a way to make the compiler behave differently in the two cases?

Allen

Re: Quartus interpreter behaviour

Posted by [Neal Bridges](#) on June 25, 1998 at 14:15:09:

In Reply to: *Quartus interpreter behaviour* posted by Allen Chen on June 25, 1998 at 11:16:17:

: Hi Neal, another question. I've noticed that when you try to compile a
: definition using `:` via the interpreter, if you mistype something and go to the
: next line, it gives you an "undefine" error (which is okay) but then jumps out
: of the `:` compiler state right away (which is not okay I don't think?).

Anything

: else you enter that has a compile-state definition (such as `;`) will return a
: "stack underflow" error.

: I am not sure if this is a standard behaviour, but it's rather inconvenient
: when you are trying to test out something quick and dirty on the interpreter.
: Although I can see how this behaviour can be useful when you are loading a
: program via the memopad. Is there a way to make the compiler behave
differently
: in the two cases?

The error thrown generates an ABORT, which calls QUIT, and in the process clears the control stack and drops you out of compilation state, which is standard behaviour, yes.

Any exception caught by the interpreter has this error message/ABORT sequence as its behaviour, with good reason; it's difficult to know the state of the stack when an exception is thrown, and so it is cleared; and being cleared, loses compilation pointers and so forth, so it drops back into interpretation state.

FWIW, I don't make new definitions at the interpreter, unless they're trivial. I write my definitions in the memo pad and use the interpreter for interactive testing and debugging.

Neal

Fatal Error

Posted by [Allen Chen](#) on June 25, 1998 at 10:55:49:

Hi Neal. All of a sudden I'm getting this Fatal Error everytime I try to exit Quartus either via application icon or via any of the four hardware buttons:

Fatal Error
DataMgr.c, Line: 2343, Null DB ref.

I think the workspace.pdb has been corrupted some how. But I can't erase the workspace.pdb without erasing quartus. And if quartus is in the flash, PalmIII won't even let you erase it period.

Help?

Re: Fatal Error

Posted by [Neal Bridges](#) on June 25, 1998 at 14:17:57:

In Reply to: *Fatal Error* posted by Allen Chen on June 25, 1998 at 10:55:49:

: Hi Neal. All of a sudden I'm getting this Fatal Error everytime I try to exit
: Quartus either via application icon or via any of the four hardware buttons:

: Fatal Error
: DataMgr.c, Line: 2343, Null DB ref.

: I think the workspace.pdb has been corrupted some how. But I can't erase the
: workspace.pdb without erasing quartus. And if quartus is in the flash,

PalmIII
: won't even let you erase it period.

: Help?

I've never seen this happen. Workspace.pdb is recreated anew each time Quartus starts, so the corruption would have to be within the database header itself not to allow it to be deleted and re-written. Are you out of memory space on your Pilot?

I'll write a small app that just deletes the workspace, I should have that available tonight, you can give it a try. I believe there are other utilities

(FPSUtil comes to mind) that allow you to delete specific files.

Neal

Re: Fatal Error

Posted by [Allen Chen](#) on June 25, 1998 at 15:03:26:

In Reply to: *Re: Fatal Error* posted by Neal Bridges on June 25, 1998 at 14:17:57:

: I've never seen this happen. Workspace.pdb is recreated anew each time
Quartus
: starts, so the corruption would have to be within the database header itself
not
: to allow it to be deleted and re-written. Are you out of memory space on your
: Pilot?

I still have over 200K left on my PalmIII's RAM.

: I'll write a small app that just deletes the workspace, I should have that
: available tonight, you can give it a try. I believe there are other utilities
: (FPSUtil comes to mind) that allow you to delete specific files.

I ended up having to delete the whole thing and resintall. It works fine after that. Except I don't know when it will act up again. Actually I've experienced something similar in PilotForth. After a while, PilotForth began to refuse to even start. Everytime I tried to start it gave me a fatal something error (forgot which one exactly). The problem even persisted after I erased the application and reinstall. Only a hard-reset cured that. This leads me to wonder if either PilotForth or Quartus uses any part of the system database. I know some programs do that for various reasons.

-Allen

Re: Fatal Error

Posted by [Neal Bridges](#) on June 25, 1998 at 16:47:04:

In Reply to: *Re: Fatal Error* posted by Allen Chen on June 25, 1998 at 15:03:26:

: I ended up having to delete the whole thing and resintall. It works fine
after
: that. Except I don't know when it will act up again. Actually I've
experienced
: something similar in PilotForth. After a while, PilotForth began to refuse to
: even start. Everytime I tried to start it gave me a fatal something error

: (forgot which one exactly). The problem even persisted after I erased the
: application and reinstall. Only a hard-reset cured that. This leads me to
: wonder if either PilotForth or Quartus uses any part of the system database.
I
: know some programs do that for various reasons.

Not quite sure what you mean by the 'system database'. PilotFORTH accesses its
own PRC for workspace storage, while Quartus uses an external database.

With the clues I've got, I'd guess memory fragmentation, but I'm curious as to
why you get this when I don't-- I'm a pretty heavy PilotFORTH/Quartus user as
you can well imagine :)

What is your mix of applications, etc.?

Neal

Re: Fatal Error

Posted by [Allen Chen](#) on June 25, 1998 at 18:54:48:

In Reply to: *Re: Fatal Error* posted by Neal Bridges on June 25, 1998 at
16:47:04:

: Not quite sure what you mean by the 'system database'. PilotFORTH accesses
its

I think some programs store stuff in the system preference database or something
like that.

: own PRC for workspace storage, while Quartus uses an external database.

: With the clues I've got, I'd guess memory fragmentation, but I'm curious as to

I thought memory fragmentation does not occur on Palm III?

: why you get this when I don't-- I'm a pretty heavy PilotFORTH/Quartus user as
: you can well imagine :)

: What is your mix of applications, etc.?

Gosh. I've got tons of stuff squeezed in the thing. Let's see:

In the flash rom (except built-in apps):

DateBk3
HandNote3
TealDoc
Palm SfCave
Secret!
Tiny Sheet
HackMaster
TealPaint
MathLib

PinYin Table for Chinese OS
12x12 Font for Chinese OS

In RAM:

AlwaysOn
BackupBuddy
BlockParty
Bmonitor (for BatteryMonitorHack)
CasLrt
CharPanel (for CharHack)
Chinese OS
Convert-It
Echo Config (for EchoHack)
Galax
GrafAid
HackMaster
Invert
Maze Race
Memory
Patience
Programmer's Calculator
Picture Logic
PilotGo
PocketChess
Quartus
SynCalc
Sun!
871 kbyte of DOC files
TRGFlash
ZIP
Zork 1 (for ZIP)

Hacks:

VoltageDisplay Hack
Battery Monitor
Echo Hack
TealGlance
SymbolHack
CharHack
SwitchHack

Free Memory: 220 K

Quartus is behaving okay now after I've reinstall it in the RAM. Perhaps it's a flash-related problem?

-Allen

Re: Fatal Error

Posted by [Neal Bridges](#) on June 25, 1998 at 23:15:28:

In Reply to: *Re: Fatal Error* posted by Allen Chen on June 25, 1998 at 18:54:48:
: Quartus is behaving okay now after I've reinstall it in the RAM. Perhaps it's
a
: flash-related problem?

