

This document holds all the Quartus Handheld System discussion forum messages from October 9, 1999 to 6:10pm, March 17, 2000.

The links in the document all work -- but please don't try and post new messages to the Forum via the buttons in this document, as the subject threads may eventually be archived from the web site.

Enjoy!

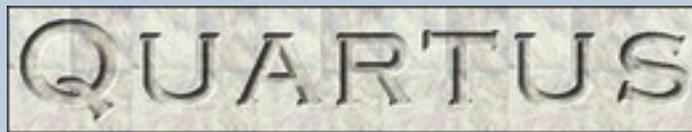
Neal Bridges
Quartus Handheld Systems
<http://www.quartus.net>

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Enjoy!

Neal Bridges
Quartus Handheld Systems
<http://www.quartus.net>



Discussion Forum

- [General](#) March 15 - 10:58 am

Questions and discussion about Quartus products.

- [Quartus Forth \(PalmOS version\)](#) March 17 - 05:03 pm

Questions and discussion about the Quartus Forth on-board compiler for Palm/Visor/WorkPad handhelds.

- [Quartus Forth \(Royal daVinci version\)](#) March 15 - 07:42 pm

Questions and discussion about the Royal daVinci version of the Quartus Forth on-board compiler.

- [Other Quartus Products](#) March 9 - 11:49 am

All other (non-Forth) Quartus products.

- [Everything else!](#) March 13 - 10:43 am

Anything you'd like to talk about!

[Back to the Quartus Home Page](#)

NOTE: When posting Forth source code, to preserve indentation, format it using the "`\pre{}`" tag like this:

```
\pre{
: hello
  \ A simple message:
  ." Hello World!"
  10 0 do
    i .
  loop cr
;
}
```

If you wish to include a } character, enter it as: `\}`

General

[Quartus Handheld Software: Discussion Forum: General](#)

Welcome to *General*. You may enter any of the discussions below by clicking on the appropriate link. Or, to start a new discussion of your own, click on the "Create New Conversation" button.

- [E-mail](#) March 15 - 10:58 am
- [Copy and Paste of Forum Text](#) March 13 - 04:55 pm
- ["Create New Conversation" buttons moved](#) March 13 - 09:55 am
- [Search section enhanced!](#) February 24 - 03:08 pm
- [Q4th on the SPT-1700 \(Symbol Technologies Industrial Palm\)](#) February 21 - 11:45 am
- [Size of a created standalone app?](#) February 12 - 05:30 pm
- [Total newbie](#) February 11 - 01:56 pm
- [A Complete Quartus Forth Glossary](#) February 11 - 12:29 pm
- [I'm travelling! \(January 8th -- January 21st, 2000\)](#) January 21 - 06:26 pm
- [Is it possible to get rid of lighthack once it's added?](#) January 4 - 02:19 am
- [Calling all idle Programmers](#) December 30 - 06:40 pm
- [How to import and export text easily into and from the Palm emulator](#) December 13 - 12:22 am
- [NOTE: Scheduled downtime for Quartus.net on December 6th, 1999](#) December 8 - 10:47 am
- [Latest Release of RsrcEdit V1005](#) November 19 - 10:49 pm
- [A Quartus promotional microbutton is now available.](#) November 4 - 01:37 am
- [Any trouble with the V3.3 upgrade for Pilot?](#) March 9 - 11:15 am
- [Weekend silence](#) November 1 - 09:16 am
- [Recommended Books page now available!](#) October 28 - 12:50 pm
- [Welcome to the new site!](#) November 1 - 06:50 pm
- [Search engine now available](#) October 12 - 07:14 pm
- [Quartus users / support for JDF](#) October 14 - 09:12 am
- [I'll be at PalmSource 99!](#) October 14 - 10:08 pm
- [About PalmSource '99!](#) October 27 - 02:34 pm
- [Speeding up the Palm Vx with StreakHack!](#) October 26 - 09:06 am

E-mail

[Quartus Handheld Software: Discussion Forum: General: E-mail](#)

By [Jim Hendricks \(Jimh\)](#) on Wednesday, March 15, 2000 - 08:29 am:

Neal,

Just wondering if you got my e-mail response for the Analog Clock code.

Jim

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 08:51 am:

Hi Jim -- yes, and I responded. I'll re-send.

Neal

By [Jim Hendricks \(Jimh\)](#) on Wednesday, March 15, 2000 - 09:13 am:

OK, I never got the response, Thanks...

By [Jim Hendricks \(Jimh\)](#) on Wednesday, March 15, 2000 - 10:39 am:

Neal, I'm wondering if we're having some problems on the e-mail, I haven't received your re-send. I for some reason there's an e-mail glitch between you and me, you can send the response to jimh_dbsoft@hotmail.com, that's my travel e-mail that all my normal e-mail is forwarded to but I can receive on it direct.

Thanks, Jim

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 10:46 am:

I'm not in front of my primary terminal, Jim; I'll have to recompose my note and send it shortly.