Perhaps, but I have no idea why it would mind being in Flash RAM for any reason,
it's not self-modifying at all. Somehow I think the problem lies elsewhere.

Neal

Re: Fatal Error

Posted by [Lou Solomon](#) on June 29, 1998 at 10:25:52:

In Reply to: *Re: Fatal Error* posted by Neal Bridges on June 25, 1998 at
23:15:28:

: : Quartus is behaving okay now after I've reinstall it in the RAM. Perhaps
it's
: a
: : flash-related problem?

: Perhaps, but I have no idea why it would mind being in Flash RAM for any
reason,
: it's not self-modifying at all. Somehow I think the problem lies elsewhere.

: Neal

IMHO, from my experience... it always seems to be the hacks. For example, I
downloaded a copy of Tealscript (the new grafitti replacement system)... well,
with that 'hack', Quartas & 2 games I have did NOT work. As soon as
Tealscript was inactivated (deleted)... boom, everything works fine.

Lou

Re: Fatal Error

Posted by [Allen Chen](#) on June 29, 1998 at 15:02:12:

In Reply to: *Re: Fatal Error* posted by Lou Solomon on June 29, 1998 at 10:25:52:

: IMHO, from my experience... it always seems to be the hacks. For example, I downloaded a copy of Tealscript (the new grafitti replacement system)... well, with that 'hack', Quartas & 2 games I have did NOT work. As soon as : Tealscript was inactivated (deleted)... boom, everything works fine.

When Quartus wasn't working, I tried deactivating all the hacks without no help at all. Now I reinstalled Quartus and have it working again, it works perfectly even with all the hacks activated.

Using Both pilotForth and Quartus

Posted by [Karl Williams](#) on June 25, 1998 at 10:04:53:

First thanks a million for your work on Forth for the PalmPilot. Having used Forth briefly at the age of 12 (17 years ago !) I think I was more pleased with finding pilotForth than actually getting my new PalmPilot (2 weeks ago !!)

I'll just have to relearn the language now - should be fun.

A few Qs on Quartus.

- 1) Can I install it alongside pilotForth (just until Quartus is out of beta) ?
- 2) You mention that on the Quartus beta the dictionary isn't saved when you switch apps but is there still a save menu option - surely I won't have to keep re-entering stuff ?
- 3) How much will the commercial release of Quartus cost and is there an estimate of release date ?

Re: Using Both pilotForth and Quartus

Posted by [Neal Bridges](#) on June 25, 1998 at 14:06:58:

In Reply to: *Using Both pilotForth and Quartus* posted by Karl Williams on June 25, 1998 at 10:04:53:

: First thanks a million for your work on Forth for the PalmPilot. Having used : Forth briefly at the age of 12 (17 years ago !) I think I was more pleased

with
: finding pilotForth than actually getting my new PalmPilot (2 weeks ago !!)
: I'll just have to relearn the language now - should be fun.

Thanks!

: A few Qs on Quartus.
: 1) Can I install it alongside pilotForth (just until Quartus is out of beta) ?
Yes.
: 2) You mention that on the Quartus beta the dictionary isn't saved when you
: switch apps but is there still a save menu option - surely I won't have to
keep
: re-entering stuff ?

Um, not quite sure what you mean about re-entering stuff. What is lost between
Quartus sessions is the workspace, the current state of the dictionary, and so
forth, so Quartus starts clean each time you re-enter it. Source is stored in
memos, and certainly they are retained between Quartus sessions; each time
Quartus starts it reloads the startup.quartus memo, if it exists, and from there
you can include whatever source you choose.

: 3) How much will the commercial release of Quartus cost and is there an
: estimate of release date ?

Stay tuned on this one, it's still in the works.

Neal

Re: Using Both pilotForth and Quartus

Posted by [Allen Chen](#) on June 25, 1998 at 11:40:17:

In Reply to: *Using Both pilotForth and Quartus* posted by Karl Williams on June
25, 1998 at 10:04:53:

: First thanks a million for your work on Forth for the PalmPilot. Having used
: Forth briefly at the age of 12 (17 years ago !) I think I was more pleased
with
: finding pilotForth than actually getting my new PalmPilot (2 weeks ago !!)

I feel the same way, actually. Thanks a lot Neal for such a great effort. I
can't wait for the commercial release!

My first contact with Forth was from a cool program called GraForth on Apple II.
It's a pre-ansi Forth with 3D graphics capability! Imagine that. Someone in my
highschool class (that was 12 years ago) gave me a pirated copy of it. There was
no manual and no one knew what Forth was. I ended up learning Forth by
disassembling the whole thing starting with DUP. After about a week of going
through the 6502 code I made a list of all the words and their definitions and

gave a copy to everyone who was playing with the thing. It sure was fun.

I saw Neal's pilotForth long before I got my PalmIII (when I was searching the net for a Forth system for my PC), you can imagine that was the first thing I look up when I got my PalmIII. :)

Allen

Fatal Exception

Posted by [Chris Kuperman](#) on June 25, 1998 at 01:03:50:

Replicable Fatal Exception:

Try this (put it in a memo):

```
\ startup.quartus
: ln
100 0 do i
0 i 100 i WinDrawGrayLine
loop
100 0 do i
0 i 100 i WinDrawLine
loop
;
```

Now, Restart Quartus, and run `ln`

6 times in a row. This was done on a Palm 1.0 OS

Re: Fatal Exception

Posted by [Neal Bridges](#) on June 25, 1998 at 01:51:59:

In Reply to: *Fatal Exception* posted by Chris Kuperman on June 25, 1998 at 01:03:50:

: Replicable Fatal Exception:

: Try this (put it in a memo):

```
: \ startup.quartus
: : ln
: 100 0 do i
: 0 i 100 i WinDrawGrayLine
: loop
: 100 0 do i
: 0 i 100 i WinDrawLine
: loop
: ;
```

: Now, Restart Quartus, and run `ln`

: 6 times in a row. This was done on a Palm 1.0 OS

I think you're thinking in Fortran. The problem here is that you're coding your loop as

```
100 0 do i
```

and that last i (which you don't need) is putting a number on the stack each time through the loop. By running your loops 6 times(!) you're trying to put 1200 items on the stack, and the stack eventually overflows, causing the fatal exception. Code it like this:

```
: ln
  100 0 do
    0 i 100 i WinDrawGrayLine
  loop
  100 0 do
    0 i 100 i WinDrawLine
  loop
;
```

Neal

Strings

Posted by [Chris Kuperman](#) on June 25, 1998 at 00:30:20:

I used FORTH about 6 years ago, briefly.
And though I would have a look at Quartus since I own a Pilot. I must say, an excellent implementation of FORTH. Nice and quick !

[Begin DumbQuestion]

But, I'm positive I used to make strings like the following:

" Put this string on the stack"

Quartus doesn't like this ?

[End]

-CK.

Re: Strings

Posted by [Neal Bridges](#) on June 25, 1998 at 00:58:18:

In Reply to: *Strings* posted by Chris Kuperman on June 25, 1998 at 00:30:20:

: I used FORTH about 6 years ago, briefly.
: And though I would have a look at Quartus since
: I own a Pilot. I must say, an excellent implementation
: of FORTH. Nice and quick !