Neal

By [Jim Hendricks \(Jimh\)](#) on Wednesday, March 15, 2000 - 10:58 am:

Righto

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Copy and Paste of Forum Text

Quartus Handheld Software: Discussion Forum: General: Copy and Paste of Forum Text

By **Bill McCarthy** on Thursday, March 9, 2000 - 06:25 pm:

I marked all the text of the hello program, in the intro to the forums, and clicked on copy. When I pasted the copied text to one of my editors (I tried CRiSP, Preditor and VIM), the code shows up as one line.

I also tried this with MS Word (I'm running NT). It showed up on separate lines but the leading spaces were missing.

What's the secret for copy and paste from Forum text?

Bill McCarthy

By **Neal Bridges (Nbridges)** on Thursday, March 9, 2000 - 07:01 pm:

I think it depends on your browser, Bill. Netscape Communicator 4.5 copies them properly, with line-breaks.

Neal

By **Garth T Kidd (Garth)** on Sunday, March 12, 2000 - 04:45 pm:

Aha! I commented on this elsewhere. The Forum software renders backslash-pre-opencurlbrace with lots of BR where simple linefeeds should be. With MSIE, that breaks copy and paste.

Solution: alter the forum software. There's no way you're going to get MS to change their software in a finite amount of time.

By **Neal Bridges (Nbridges)** on Sunday, March 12, 2000 - 05:30 pm:

I'll put it on my list to look at. For the short-term, however, a simple solution is to use Netscape to browse the forum. It has no problems copying examples from messages.

Neal

By **Jim Hendricks (Jimh)** on Monday, March 13, 2000 - 09:43 am:

Garth, may have come with a solution for this.

Try pasting into FrontPage Express, it honors the copied BR tags.

Jim

By **Garth T Kidd (Garth)** on Monday, March 13, 2000 - 04:55 pm:

Ewww! :)

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Password:

E-mail:

"Create New Conversation" buttons moved

[Quartus Handheld Software: Discussion Forum: General](#): "Create New Conversation" buttons moved

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 9, 2000 - 11:31 am:

Further to an excellent suggestion by Jim Hendricks, I have moved the "Create New Conversation" buttons to the top of all the subtopic lists. This will make it much faster to start a new thread -- you won't have to wait for the entire page to load.

Neal

By [E.](#) on Thursday, March 9, 2000 - 08:40 pm:

Is that what caused all forus to show up (at least to us non-Javascript people) as being unread?

My first thought (after the first 2 forums I checked didn't have anything new) was that some genius had spammed all the forums, and you had removed the messages.

Of course, that's probably a side-effect of the new job. *snicker*

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 9, 2000 - 09:03 pm:

Ah, my regeneration of the forums likely caused the message links to turn back to an unclicked colour, yes.

Neal

By [Jim Hendricks \(Jimh\)](#) on Friday, March 10, 2000 - 08:32 am:

That's why I like to have a Username and Password on the system, I don't have to rely on the color of a converstation to know if I have read it, instead I can use the New Message/Username Password option which shows messages since the last time I checked. You have to ask Neal though for the account.

Jim

By [Garth T Kidd \(Garth\)](#) on Sunday, March 12, 2000 - 04:56 pm:

I just wish the Forum software could remember that you've authenticated. Having to do it once per post is a little boring.

By [Jim Hendricks \(Jimh\)](#) on Monday, March 13, 2000 - 09:23 am:

I think this is a feature of the comercial discus software (discus is the software Neal is using to present this discussion forum).

Jim

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 09:44 am:

I believe you are correct, Jim.

I'd rather focus on product development at this stage, though, instead of spending time re-installing and re-customizing the Forum software. It may not have every feature everyone would like to have, but it's extremely functional and more than adequate.

Neal

By [Jim Hendricks \(Jimh\)](#) on Monday, March 13, 2000 - 09:55 am:

GO Neal GO!

I would also agree that the forum is more than adequate, that's why I chose it for our companies Intranet forums. For my use though, I may need to upgrade to the commercial discuss since some of the features are desireous under our circumstances.

Jim

Add a Message

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Password:

E-mail:

Search section enhanced!

[Quartus Handheld Software: Discussion Forum: General: Search section enhanced!](#)

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 24, 2000 - 03:08 pm:

The "Search" section of this site has been enhanced to include a gateway to Google, one of the best search engines on the web.

Neal

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

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E-mail:

Q4th on the SPT-1700 (Symbol Technologies Industrial Palm)

Quartus Handheld Software: Discussion Forum: General: Q4th on the SPT-1700 (Symbol Technologies Industrial Palm)

By [David Shepherd](#) on Friday, February 18, 2000 - 01:56 am:

Hi all.

We are not happily registered Q4th devotee's, yet!

However, we are looking to develop some applications in-house using the Symbol Technologies SPT-1700 handheld running the PalmOS.

Most everyone else appears to be using Satellite Forms, Code Warrior or some such software to develop applications incorporating the SE900 barcode scan engine. Satellite Forms has an extension for the SPT1500 (and I assume 1700).

1). Has anyone used the SPT-1500 or SPT-1700 with Quartus and can shed any light on the interface to the scan engine?

2). The intended application will involve heavy use of tables, and databases, etc with reasonable amounts of data (reasonable = ~1000 records of ??? fields for starters). Any comments? (ie. are we biting off more than we can chew?)

By [Neal Bridges \(Nbridges\)](#) on Friday, February 18, 2000 - 11:44 am:

I worked with a fellow last year on a SPT-1700 app; it was successful. I don't have a Symbol device myself, so my hands are a bit tied, but I'd be glad to help.

As to whether you're biting off more than you can chew, that's hard to say without knowing where you're coming from and what you want to wind up with.

Neal

By [David Shepherd](#) on Sunday, February 20, 2000 - 08:22 am:

Thanks for your time, Neal.

I have been gathering as much info as I can on the PalmOS and spent the weekend reading the PalmOS Programmers Companion which has proved enlightening.

My main concern is that I have not been able to find any info on the actual software interface to the Scan Engine. I have the spec. sheet on the SE900 from Symbol but it gives nothing away.

It is now the only detail missing which is standing in the way of making the final decision to proceed. I have downloaded everything on the Quartus and PalmOS SDK etc that I can gain access to and believe I now have enough to be able to program - your past success with the SPT-1700 app is an encouragement.

Is it possible to obtain the info for the Scan Engine?

There seem to be a lot of questions re: conduit programming. Is this a problematic area?

As for trying to chew too much ... of course we are! ... this is our first contact with the Palm devices ... the learning curve is looking rather steep!! But, we shall try anything once.

Sorry if this is too verbose ... it is also my first time working on the net.

David

By [Neal Bridges \(Nbridges\)](#) on Monday, February 21, 2000 - 11:45 am:

The Symbol's functions are accessible through a library, as I recall. The developer information is available from the Symbol site.

I'm handicapped in this area by not having a Symbol device myself.

I'm not sure what you mean by conduit programming -- conduits are written on the desktop side, in C or similar. However, Quartus Forth version 1 does not presently support launch codes, so Quartus Forth apps cannot yet do special interfacing at HotSync time. There are other ways to get data to the desktop, however, and Quartus Forth version 2 will address the launch code issue.

Neal

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Size of a created standalone app?

[Quartus Handheld Software: Discussion Forum](#): [General](#): Size of a created standalone app?

By [Rick Flower](#) on Saturday, February 12, 2000 - 04:31 pm:

Is there a way to determine how large a standalone application will be when it is created (for registered versions only), including and excluding the resources associated with the application. It's more of a curiosity than anything.. I'm awaiting my registration code to allow me to create standalone PRC's, so I can't really play around yet..

Any comments appreciated!

By [Neal Bridges \(Nbridges\)](#) on Saturday, February 12, 2000 - 05:30 pm:

Did you register recently Rick? I haven't seen your registration yet -- let me know via e-mail where and when you registered and I'll follow it up.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Total newbie

[Quartus Handheld Software: Discussion Forum: General: Total newbie](#)

By [Bill Jones](#) on Friday, February 11, 2000 - 12:35 pm:

I learn best by running a program and looking at the code that was used to generate it. All of the files in the library seem to be only a fragment that is to be put into the larger picture, yet i can't just dload it, run it, see what it does and then mess around with the code. for instance, i would like to see an exmple of how to simply read several lines from a text file and display it on the screen. i looked but the closest i could find was db-example which i could compile but couldnt run. perhaps we could have a library area with very rudimentary programs with simple examples of small steps (i.e. the hello world program) that are designed to show only one small function.

by the way, how would i write a program to read from a text or memo file (whatever is recommended) and simply display it on the screen?

By [Neal Bridges \(Nbridges\)](#) on Friday, February 11, 2000 - 01:56 pm:

memo.txt contains a 'dir' example that reads the first line of each memo and displays it on the screen, that might help.

Also look at the enhanced *newmemo.txt* sources.

Neal

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Password:

E-mail:

A Complete Quartus Forth Glossary

[Quartus Handheld Software: Discussion Forum](#): [General](#): A Complete Quartus Forth Glossary

By [LGLisle](#) on Tuesday, January 25, 2000 - 10:22 am:

Neal,

Does a complete list of ALL resident words in QForth exist? If so, where?

I'm afraid I have trouble remembering, is sxxxg a Standard Core word, a Standard extension, a Palm specific word (systrap), a Quartus specific word, a Library word, etc.

If it doesn't exist, and you feel it is too much work, would you be willing to support my efforts to build it? I would like to see a list with the Name, Category, (ANSI #), Stack effect, and Description when needed.

--- Greg

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 25, 2000 - 11:08 am:

It's in the manual -- Specific Words. It covers all the additional words; if any are missing do let me know.

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 25, 2000 - 02:23 pm:

Ah, reading with comprehension this time -- you want a master list of all resident words, Standard, non-standard, library and systrap. Hmm. The non-standard and systrap are in the manual; all you'd need to add is a list of library words and Standard words. So I suggest if you'd like to tackle it, start with the manual section and build from that.

Neal

By [Jim Meadows](#) on Friday, February 11, 2000 - 10:13 am:

If you build it ... they will use it!

Greg let us know if you are successful. I know it would be a helpful tool to me (and I even helped create a Forth OS for process control micro's back in the 80's)

By [LGLisle](#) on Friday, February 11, 2000 - 12:29 pm:

Gee, All I need now is another of those Round Tuits. :-) Given that I am a list nut , I'll probably do it as soon as I clear away some other issues, like a new kitchen.