Thanks!

```
: [Begin DumbQuestion]
: But, I'm positive I used to make strings like the following:
: " Put this string on the stack"
: Quartus doesn't like this ?
: [End]
: -CK.
```

The Standard word is S" as in:

```
: mystring s" Put this string on the stack" ;

mystring type
.( Mystring is ) mystring nip . .( characters long.) cr

Neal
```

New Quartus Discussion Forum on Dejanews

Posted by [Neal Bridges](#) on June 24, 1998 at 20:32:01:

I've created a discussion group on Dejanews for Quartus, have a look!

Neal

- [Newsgroup: `dejanews.members.tech.nbridges.quartus-forth`](#)

massena news server

Posted by [Jim Cook](#) on June 22, 1998 at 14:07:17:

Why not move the Quartus discussion group to the massena news server and set up a `pilot.programmer.quartus` news group? It would be a lot easier to navigate the threads on these discussion through a newsreader than through a web page.

Jim

Re: massena news server

Posted by [Neal Bridges](#) on June 22, 1998 at 17:16:47:

In Reply to: *massena news server* posted by Jim Cook on June 22, 1998 at 14:07:17:

: Why not move the Quartus discussion group to the massena news server and set
up
: a pilot.programmer.quartus news group? It would be a lot easier to navigate
: the threads on these discussion through a newsreader than through a web page.
: Jim

Jim, this discussion forum is up for the purposes of making announcements, etc., and isn't sufficiently industrial-strength to handle huge amounts of traffic. I've created a DejaNews group for general Quartus discussion; I'll post the details soon.

Neal

List of Standard Words

Posted by [Neal Bridges](#) on June 19, 1998 at 16:02:33:

I've created a listing of all ANSI Forth Standard words, grouped into word sets, generated from the listing found at the end of the Standard itself. It should help answer the question 'is that a standard word?' when looking at the many and varied sources of Forth information across the Web.

The file ansforth.zip contains both DOC and .txt versions.

Neal

- [ANSI Forth Standard Words in DOC and .txt formats](#)

Where to find the Forth Standard

Posted by [Neal Bridges](#) on June 19, 1998 at 14:32:51:

Here's the link to the ANS Forth Standard.

Neal

- [ANS Forth Standard Documentation](#)

Pilrc on the pilot? And Quartus stand alone PRC?

Posted by [Allen Chen](#) on June 19, 1998 at 13:12:48:

Does anyone know if something like pilrc exists on the pilot itself to compile resource data for Quartus without going back to win/dos? Or is there a way to create resources (windows, buttons, etc) from within Quartus programs?

Also, in the professional version of Quartus, would the stand alone prcs it creates contain the entire kernel even though most of it may not be used? Can it strip the extra fat and produce a lean executable? In other words, would I be able to create tiny <10K programs or hacks with Quartus?

Re: Pilrc on the pilot? And Quartus stand alone PRC?

Posted by [Neal Bridges](#) on June 19, 1998 at 14:26:26:

In Reply to: *Pilrc on the pilot? And Quartus stand alone PRC?* posted by Allen Chen on June 19, 1998 at 13:12:48:

: Does anyone know if something like pilrc exists on the pilot itself to compile
: resource data for Quartus without going back to win/dos? Or is there a way to
: create resources (windows, buttons, etc) from within Quartus programs?

I've toyed with the idea of rewriting PilRC in Forth itself. For now, though, Quartus supports the use of externally generated UI resources, compiled by PilRC. I'll be putting up an example of how to use them. There's no reason why you couldn't compile a resource file containing a number of frequently-used resources, and keep it in the Pilot for use in Quartus, especially during development.

: Also, in the professional version of Quartus, would the stand alone prcs it
: creates contain the entire kernel even though most of it may not be used? Can
: it strip the extra fat and produce a lean executable? In other words, would I
: be able to create tiny <10K programs or hacks with Quartus?

It strips the fat. Only your routines and those supporting functions from the kernel are included in the compiled program. My early results are all <10K.

I'd still suggest sticking with Pila for hacks; Quartus could be coerced into writing them, but you really want to know just how many cycles you're using when you interrupt a system call, and for that kind of low-level work the control that an assembler provides can't be beat.

Neal

New PalmOS 3.0 Systrap calls

Posted by [Allen Chen](#) on June 19, 1998 at 13:06:22:

Quartus doesn't seem to support any of the new PalmOS 3.0 systrap calls, such as the new API's for dynamic UI, IR, File Streaming, Greyscale, etc etc. Are there any plans to include them in the professional version?

Re: New PalmOS 3.0 Systrap calls

Posted by [Neal Bridges](#) on June 19, 1998 at 14:21:13:

In Reply to: *New PalmOS 3.0 Systrap calls* posted by Allen Chen on June 19, 1998 at 13:06:22:

: Quartus doesn't seem to support any of the new PalmOS 3.0 systrap calls, such as
: the new API's for dynamic UI, IR, File Streaming, Greyscale, etc etc. Are there
: any plans to include them in the professional version?

Yes, they'll be there. For the moment you can define them yourself easily enough. I don't have any PalmOS 3 systrap definitions in front of me at the moment, but here's how you'd define a PalmOS 2 systrap that wasn't in Quartus (this one is, but I'm presenting it to give you a notion of how to proceed):

```
: MenuGetActiveMenu ( -- menuhandle. ) 41410 systrap a0 ;
```

Neal

Quartus and FlashBuilderIII

Posted by [Allen Chen](#) on June 18, 1998 at 23:41:53:

Hi Neal, is the kernel of Quartus read-only? I'd like to put Quartus (when the professional version is out) in the flash memory via FlashBuilderIII...can it be done?

Re: Quartus and FlashBuilderIII

Posted by [Neal Bridges](#) on June 18, 1998 at 23:59:02:

In Reply to: *Quartus and FlashBuilderIII* posted by Allen Chen on June 18, 1998 at 23:41:53:

: Hi Neal, is the kernel of Quartus read-only? I'd like to put Quartus (when
: the professional version is out) in the flash memory via FlashBuilderIII...can
: it be done?

The kernel is read-only, yes. I think it should work in Flash memory. I'll be interested to hear your results.

Neal

Re: Quartus and FlashBuilderIII

Posted by [Allen Chen](#) on June 19, 1998 at 11:50:33:

In Reply to: *Re: Quartus and FlashBuilderIII* posted by Neal Bridges on June 18, 1998 at 23:59:02:

: The kernel is read-only, yes. I think it should work in Flash memory. I'll
be
: interested to hear your results.

After I made sure it's stable on my system I uploaded it to the flash. There doesn't seem to be any problem so far. The memory footprint went from 74K to 40K as reported by menu/info, although BackupBuddy reports an additional 13K Quartus_0_2_1_Beta.PDB in addition to the 40K Workspace.PDB in RAM and 34K Quartus.PRC in the flash. Something doesn't add up. *shrug*

Re: Quartus and FlashBuilderIII

Posted by [Neal Bridges](#) on June 19, 1998 at 14:28:59:

In Reply to: *Re: Quartus and FlashBuilderIII* posted by Allen Chen on June 19, 1998 at 11:50:33:

: : The kernel is read-only, yes. I think it should work in Flash memory. I'll
: be
: : interested to hear your results.