--- L. Greg Lisle

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

I'm travelling! (January 8th -- January 21st, 2000)

[Quartus Handheld Software: Discussion Forum](#): [General](#): I'm travelling! (January 8th -- January 21st, 2000)

By [Neal Bridges \(Nbridges\)](#) on Saturday, January 8, 2000 - 10:47 am:

From tonight (January 8, 2000) through the 21st, I'll be travelling in France and Egypt. Quartus Forth registrations will be still continue to be handled on a timely basis, and I myself will be checking both email and this forum every couple of days.

Until January 21st, for any registration-related problems, please write to quartus@interlog.com. For all other discussions and questions, please continue to direct them first here to the Discussion Forum, for the widest audience, or if necessary via email to support@quartus.net, and I'll respond as quickly as possible.

Neal

By [Jim Hendricks](#) on Saturday, January 8, 2000 - 01:56 pm:

Enjoy the trip Neal, you deserve it!

Jim

By [Trevor Steele](#) on Monday, January 10, 2000 - 05:26 am:

Yes indeed Neal, I hope you have a great time :)

Trevor

By [Neal Bridges \(Nbridges\)](#) on Thursday, January 13, 2000 - 06:37 am:

Hi! Just checking in from Cairo. Having a great time!

Neal

By [Paul D'Amelio](#) on Thursday, January 13, 2000 - 03:49 pm:

Hi Neal
I'm glad your having a great time. I'd like to talk to you at some point. Let me know when you're available.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 18, 2000 - 09:50 am:

Hi Paul. If it's urgent, call me at the hotel number I provided; otherwise I'll try you again today at the office.

Neal

By [damelio](#) on Tuesday, January 18, 2000 - 02:40 pm:

Hi Neal

No it's not urgent so I won't call you at the hotel. I just want to bring you up to speed regarding the changes around here. Try calling at 0830 EST any day this week.

Take care

Paul D

By [Bruce MacMillan](#) on Wednesday, January 19, 2000 - 03:55 pm:

Neal,

Hope that you are having a great trip! Paul showed me some of your stuff. Very interesting!

**Have fun,
Bruce**

By [Neal Bridges \(Nbridges\)](#) on Friday, January 21, 2000 - 06:26 pm:

Hey, thanks. I'm back now! I have some jet lag to recover from, I'll catch up here when I've done that.

Neal

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Is it possible to get rid of lighthack once it's added?

[Quartus Handheld Software: Discussion Forum](#): [General](#): Is it possible to get rid of lighthack once it's added?

By [Amy](#) on Monday, January 3, 2000 - 04:46 am:

I downloaded hackmaster and lighthack onto my palm pilot, and once it was there I decided I preferred the normal screen lighting rather than the inverted lighting you get with lighthack. I've done everything possible to get rid of it, but it just won't go away. Does anyone know what I can do?

When I go to the hackmaster icon, I checkmark the box next to the lighthack extension and hit "uninstall all." But when I do that, it just removes the checkmark I put in the box and leaves lighthack there!

I've also hit the "reset" option, but lighthack is still there once I've reset my palm. I don't know what else to do. I'd appreciate any help. Thanks!

By [Neal Bridges \(Nbridges\)](#) on Monday, January 3, 2000 - 08:39 am:

After de-activating a HackMaster module, you can delete it from the "Delete" menu option in the main Application Launcher menu.

I'm guessing that your screen is still inverted. If this is the case, what has happened is that you have turned on LightHack in HackMaster, activated the backlight, and then turned off LightHack while the backlight was still on -- so it never had a chance to de-invert it. To fix that, simply switch LightHack back on from within HackMaster, turn the backlight on and then off, and then switch LightHack off.

Neal

By [Amy](#) on Tuesday, January 4, 2000 - 02:19 am:

Thanks, Neal. Your solution to my lighthack problem worked perfectly! I really appreciate your help!

Amy

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Calling all idle Programmers

[Quartus Handheld Software: Discussion Forum](#): [General](#): Calling all idle Programmers

By [Dale Chapman](#) on Thursday, December 30, 1999 - 06:40 pm:

I have an idea for simple but indispensable app or hack for the palmOS that no one has tackled yet. It would be especially useful to mobile professionals, and thus I imagine quite, saleable.

I, alas, am a graphic designer and not a programmer, and would spend a lot of time stumbling around an environment even as elegant as Quartus Fourth.

Contact me if you are interested at moxie@wwics.com

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

How to import and export text easily into and from the Palm emulator

[Quartus Handheld Software: Discussion Forum: General](#): How to import and export text easily into and from the Palm emulator

By **[Philippe de Rochambeau](#)** on Sunday, December 12, 1999 - 03:19 pm:

Does anyone know how to easily import/export text easily into/from the Palm emulator?

Is there any kind of utility that allows you to do that?

Philippe de Rochambeau

By **[Erwin Schomburg](#)** on Monday, December 13, 1999 - 12:22 am:

Databases in doc format you can just drop into POSE, the version 3.x POSE also has a menu item to export databases.

/Erwin

Add a Message

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E-mail:

NOTE: Scheduled downtime for Quartus.net on December 6th, 1999

[Quartus Handheld Software: Discussion Forum: General](#): NOTE: Scheduled downtime for Quartus.net on December 6th, 1999

By [Neal Bridges \(Nbridges\)](#) on Saturday, November 20, 1999 - 12:48 pm:

The datacenter that houses Quartus.net will be relocating on December 6th. For a short time during that day, this site will be unavailable.

Here are details:

pair Networks, Inc. is pleased to announce that it will be moving into its new world-class datacenter facilities on Monday, December 6th.

Full details of the new datacenter are available at: <http://www.pair.com/Move/> (please note that this is a capital "M")

The impact to customers is that on that day, each server will be down for three to six hours - no longer unless something unusual happens. During the time a server is down, sites hosted on that server will be inaccessible. Visitors who attempt to reach those sites will either receive a "DNS failure" error, or "Site unreachable". Because of the relatively short duration of the outage, this is the only technically feasible method of completing the move.

During the move, there is a period during which our network will be entirely down. It is also possible that problems will arise in bringing connectivity online at the new facility. To cover these cases, we will be posting updates at the following non-pair URL throughout the day: <http://pair-is-moving.com/>

The new facility will provide improved cooling, expansion space, fiber redundancy, and battery capacity, among other benefits. This step is crucial to the growth of pair Networks, and will support ten years of growth. The new datacenter is owned by pair Networks, and is not part of any larger center. We continue to control our own network and equipment.

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 4, 1999 - 02:09 pm:

Repeating the earlier message for those who may have missed it:

The datacenter that houses Quartus.net will be relocating on Monday, December 6th. For a short time during that day, this site will be unavailable.

Here are details:

pair Networks, Inc. is pleased to announce that it will be moving into its new world-class datacenter facilities on Monday, December 6th.

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By [Neal Bridges \(Nbridges\)](#) on Monday, December 6, 1999 - 02:17 pm:

And we're back online! Let me know if you have any difficulties connecting with this site.

Neal

By [Erwin Schomburg](#) on Tuesday, December 7, 1999 - 04:25 am:

This is a "Keyboard not present error, press F1 to continue" type of posting, isn't it?

8-)

May the Forth be with you!

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 7, 1999 - 08:15 am:

Well, 'problems' can cover more than just not being able to connect at all. :)

Neal

By [Jim Hendricks](#) on Tuesday, December 7, 1999 - 11:00 am:

The site has been extremely slow, I have timed out so many times, it took me 2 hours just to finally list this discussion so I could post my comment. I have verified my internet access to all other sites is fine. Just thought you might want to check it out.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 7, 1999 - 11:03 am:

Thanks Jim. It was fast like the wind last night, but this morning runs very slowly. I have

complained to the hosting service; hopefully they can resolve the issue.

Sorry for the inconvenience.

Neal

By **Erwin Schomburg** on Tuesday, December 7, 1999 - 11:57 am:

Apart from the normal delay in initial response from servers the other side of the pond, I experience normal to good response times.

/Erwin

By **althomas** on Tuesday, December 7, 1999 - 12:24 pm:

1223 here in VT; extremely slow, site specific. Happy holidays to all.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 7, 1999 - 05:51 pm:

Regarding the slowdown, some additional information is here:

<http://support.pair.com/notices/current.html>

They are working hard to resolve the issue; already the situation appears to be greatly improved.

Let me know!

Neal

By **althomas** on Tuesday, December 7, 1999 - 09:07 pm:

2100 in VT now, and the site is back to pleasingly quick.

By [Jim Hendricks](#) on Wednesday, December 8, 1999 - 09:06 am:

Ah, yes, I can finally lurk again! Thanks Neal for taking care of it!

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 8, 1999 - 10:47 am:

Glad it's working, Jim. Let me know if you have any further trouble.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Latest Release of RsrcEdit V1005

[Quartus Handheld Software: Discussion Forum](#): [General](#): Latest Release of RsrcEdit V1005

By [E. Ross Helton](#) on Friday, November 19, 1999 - 10:12 pm:

Hi all;

RsrcEdit is not up to Version 1005.

Make it a good day!

Ross

By [Neal Bridges \(Nbridges\)](#) on Friday, November 19, 1999 - 10:49 pm:

I'm guessing you mean "now". :)

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

A Quartus promotional microbutton is now available.

[Quartus Handheld Software: Discussion Forum: General](#): A Quartus promotional microbutton is now available.

By [Neal Bridges \(Nbridges\)](#) on Thursday, November 4, 1999 - 01:37 am:

If you'd like to place a link on your site to Quartus.net, here's a microbutton (88x31) that you

can use: .

Thanks!

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Any trouble with the V3.3 upgrade for Pilot?

[Quartus Handheld Software: Discussion Forum](#): [General](#): Any trouble with the V3.3 upgrade for Pilot?

By [E. Ross Helton](#) on Tuesday, November 2, 1999 - 05:58 pm:

Hi;

Have upgraded to V3.3 of the Pilot O/S, now for some reason it has to be reset everytime I turn it on. Just takes a paperclip reset, but it is a pain. Anybody have that problem? Just started doing that the last few days.

Does anyone know of any software that might have helped get this happening?

Make it a good day!