: After I made sure it's stable on my system I uploaded it to the flash. There
: doesn't seem to be any problem so far. The memory footprint went from 74K to
: 40K as reported by menu/info, although BackupBuddy reports an additional 13K
: Quartus_0_2_1_Beta.PDB in addition to the 40K Workspace.PDB in RAM and 34K

: Quartus.PRC in the flash. Something doesn't add up. *shrug*

I'm not generating that Quartus_0_2_1_Beta.PDB, I assume it's a byproduct of the FlashBuilder process. I'd like to look at the contents of it, if you'd be so kind as to mail it to me.

Neal

Re: Quartus and FlashBuilderIII

Posted by [Neal Bridges](#) on June 19, 1998 at 15:58:49:

In Reply to: *Re: Quartus and FlashBuilderIII* posted by Neal Bridges on June 19, 1998 at 14:28:59:

: I'm not generating that Quartus_0_2_1_Beta.PDB, I assume it's a byproduct of the
: FlashBuilder process. I'd like to look at the contents of it, if you'd be so
: kind as to mail it to me.

Hee hee hee. That's the beta documentation in DOC format you're looking at there. Just realized that myself. Having tested it, I've never installed it, and hence had forgotten temporarily what I'd named it.

Neal

Re: Quartus and FlashBuilderIII

Posted by [Allen Chen](#) on June 20, 1998 at 05:20:57:

In Reply to: *Re: Quartus and FlashBuilderIII* posted by Neal Bridges on June 19, 1998 at 15:58:49:

: Hee hee hee. That's the beta documentation in DOC format you're looking at
: there. Just realized that myself. Having tested it, I've never installed it,
: and hence had forgotten temporarily what I'd named it.

Hehe you are right. Usually a DOC file is a PRC file, except I use TealDoc and have converted all the DOC files into TealDoc PDB's. So I didn't realize that it's a DOC file when I saw it. Oh well.

Forth Standards

Posted by [Lou Solomon](#) on June 18, 1998 at 18:43:12:

Neal:

I hate to be a pest about these things, but what's up with the idea of a 'Forth' standard?

For example: I tried downloading a forth compiler I found from links to Forth.org.

This compiler (pForth, by Phil Burk, et.al.), came with a tutorial. While going over the tutorial, on the pilot, I found a number of words did not work.

For example: 0sp (zero/s/p) is a word that is supposed to clear the stack. Didn't work on Quartas... and... no mention was made that it is non-ansi-standard type word in his tutorial.

He also has something about strings, specifically defining them in words with the C" word, for example:

```
: Greeting C" Hello There";
```

well, this don't work either.

I now have 2 books, and a number of examples from various places on the web, and lot's of things don't work the way it says they should.... Is there some kind of 'standard' way of indicating that the word is not ANSI compatible? Shouldn't they really be indicating that in the text?

Jumping off my soapbox.....

Lou

PS: I did read about the WORDS word, and when I ran it in Quartas, it seems like the first couple of entries scroll off the top, till the page/line stop begins. I'm not sure if this can be considered a bug or not, but now you know.....

Thanks again for the time you are spending answering me, and building quartas...

Re: Forth Standards

Posted by [Neal Bridges](#) on June 18, 1998 at 22:30:48:

In Reply to: *Forth Standards* posted by Lou Solomon on June 18, 1998 at 18:43:12:

: I hate to be a pest about these things, but what's up with the idea of a 'Forth' standard?

: For example: I tried downloading a forth compiler I found from links to Forth.org.

: This compiler (pForth, by Phil Burk, et.al.), came with a tutorial. While

going over the tutorial, on the pilot, I found a number of words did not work.

: For example: 0sp (zero/s/p) is a word that is supposed to clear the stack. Didn't work on Quartas... and... no mention was made that it is non-ansi-standard type word in his tutorial.

Lou, you really need a copy of the ANS Forth Standard. Download it from the link on one of my pages. One of the things in it, right near the back, is a list of Standard words. Not all of these words are in Quartus, but most are, and many that aren't can be provided in source form.

Certain tutorials were written before the Standard came out, and hence don't reference it; pForth isn't one of those, but it's shouldn't be too much of a burden to scan the Standard itself.

By the way, 0sp is not a Standard word, and Quartus has no exact equivalent for it. If you retain the stack pointer using SP@ you can restore it later with SP!. I'd question why you need to play with the stack pointer at all, but assuming you did, that's the mechanism provided in Quartus.

: PS: I did read about the WORDS word, and when I ran it in Quartas, it seems like the first couple of entries scroll off the top, till the page/line stop begins. I'm not sure if this can be considered a bug or not, but now you know.....

I noticed that too, I've fixed it already. Thanks for the report.

Neal

Re: Forth Standards

Posted by [Dale Nolan](#) on June 19, 1998 at 12:58:13:

In Reply to: *Re: Forth Standards* posted by Neal Bridges on June 18, 1998 at 22:30:48:

: Lou, you really need a copy of the ANS Forth Standard. Download it from the
: link on one of my pages. One of the things in it, right near the back, is a
: list of Standard words. Not all of these words are in Quartus, but most are,
: and many that aren't can be provided in source form.

Where would you find these? I am still learning Forth (and having more fun than learning Fortran 20 years ago) and having more source of 'basic word' would help a lot.

Thanks

Dale

Re: Forth Standards

Posted by [Neal Bridges](#) on June 19, 1998 at 22:31:54:

In Reply to: *Re: Forth Standards* posted by Dale Nolan on June 19, 1998 at 12:58:13:

```
: Where would you find these? I am still learning Forth (and having more fun
that
: learning Fortran 20 years ago) and having more source of 'basic word' would
: help a lot.
```

Most of them you can puzzle out simply enough. For instance, from the CORE EXT wordset:

```
: 2R>  r> r> swap ; inline
: 2>R  swap >r >r ; inline
: 2R@  2r> 2dup 2>r ; inline

: 0<>  0= invert ;
```

Here's a definition for KEY? that works in Quartus:

```
: KEY? ( -- flag )
  begin ekey? dup while
    event @ 4 = if exit then
    ekey 2drop
  repeat ;
```

Neal

Bug in SP@ (Quartus 0.2.1b)

Posted by [Neal Bridges](#) on June 18, 1998 at 10:03:14:

There's a bug in SP@ in Quartus 0.2.1b. You can fix it temporarily by placing

```
: sp@ ( -- addr. ) dup sp@ 2. d+ rot drop ;
```

in your startup.quartus file.

I've fixed it in 0.2.2, which I'll be releasing shortly.

Neal

Books about Forth

Posted by [Lou Solomon](#) on June 17, 1998 at 13:52:57:

Any/all:

I'd like to recommend a book called "Mastering Forth" by Tracy, Anderson and Advanced Micromotion Inc. Published by "Brady", 1989 (division of Simon & Shuster).

First I found an old copy of Starting Forth (Brody)... it was humorous and interesting, but I thought the programming examples were trivial. And, in my opinion, way to much of the time was spent on stack operations and especially, number arithmetic. I know the stuff is important (and integral to Forth), but writers forget that most programmers in the world write business applications, not calculations. (on a side note... I've been programming for 20 years, and I used to always get asked if you have to be good in math to be a programmer. I usually laugh and tell them that I've never been paid for any program that I wrote that included a trigonometric function in it).