Ross

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 2, 1999 - 06:28 pm:

Hmm, haven't heard of that happening. Odds are good you've got something in there that doesn't like OS3.3 -- perhaps a hack? I'd start there, disabling them to see if the problem goes away.

Neal

By [E. Ross Helton](#) on Tuesday, November 2, 1999 - 06:42 pm:

Hi Neal;

You're a good man Charlie Brown! I had tried some of the programs which I thought were the problem and even some of the new hacks that I had put on in the last few months.

However, leave it to you to nail it down! It was a hack and it was the Daylight savings time hack. Which makes sense considering what just happened. I've had this hack forever, and never had a problem before.

Make it a good day!

Ross

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 2, 1999 - 06:49 pm:

Glad you got it sorted!

Neal

By [E. Ross Helton](#) on Tuesday, November 2, 1999 - 07:26 pm:

Hi Neal;

Never thought about what I said it the discussion about Daylight savings, time maybe you don't use it in Canada. I wonder why we really have it, it is something long past its use.

Anyway last Sunday was the day for the change for the winter part, and that is when my Pilot started acting up. Hadn't put those two things together until you mentioned hacks. I had removed a couple of programs and two hacks that I didn't need, but had overlooked the Daylight savings time one, until you mentioned hacks again.

Make it a good day!

Ross

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 2, 1999 - 07:29 pm:

We have DST here also. I agree, it's outlived any usefulness it may ever have had.

There are very few OS 3.3 incompatibilities across the board, but one or two have cropped up. Glad I could help. :)

Neal

By [Steve Wall](#) on Tuesday, December 21, 1999 - 02:53 pm:

I installed OS 3.3 last week and discovered that the backlite function of my PalmPilot didn't work. I disabled LightHack version 1.1 which I had and reset the PP, but it still didn't work.

Yesterday I arranged with Palm to Fedex me a new III board.

Then it dawned on me that perhaps there might be a software conflict. I went to your site and downloaded version 2.1 and now all it perfect!

Just thought you would like to know.

Steve Wall in bright, windy Chicago.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 21, 1999 - 03:53 pm:

Thanks, Steve. I did know about that -- glad you figured it out before you shipped it off!

Registered users were all sent the 2.1 update some time back, but it's a bit harder to notify non-registered users -- I don't have their email addresses! :)

Neal

By [Daniel Payan](#) on Wednesday, March 8, 2000 - 06:39 pm:

Will ClearHack 2.1 function with PalmOS version 3.3 on a Palm Vx?

Thank you in advance

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 8, 2000 - 10:38 pm:

It will indeed.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Weekend silence

[Quartus Handheld Software: Discussion Forum](#): [General](#): Weekend silence

By [Neal Bridges](#) on Sunday, October 31, 1999 - 07:01 pm:

I've noticed a curious phenomenon on this forum, and also on the old one -- while it hops on weekdays, weekends are very quiet. Feel free to break the spell! :)

Neal

By [Dennis Groves](#) on Monday, November 1, 1999 - 02:20 am:

Happy Holiday, and thank you for your rapid reply to my email. Just thought I would break the silence around hear...

By [Neal Bridges](#) on Monday, November 1, 1999 - 08:37 am:

Doubtless the Palm community was out for Halloween :)

Neal

By [Raul Perez](#) on Monday, November 1, 1999 - 08:54 am:

On that topic, Is there a way we can see the last 3 days worth of discussion (like the Last Day button but for three days?) I don't use the computer at work on weekends, and have to use the Last Week button on Mondays to find out what happened while I was gone.

By [Neal Bridges](#) on Monday, November 1, 1999 - 09:16 am:

There sure is -- choose "New Messages" from under "Utilities" in the menu, and select 3 days.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Recommended Books page now available!

[Quartus Handheld Software: Discussion Forum: General: Recommended Books page now available!](#)

By [Neal Bridges](#) on Thursday, October 28, 1999 - 12:50 pm:

Check out the [Recommended Books](#) page!

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Welcome to the new site!

[Quartus Handheld Software: Discussion Forum: General: Welcome to the new site!](#)

By [Neal Bridges](#) on Saturday, October 9, 1999 - 12:59 am:

As you can see, Quartus is in a brand-new location, and I have to say, it feels good. Have a look around, see what you think of the new site.

I haven't moved over every byte from the old site yet; if you see something missing, or otherwise not as it should be, please let me know and I'll straighten it out.

Neal

By [Daryl Lee](#) on Saturday, October 9, 1999 - 01:21 pm:

Wow, you've really done a nice job remodeling!

Cutting to the chase: I came in this morning looking for a file I've lost. It's a Quartus Glossary, that gives the usages for all the words that are particular to Quartus. I have the ANSI words; I need the Quartus words. I can't find them in the file area--yet.

Daryl

By [Neal Bridges](#) on Saturday, October 9, 1999 - 01:32 pm:

Thanks Daryl! That information is in the manual -- are you referring to a DOC version?

Neal

By [Daryl Lee](#) on Sunday, October 10, 1999 - 12:28 am:

I found what I needed in QDocs.zip. The file I was looking for is "TDSpecific.prc", and it looks perfect. (I PROMISE it wasn't there this morning!

Thanks again.