I've looked at Starting Forth, and you'd barely know there was a VARIABLE word in it. I'm still so new, but I kept trying to think about how I would pass multiple values between calls, using only the parameter stack. After reading the "mastering forth" book, I've got a better handle on it. (bear with me... I'm really a newby with this forth thing....)

Lou

PS: Is it in bad 'forth' taste to store/use things in variables when they really can be on the stack? I ask this because it will be a lot easier for me, at least at the beginning to think of values stored in variables, and just put them on the stack when I need to. For example, in one of the books they talk about the quadratic equation, particularly using the 'return' stack as a temporary holder. If I put intermediate results in variables, will forth-folk chuckle at me?

Re: Using Variables to Pass Parameters in Forth

Posted by [Neal Bridges](#) on June 17, 1998 at 23:08:02:

In Reply to: *Books about Forth* posted by Lou Solomon on June 17, 1998 at 13:52:57:

: PS: Is it in bad 'forth' taste to store/use things in variables when they really can be on the stack? I ask this because it will be a lot easier for me, at least at the beginning to think of values stored in variables, and just put them on the stack when I need to. For example, in one of the books they talk about the quadratic equation, particularly using the 'return' stack as a

temporary holder. If I put intermediate results in variables, will forth-folk chuckle at me?

Use the stack to pass parameters. It's not a question of 'bad taste', but rather of 'bad Forth'. To avoid the stack for parameter passing is to avoid using one of Forth's strongest features: transparent parameter passing.

It takes a little while to learn to keep your words small, name words well, factor thoroughly, keep the active items on the stack down to around 4 or less, minimize stack juggling, avoid the use of ROLL and PICK, and not use variables except for global data and occasionally for static storage associated with a specific word.

Neal

Quartus Event Driven Programming

Posted by [Lou Solomon](#) on June 17, 1998 at 13:40:36:

Neal:

What plans are there for Quartus to follow an 'event' driven programming model? I've downloaded the SDK docs, and have looked over some example code in 'C', and it seems an integral part of a pilot program is the event driven model, ie: checking for messages from the system, and running appropriate code.

Will there be standard Quartas/Forth words which run when system messages occur? For example: if an application shutdown message comes in, will the Q/F program be able to handle it appropriately? Will a QF program be able to open up and run a particular 'program'? (ie: an alarm message from the system).

Personally, I'm a Vax-Basic programmer, and have very little experience with the event-driven model of programming, so even if I did it in C, I'd probably write my program more non-event (sequential) like, anyway.

Lou Solomon

Re: Quartus Event Driven Programming

Posted by [Neal Bridges](#) on June 17, 1998 at 23:32:27:

In Reply to: *Quartus Event Driven Programming* posted by Lou Solomon on June 17, 1998 at 13:40:36:

: What plans are there for Quartus to follow an 'event' driven programming
: model? I've downloaded the SDK docs, and have looked over some example code
: in 'C', and it seems an integral part of a pilot program is the event driven
: model, ie: checking for messages from the system, and running appropriate

: code.

It's up to you. To handle system events, you need only call KEY or EKEY. KEY handles all events except 'keyboard' events, which are deciphered and left on the stack. EKEY passes the first non-system event type to the stack, and the EVENT word points to the incoming event itself.

If those don't do what you want, you can call EvtGetEvent directly and write your own event handling code in Forth.

: Will there be standard Quartas/Forth words which run when system messages occur? For example: if an application shutdown message comes in, will the Q/F program be able to handle it appropriately? Will a QF program be able to open up and run a particular 'program'? (ie: an alarm message from the system).

EKEY (and hence KEY, which is based on EKEY) automatically calls BYE when the event queue receives an application quit message. I've got code written for an upcoming release that will allow you to vector BYE and run your own routine before the program terminates.

The ability to handle application launch codes will be a feature of the commercial release, as only standalone PRC files would need concern themselves with special handling of specific launch codes.

: Personally, I'm a Vax-Basic programmer, and have very little experience with the event-driven model of programming, so even if I did it in C, I'd probably write my program more non-event (sequential) like, anyway.

Quartus makes that entirely feasible; with the event handler embedded in KEY and EKEY, you're free to handle events whenever you see fit, in any way that suits you.

Neal

Re: Quartus Event Driven Programming

Posted by [Matthias Schneider](#) on June 25, 1998 at 04:08:44:

In Reply to: *Re: Quartus Event Driven Programming* posted by Neal Bridges on June 17, 1998 at 23:32:27:

: To handle system events, you need only call KEY or EKEY. KEY handles all events except 'keyboard' events, which are deciphered and left on the stack. EKEY passes the first non-system event type to the stack, and the EVENT word points to the incoming event itself.

I am trying to use EKEY in conjunction with the EvtGetPen-Systemcall to get the actual x- and y-coordinates of the pen. I can't solve the problem because the call of "EvtGetPen" results in an Fatal Error.

Could anyone describe a solution?

Neal, you wrote that KEY is based in EKEY. If you wrote KEY as a Forth word, could you show me the definition of this word - I hope with your solution to a very similar problem I could solve my one. Thanks!

Matthias

KEY in high-level Forth (was Quartus Event Driven Programming)

Posted by [Neal Bridges](#) on June 26, 1998 at 11:24:44:

In Reply to: *Re: Quartus Event Driven Programming* posted by Matthias Schneider on June 25, 1998 at 04:08:44:

: Neal, you wrote that KEY is based in EKEY. If you wrote KEY as a Forth word, could you show me the definition of this word - I hope with your solution to a very similar problem I could solve my one. Thanks!

Here's KEY implemented in high-level Forth (note KEY is already a primitive, but this shows how it can be implemented):

```
: KEY ( -- char )
  begin
    ekey ekey>char 0= while drop
  repeat ;
```

Neal

Re: Quartus Event Driven Programming

Posted by [Neal Bridges](#) on June 25, 1998 at 14:25:37:

In Reply to: *Re: Quartus Event Driven Programming* posted by Matthias Schneider on June 25, 1998 at 04:08:44:

:
: : To handle system events, you need only call KEY or EKEY. KEY
: : handles all events except 'keyboard' events, which are deciphered and left
on
: : the stack. EKEY passes the first non-system event type to the stack, and
the
: : EVENT word points to the incoming event itself.

: I am trying to use EKEY in conjunction with the EvtGetPen-Systemcall to get the actual x- and y-coordinates of the pen. I can't solve the problem because the call of "EvtGetPen" results in an Fatal Error.

: Could anyone describe a solution?

: Neal, you wrote that KEY is based in EKEY. If you wrote KEY as a Forth word, could you show me the definition of this word - I hope with your solution to a very similar problem I could solve my one. Thanks!