Daryl

By [Neal Bridges](#) on Sunday, October 10, 1999 - 12:37 am:

QDocs.zip was there this morning, but it was in Contrib. It's now also in Docs. Glad you found it!

Neal

By [Serg](#) on Sunday, October 10, 1999 - 01:36 pm:

Ooo.

Cool! I thought I was lost for a moment or two.
Very nice setup.

(Still lurking)

By [Neal Bridges](#) on Sunday, October 10, 1999 - 01:47 pm:

Thanks Serg. Let me know if anything looks out of place.

Neal

By [Dan Hughes](#) on Monday, October 11, 1999 - 12:20 pm:

Could you make an option to disable frames? The menu is nice to have but I would rather it be added to each page. I have to go through a number of steps to be able to save a page for offline reference.

We used frames on our site but finally converted to using a side menu and it has made a world of difference for us and our users.

Dan

By [Neal Bridges](#) on Monday, October 11, 1999 - 12:35 pm:

I'll see what I can do. What browser are you using that makes it difficult to save the page content?

Neal

By [Neal Bridges](#) on Monday, October 11, 1999 - 12:38 pm:

Further to that -- I just tried it under Netscape4 and IE5. Both allow you to right-click on, say, "Last Day", and choose "Open in New Window", after which you're frames-free for browsing the topics, and should be able to easily save the content of any discussion. Let me know if that helps.

Neal

By [E. Ross Helton](#) on Monday, October 11, 1999 - 01:43 pm:

Hi Neal;

I hate frames!!! I tried your right hand click and all it did was give me the menu and then I couldn't click into any of the items. I hope I have posted this correctly, because I am thoroughly lost.

Make it a good day!

Ross

By [Neal Bridges](#) on Monday, October 11, 1999 - 01:54 pm:

Ross, sorry to hear you're having troubles. What I meant was this:

Right-click on, for instance, "Topics" (on the menu on the right), and select "Open in New Window". If you just click on the background there, you'll get what happened to you. You need to actually right-click on one of the menu items, such as "Topics" or "Last Day". Give that a try, let me know.

Neal

By [E. Ross Helton](#) on Monday, October 11, 1999 - 03:48 pm:

Hi Neal;

**That worked better. Thought I had done that.
For the record, still hate frames!**

Will have to get used to the new format. Hopefully As the new wears off, it will all work out.

Make it a good day!

Ross

By [Neal Bridges](#) on Monday, October 11, 1999 - 05:33 pm:

As a rule I'm not to happy with frames myself; this message board works quite well with them, however, and also supports non-frame clients, as well as offering the ability to operate in a non-frames mode (via the method I described earlier). In fact you can bookmark such a non-framed page and come back to it whenever you wish, so both camps have freedom of choice.

Neal

By [Phil Howlett](#) on Tuesday, October 12, 1999 - 01:12 am:

Hi Neal,

What can I say.. but WOW!!!

First Quartus Forth, now this WWW site.

Wonders never cease :)

**Cheers,
Phil.**

By [Neal Bridges](#) on Tuesday, October 12, 1999 - 01:21 am:

Hey, thanks Phil. Glad you like it, on both counts :)

Neal

By [ESC](#) on Wednesday, October 13, 1999 - 05:46 am:

Time for a "Me Too". I like the new site. I have seen this message board software before, but other incarnations have set it up to be darn slow. No sluggishness perceived in this setup.

May the Forth be with you!

/Erwin

By [Neal Bridges](#) on Wednesday, October 13, 1999 - 09:27 am:

Thanks Erwin :) Give the search-engine a try, let me know what you think.

Neal

By esc on Thursday, October 14, 1999 - 12:32 am:

Either my ISP added loads of bandwidth, or your server is Europe based, or, well, the search engine is amazingly responsive 8-)

/Erwin

By [Neal Bridges](#) on Thursday, October 14, 1999 - 12:39 am:

Glad to hear it's working well! I was wondering how well it was responding from Europe (and elsewhere); thanks for the feedback.

Neal

By [Stephen C. Gilardi](#) on Monday, November 1, 1999 - 04:04 pm:

I notice the "username" and "password" fields at the bottom of the "Add a Message" box. Also, I believe I saw that having an "account" would be useful elsewhere in "Discus" for searching for messages that are new to me.

I don't see a place to sign up for an account. Is there a way to sign up or is that something that may come in the future?

Thanks,

--Steve

By [Stephen C. Gilardi](#) on Monday, November 1, 1999 - 04:13 pm:

I'm using Internet Explorer 4.5 on a Power Mac.

Each time I add a message, the first time I preview it, the last 8 or so characters are missing.

At the bottom of the preview page, I edit the message to restore the missing characters and then press the "Preview/Post Message" on that page. The second preview is fine with no missing characters.

The easy workaround is to include an extra 8 space characters at the end of my messages or simply edit my messages twice, but I thought I'd report it so maybe it can be fixed at some point.

[Ironically, in attempting to post this message, I found that the second preview isn't always correct. It may be that doing significant editing (as opposed to simply appending the missing characters to the end of the message) causes the second preview to show missing characters again.]

--Steve

By [Neal Bridges](#) on Monday, November 1, 1999 - 04:41 pm:

Steve, that's strange stuff. Is 4.5 the latest IE for the PowerMac? They may have fixed bugs since.