Matthias, you don't need EvtGetPen. The pen coordinates are right inside the event itself. Try this code for retrieving pen down events and coordinates:

```
event 2 cells + constant coords
1 constant PenDown
3 constant PenMove
: showpen
begin
  ekey dup PenDown = swap PenMove = or
  if coords 2@ . . cr then
again ;
```

Neal

Re: Quartus Event Driven Programming

Posted by [Allen Chen](#) on June 29, 1998 at 17:37:47:

In Reply to: *Re: Quartus Event Driven Programming* posted by Neal Bridges on June 25, 1998 at 14:25:37:

```
: event 2 cells + constant coords
: 1 constant PenDown
: 3 constant PenMove
: : showpen
: begin
: ekey dup PenDown = swap PenMove = or
: if coords 2@ . . cr then
: again ;
```

Just for fun, with a little modification this becomes a neat little drawing program:

```
\ drawpen
event 2 cells + constant coords
1 constant pendown
3 constant penmove
variable oldcoords 1 cells allot
-1 oldcoords !
: drawpen
WinEraseWindow
begin
ekey dup pendown = swap penmove = or if
coords 2@ 2dup
```

```
oldcoords @ 0< if 2dup else oldcoords 2@ then
WinDrawLine oldcoords 2!
else
-1 oldcoords !
then
again ;
```

If this doesn't work then there is a typo somewhere :)

Next thing you can try is to create a database that stores all the coordinates as you draw, a database manager for different "pages", etc etc, and before you know it, you have an equivalent of Visual C++'s Scribble tutorial in front of you. :)

Actually this is not a bad idea. Neal, do you have any plan to include a tutorial like Scribble in the professional version that would demonstrate the Forth language and PalmOS API at the same time?

Re: Quartus Event Driven Programming

Posted by [Neal Bridges](#) on June 30, 1998 at 00:08:28:

In Reply to: *Re: Quartus Event Driven Programming* posted by Allen Chen on June 29, 1998 at 17:37:47:

: Just for fun, with a little modification this becomes a neat little drawing
: program:

: Next thing you can try is to create a database that stores all the coordinates
: as you draw, a database manager for different "pages", etc etc, and before you
: know it, you have an equivalent of Visual C++'s Scribble tutorial in front of
: you. :)

It'd be better to store the whole screen bitmap in a database record, as Doodle does. A Pilot screen is 3200 bytes.

: Actually this is not a bad idea. Neal, do you have any plan to include a
: tutorial like Scribble in the professional version that would demonstrate the
: Forth language and PalmOS API at the same time?

Yes, a drawing program is one of the examples I'm preparing. It's going well!

Neal

Re: Quartus Event Driven Programming

Posted by [Matthias Schneider](#) on June 29, 1998 at 07:57:23:

In Reply to: *Re: Quartus Event Driven Programming* posted by Neal Bridges on June 25, 1998 at 14:25:37:

```
: :
: : : To handle system events, you need only call KEY or EKEY. KEY
: : : handles all events except 'keyboard' events, which are deciphered and left
: : on
: : : the stack. EKEY passes the first non-system event type to the stack, and
: : the
: : : EVENT word points to the incoming event itself.

: : I am trying to use EKEY in conjunction with the EvtGetPen-Systemcall to get
: : the actual x- and y-coordinates of the pen. I can't solve the problem because
: : the call of "EvtGetPen" results in an Fatal Error.

: : Could anyone describe a solution?
```

```
: Matthias, you don't need EvtGetPen. The pen coordinates are right inside the
: event itself. Try this code for retrieving pen down events and coordinates:
```

```
: event 2 cells + constant coords
: 1 constant PenDown
: 3 constant PenMove
:
: showpen
:   begin
:     ekey dup PenDown = swap PenMove = or
:     if coords 2@ . . cr then
:   again ;
```

```
: Neal
```

Hi Neal,

many thanks for your respond to my (now I realise it) very stupid question!
I strongly hope I've understood it now!

Matthias

Fatal Error when switching apps

Posted by [Mike T. Miller](#) on June 16, 1998 at 19:12:41:

If I bring up Quartus, then switch to the memopad, then switch back to Quartus I get the following fatal error:

HwrRes.c, Line 69, Form rsrc not found.

I've got a PPro w/1mb, 2.04 OS, Hackmaster turned off, launchpad turned off, and I've run recycle.

(Should I use this forum for bug reports or e-mail?)

Thanx,
mike

Re: Fatal Error when switching apps

Posted by [Neal Bridges](#) on June 17, 1998 at 00:12:15:

In Reply to: *Fatal Error when switching apps* posted by Mike T. Miller on June 16, 1998 at 19:12:41:

: If I bring up Quartus, then switch to the memopad, then switch back to
: Quartus I get the following fatal error:

: HwrRes.c, Line 69, Form rsrc not found.

: I've got a PPro w/1mb, 2.04 OS, Hackmaster turned off, launchpad turned off,
: and I've run recycle.

: (Should I use this forum for bug reports or e-mail?)

: Thanx,
: mike

This forum is fine for bug reports, I wish I could replicate your bug. How much free space do you have on the Pilot?

Neal

Re: Fatal Error when switching apps

Posted by [Erwin Schomburg](#) on June 17, 1998 at 01:33:40:

In Reply to: *Re: Fatal Error when switching apps* posted by Neal Bridges on June 17, 1998 at 00:12:15:

: : If I bring up Quartus, then switch to the memopad, then switch back to
: : Quartus I get the following fatal error:

: : HwrRes.c, Line 69, Form rsrc not found.

: : I've got a PPro w/1mb, 2.04 OS, Hackmaster turned off, launchpad turned off,
: : and I've run recycle.

: : (Should I use this forum for bug reports or e-mail?)

: : Thanx,
: : mike

: This forum is fine for bug reports, I wish I could replicate your bug. How
much
: free space do you have on the Pilot?

: Neal

If he has run Recycle (or DeFragger, doesn't matter), all bets re data integrity are off. Only half save (still no guarantee) way to run a defragger is in warm reset state of the machine (reset while page up is pressed).

/Erwin

/Erwin

Re: Fatal Error when switching apps

Posted by [Neal Bridges](#) on June 17, 1998 at 02:10:59:

In Reply to: *Re: Fatal Error when switching apps* posted by Erwin Schomburg on June 17, 1998 at 01:33:40:

: If he has run Recycle (or DeFragger, doesn't matter), all bets re data
: integrity are off. Only half save (still no guarantee) way to run a defragger
is
: in warm reset state of the machine (reset while page up is pressed).

: /Erwin

I didn't realize the defraggers had such a notorious reputation. I recommend running one on my page in order to gain enough contiguous memory for Quartus to allocate its workspace efficiently.

Re: Fatal Error when switching apps

Posted by [Erwin Schomburg](#) on June 17, 1998 at 11:58:10:

In Reply to: *Re: Fatal Error when switching apps* posted by Neal Bridges on June 17, 1998 at 02:10:59:

: I didn't realize the defraggers had such a notorious reputation. I recommend
: running one on my page in order to gain enough contiguous memory for Quartus
to
: allocate its workspace efficiently.

If you had followed the newsthreads on this (now dead, since PIII does not
require defrag)...

The joint understanding was that if an app leaves a dead or wild handle or does
memory handling its own way bypassing the OS traps, data corruption when running
a defragger is just a matter of chance, not necessarily in the misbehaving app
or its databases but randomly. Happened to me several times, without ever being
able to identify the culprit. Conclusive and ultimate indicator was the Memory
app crashing on invocation. I got lots fewer instances (if none) of corruption
when running a defrag

A) only when desperately needed and

B) on an uninitialized system (warm reset state).

/Erwin

Re: Fatal Error when switching apps

Posted by [Mike T. Miller](#) on June 17, 1998 at 10:27:00:

In Reply to: *Re: Fatal Error when switching apps* posted by Neal Bridges on June 17, 1998 at 02:10:59:

: : If he has run Recycle (or DeFragger, doesn't matter), all bets re data
: : integrity are off. Only half save (still no guarantee) way to run a
defragger

: is

: : in warm reset state of the machine (reset while page up is pressed).

: : /Erwin

: I didn't realize the defraggers had such a notorious reputation. I recommend
: running one on my page in order to gain enough contiguous memory for Quartus
to
: allocate its workspace efficiently.

Actually, the problem existed before I ran recycle. I've got 322k of free
memory.

mike

Re: Fatal Error when switching apps

Posted by [Neal Bridges](#) on June 17, 1998 at 23:33:30:

In Reply to: *Re: Fatal Error when switching apps* posted by Mike T. Miller on June 17, 1998 at 10:27:00:

: Actually, the problem existed before I ran recycle. I've got 322k of free
: memory.

: mike

If you could, try deleting Quartus from the memory app and reinstall, I'd like to know if the problem resurfaces.

Neal

Re: Fatal Error when switching apps

Posted by [mike t miller](#) on June 25, 1998 at 16:09:25:

In Reply to: *Re: Fatal Error when switching apps* posted by Neal Bridges on June 17, 1998 at 23:33:30:

: : Actually, the problem existed before I ran recycle. I've got 322k of free
: : memory.

: : mike

: If you could, try deleting Quartus from the memory app and reinstall, I'd like
: to know if the problem resurfaces.

: Neal

Sorry for the delay. I haven't had a chance to reinstall Quartus (my cradle is hooked to my Sparc at work and I've been working from home), but when I use switchhack to go from the memopad and Quartus I have no problem. I'll try reinstalling Quartus monday.

mike

Shareware

Posted by [Ed Tomlinson](#) on June 15, 1998 at 11:40:26:

Hi,

Realize you have put a lot of work into this... That being said what sort of shareware fee do you think is reasonable?

TIA

Ed

Re: Shareware

Posted by [Neal Bridges](#) on June 15, 1998 at 12:08:48:

In Reply to: *Shareware* posted by Ed Tomlinson on June 15, 1998 at 11:40:26:

: Hi,

: Realize you have put a lot of work into this... That being said what sort
: of shareware fee do you think is reasonable?

Hi, Ed. At present the beta system is free, and there will continue to be a free version of Quartus available even after the professional version goes on sale.

The professional version will have a few additional features, most notably the ability to generate stand-alone PRC files. I intend for this to be a commercial release, but nothing is nailed down yet.

In the interval, I'd appreciate any testing and code development that you, and other beta testers, can do-- feedback is key to producing a solid product.

NAB

Re: Shareware

Posted by [Chad Montplaisir](#) on June 15, 1998 at 16:39:21:

In Reply to: *Re: Shareware* posted by Neal Bridges on June 15, 1998 at 12:08:48:

: In the interval, I'd appreciate any testing and code development that you, and
: other beta testers, can do-- feedback is key to producing a solid product.

What time frame are you looking at getting the professional (any version that will write PRC's) into the market. Being an OS/2 user, I've not found one

product worth the effort to develop with. This holds my greatest potential.

Sincerely,
Chad Montplaisir

Re: Shareware

Posted by [Neal Bridges](#) on June 16, 1998 at 01:02:07:

In Reply to: *Re: Shareware* posted by Chad Montplaisir on June 15, 1998 at 16:39:21:

: What time frame are you looking at getting the professional (any version that
: will write PRC's) into the market. Being an OS/2 user, I've not found one
: product worth the effort to develop with. This holds my greatest potential.

Chad, it's about three weeks away, but that's unofficial.

Search Engine now available online

Posted by [Neal Bridges](#) on June 14, 1998 at 20:27:56:

I've just installed a search engine for this web site; give it a try!

- [Search This Web Site!](#)

ShiftHack and writing Forth

Posted by [Neal Bridges](#) on June 13, 1998 at 15:09:54:



If you haven't tried my ShiftHack, download it and give it a go. It defeats the auto-capitalization feature of the Pilot, so your Forth programs aren't littered with inappropriate capitals.

- [ShiftHack](#)

A few Frequently Asked Questions

Posted by [Neal Bridges](#) on June 12, 1998 at 18:40:50:

Q: Can I use the PilotFORTH documentation as a starter until the Quartus docs are complete?

A: Yes; most (not all, but most) of the system is functionally similar to PilotFORTH.

Q: Will there really be a way of creating 'executables', ie: PRC files?

A: There will, in the commercial release. Standalone PRCs, no run-time required.

Q: As my application will (of course) use the Palm Pilot systrap routines (ie: screen handling, and file-record I/O), will the interace to these routines be easy? Easier than in C?

A: Systrap interfacing is transparent in Quartus. For instance
10 20 100 80 WinDrawLine
draws a line on the screen.

Q: Switching between the memopad and Quartus is awkward, as are some of the special Graffiti characters. Is there anything that helps?

A: Try SwitchHack (from PilotGear), it helps going back and forth for editing, and SymbolHack for the special characters.

Q: What's the word on case sensitivity, space sensitivity, etc?

A: Quartus is not case (or accent) sensitive when matching word names or filenames. Parse is pArSè is PARSE.
Spaces and tabs are interchangeable between Forth words in memos.

NOTE: Quartus has an 80-character input buffer. When reading source from a memo, no single line of source can be longer than 80 characters. This simply means you should end your lines in source files with a graffiti Enter, like

hitting Enter on a PC keyboard.

Q: Is there any way to read/write 32-bit memory addresses? I am thinking particularly of accessing the LCD controller registers which are around address FFFF0000, and also writing directly to the LCD memory area.

A: Absolutely; @a !a c@a c!a all take double-word 32-bit addresses.

Q: Does Quartus use the dynamic heap for the Forth dictionary, or does it write directly into a database record? Put another way, is there any chance that I can blow away the other databases on my Pilot if I mess up in Forth (barring the use of database-writing systraps, of course)?

A: Quartus writes the dictionary into a database record, but does so with the database-writing systraps; you are in no danger of overwriting anything but the Forth code space by creating Forth definitions.

Re: A few Frequently Asked Questions

Posted by [Charles Mott](#) on June 13, 1998 at 15:33:53:

In Reply to: *A few Frequently Asked Questions* posted by Neal Bridges on June 12, 1998 at 18:40:50:

: Q: Does Quartus use the dynamic heap for the Forth dictionary, or does it write

: directly into a database record? Put another way, is there any chance that I
: can blow away the other databases on my Pilot if I mess up in Forth (barring the

: use of database-writing systraps, of course)?

: A: Quartus writes the dictionary into a database record, but does so with the
: database-writing systraps; you are in no danger of overwriting anything but the

: Forth code space by creating Forth definitions.

What memory model does the PalmPilot OS use? Is it a single shared address space like MacOS, or is there some level of memory protection so that a FORTH program can't write into the databases unless it uses the database function calls?

Re: A few Frequently Asked Questions

Posted by [Neal Bridges](#) on June 13, 1998 at 15:46:34:

In Reply to: *Re: A few Frequently Asked Questions* posted by Charles Mott on June 13, 1998 at 15:33:53:

```
: What memory model does the PalmPilot OS
: use? Is it a single shared address space like
: MacOS, or is there some level of memory
: protection so that a FORTH program can't
: write into the databases unless it uses the
: database function calls?
```

PalmPilot RAM is divided into dynamic and storage heaps. There's only one dynamic heap, and that's the one that ! and @ write and read from.

Programs and application data reside in storage heaps, which can only be written to by using the database sysstraps (i.e. DmWrite). Any attempt to write them directly is trapped by the system.

MathLib access from PilotFORTH/Quartus (from Usenet)

Posted by [Neal Bridges](#) on June 12, 1998 at 10:20:13:

In article ,
Charles Mott wrote:

```
>
> I've been reading up on accessing shared libraries, and
> it appears that I need to know the numeric values of three
> trap numbers listed in mathlib.h:
>
> sysLibTrapOpen
> sysLibTrapClose
> sysLibTrapCustom
>
> These seem to be symbolic values not defined within the
> MathLib sources, but part of a development environment I
> don't have. If anyone can look up what these trap numbers
> are, I would appreciate it. I'm programming with
> PilotForth.
```

```
// Library traps start here and go up by 1's
#define sysLibTrapBase 0xA800 // 43008 decimal [NAB]
typedef enum {
sysLibTrapName = sysLibTrapBase,
```

```
sysLibTrapOpen,  
sysLibTrapClose,  
sysLibTrapSleep,  
sysLibTrapWake,  
sysLibTrapCustom  
} SysLibTrapNumber;
```

thus,

```
hex  
: sysLibTrapName 0A800 systrap ;
```

and so forth.

Thoughts about a fatal HotSync error

Posted by [Neal Bridges](#) on June 11, 1998 at 20:52:48:

A Quartus user told me recently that he started Quartus, pressed the HotSync button on the cradle, and got a Fatal Error.

This struck me as odd, so I asked him if he'd tried it with his HackMaster extensions disabled. He disabled them, put them back one at a time, and was unable to reproduce the problem.

After thinking about it awhile, I think possibly what happened is this:

When Quartus first runs, it allocates a workspace in one of the storage heaps. This may well cause a reorganization of that heap, and an ill-behaved HackMaster hack might lose touch with itself, resulting in a crash at HotSync time.

If anybody else has seen this happen, let me know.

Thanks!

Re: Thoughts about a fatal HotSync error

Posted by [Jim Deakin](#) on June 26, 1998 at 12:30:16:

In Reply to: *Thoughts about a fatal HotSync error* posted by Neal Bridges on June 11, 1998 at 20:52:48:

I've had it happen several times in a fairly full PPPro. I've removed some items since, and when I just tried it again I couldn't reproduce it. I do have 6 hacks installed as well.

: A Quartus user told me recently that he started Quartus, pressed the HotSync button on the cradle, and got a Fatal Error.

: This struck me as odd, so I asked him if he'd tried it with his HackMaster extensions disabled. He disabled them, put them back one at a time, and was

unable to reproduce the problem.

: After thinking about it awhile, I think possibly what happened is this:

: When Quartus first runs, it allocates a workspace in one of the storage heaps. This may well cause a reorganization of that heap, and an ill-behaved HackMaster hack might lose touch with itself, resulting in a crash at HotSync time.

: If anybody else has seen this happen, let me know.

: Thanks!

Systrap and Systrap Details Docs

Posted by [Neal Bridges](#) on June 11, 1998 at 08:13:06:

I haven't mentioned them directly on the Quartus page, but on [my home page](#) I've got two DOC files 1) listing all systraps by number and 2) showing the detailed C function declaration for each systrap.

Systrap calls under Quartus take their parameters from right to left, for instance:

Under C, WinDrawLine is declared as

```
void WinDrawLine(SWord x1, SWord y1, SWord x2, SWord y2)
```

So, for example, the C code:

```
WinDrawLine(120, 80, 20, 10)
```

in Quartus is:

```
10 20 80 120 WinDrawLine
```

For those systraps defined as having return values, Quartus automatically places the returned value on the Forth stack.

Please Resend! Mail server screwup!

Posted by [Neal Bridges](#) on June 10, 1998 at 23:42:10:

My mail was trashed tonight by some random evil--

Mail from cfkdw@ux1.cts.eiu.edu (Keith Wolcott?) was unreadable, and there may have been others. If you sent me mail today, please send it again.

Thanks.

Lyrics to "99 Bottles of Beer"

Posted by [Neal Bridges](#) on June 10, 1998 at 12:46:45:

```
\ beer 98.6.5 1:01 pm Neal Bridges
\ Lyrics to "99 Bottles of Beer"

: #beers ( n -- n )
DUP 0= IF ." No more "
ELSE DUP . THEN
." bottle" DUP 1 <> IF ." s" THEN
." of beer" ;

: bottles ( beers -- )
?DUP 0= IF EXIT THEN
#beers ." on the wall," CR
#beers ." ," CR
." Take one down, pass it around," CR
1- #beers ." on the wall." CR CR
RECURSE ;

99 bottles
```

Using Quartus to retrieve the HotSync username

Posted by [Neal Bridges](#) on June 10, 1998 at 11:45:35:

```
\ syncname 98.6.10 11:44 am NAB
create NameBuf 41 chars allot

: UserName ( -- c-addr u )
0. 0. NameBuf >abs 0. 0. 0.
DlkGetSyncInfo drop
NameBuf dup >abs StrLen ;

cr .( Username: ) UserName type cr
```

Database access...

Posted by Jos on June 10, 1998 at 09:34:05:

Can you read/write to the other pilot databases? For example, say i have a programme that needs to know what i have planed today, can it go into the date book database and get that info?

Thanks
jos

Re: Database access...

Posted by [Neal Bridges](#) on June 10, 1998 at 10:23:17:

In Reply to: *Database access...* posted by Jos on June 10, 1998 at 09:34:05:

: Can you read/write to the other pilot databases? For example, say i have a programme that needs to know what i have planed today, can it go into the date book database and get that info?

Yes, database access is available in Quartus. I'll be posting sample code shortly that writes and reads memos from the MemoPad, using the following systrops:

- DmOpenDatabaseByTypeCreator
- DmNewRecord
- MemHandleLock
- DmWrite
- MemPtrUnlock
- DmReleaseRecord
- DmCloseDatabase

BTW, has 3Com officially documented the DateBook database format?

Re: Database access...

Posted by [Erwin Schomburg](#) on June 10, 1998 at 13:57:24:

In Reply to: *Re: Database access...* posted by Neal Bridges on June 10, 1998 at 10:23:17:

: BTW, has 3Com officially documented the DateBook
: database format?

Not AFAIK, but if you want to get to the "real" intrinsics, I think an e-mail to C.E.S. Dewar of DateBk3 fame could get you enlightenment. /Erwin

Backlight access in Quartus

Posted by [Neal Bridges](#) on June 10, 1998 at 09:00:40:

Here's the PilotFORTH backlight program, updated for Quartus. Note the absence of the word 'systrap' -- in Quartus the name of the PalmOS systrap can be used directly.

```
\ backlight 98.6.10 8:55 am NAB
: backlight ( bool -- )
>byte true HwrBacklight drop ;

: backlight? ( -- bool )
0 dup HwrBacklight ;
```

Updated docs now in the distribution .zip

Posted by [Neal Bridges](#) on June 10, 1998 at 00:34:10:

I've updated the documentation, added an example and a few other bits and pieces. Download the distribution .zip again to get the updated versions.

I'll be breaking the docs out and making them available online shortly.