Neal

By [Neal Bridges](#) on Monday, November 1, 1999 - 04:47 pm:

As to the accounts, I haven't played with that. I can set one up if you like; fire me off a username and password and you can be the guinea pig.

Neal

By [Stephen C. Gilardi](#) on Monday, November 1, 1999 - 04:52 pm:

Yes, IE 4.5 is the latest for the PowerMac.

I'll send you a username and password by mail.

--Steve

By [Stephen C. Gilardi \(Squeegee\)](#) on Monday, November 1, 1999 - 06:45 pm:

Test - please ignore.

This is a quick test message sent using my new username and password.

Search engine now available

[Quartus Handheld Software: Discussion Forum: General: Search engine now available](#)

By [Neal Bridges](#) on Sunday, October 10, 1999 - 07:36 pm:

I've just added a search engine to the site -- try it out, let me know how it works for you.

Neal

By [Neal Bridges](#) on Tuesday, October 12, 1999 - 07:14 pm:

An additional point -- the search engine also indexes a number of other Forth, Palm, Visor, daVinci, and associated development sites.

[Quartus Search Engine -- give it a try!](#)

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Quartus users / support for JDF

[Quartus Handheld Software: Discussion Forum](#): [General](#): Quartus users / support for JDF

By [Barry Ekstrand](#) on Thursday, October 14, 1999 - 09:12 am:

All,

I debated with myself long and hard whether or not to post this off-topic message, and finally decided that I would be more remiss in not giving a Quartus friend the opportunity to participate if someone desired, so here goes...

Many will remember that my programming efforts are directed at creating charitable shareware packages, with proceeds from registration going to the Juvenile Diabetes Foundation. Last year, at age 3, my daughter was diagnosed with the disease, and I hoped to create an ongoing source of donations to JDF with my effort. JDF is one of the most efficient charities in existence, with about 85% of donations going directly to funding medical research to find a cure for diabetes.

I've been fortunate to have received much help from a number of you in learning Quartus Forth, and the result so far is my LoanPayment program. I'm pleased with the response to the program and have been encouraged to continue the effort. Quartus has made the whole effort possible, as I need to use whatever moments of free time as they occur to do the programming - not the most efficient way to program, but a good way to make all of my time productive!

Along with this effort, I serve as a team captain during JDF's annual fundraising effort, ongoing now in my city (Houston). This effort is directed at seeking sponsors to donate to the cause. I simply want to make my Quartus friends aware of the effort, and if anyone would like to participate as a sponsor, e-mail me and we'll work out the details.

Rest assured I don't want to get the discussion forum distracted from its real purpose, and I thank everyone for indulging me in allowing me to post a note about the merging of my 2 interests: Quartus and JDF support. If anyone has any other questions or comments, let me know.

Thanks and regards,

Barry Ekstrand

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

I'll be at PalmSource 99!

[Quartus Handheld Software: Discussion Forum: General: I'll be at PalmSource 99!](#)

By [Neal Bridges](#) on Thursday, October 14, 1999 - 10:08 pm:

I made the final arrangements for my trip to PalmSource 99 today. I'll be taking a laptop with me, so I'll still be available for support. I'll post a note or two here about how it's proceeding. Perhaps I'll meet some of you there!

[PalmSource 99](#)

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

About PalmSource '99!

[Quartus Handheld Software: Discussion Forum](#): [General](#): About PalmSource '99!

By [Neal Bridges](#) on Sunday, October 24, 1999 - 09:40 pm:

Hi, just back from PalmSource. It was a good conference, and I met some interesting people.

One item caught my eye: 3Com was showing the prototype of a folding keyboard for the entire Palm series, very slick. Lays flat and looks and feels like a laptop keyboard, folds into an anodized case the size of a paperback novel. They say it'll be out next year.

I bought a Palm Vx (8 meg!), and ordered a Visor Deluxe (16 meg!) for the lab; I'll be making any required changes to all the Quartus products for the Visor. I installed and tested Quartus Forth on a Visor at the conference, and it runs without any problems.

By the way, with StreakHack running on the Palm Vx, it benchmarks at 133% of speed of the Palm IIIx!

Neal

By [Kip DeGraaf](#) on Wednesday, October 27, 1999 - 10:04 am:

16 Megs on the Visor Deluxe?? How did they get past that 12meg limit I remember hearing about in PalmOS?

PS, great new site!

By [Neal Bridges](#) on Wednesday, October 27, 1999 - 10:16 am:

Thanks Kip! Glad you like the site.

The Visor Deluxe comes with 8 megs on-board, and the package I bought also comes with an 8 meg flash Springboard module.

I believe the 12 meg limit in the older systems was a design limitation that they've fixed in the Visor.

Neal

By [Erwin Schomburg](#) on Wednesday, October 27, 1999 - 12:34 pm:

I think you are both comparing pears and apples, the external springboard memory is, AFAIK, not a native memory extension directly approachable via the processor memory bus but needs to be talked to via some kind of....err, file-sytem, for lack of a better term.

/Erwin

By [Neal Bridges](#) on Wednesday, October 27, 1999 - 01:25 pm:

Actually it's directly addressable -- it's flash, on card 1 (normal RAM is card 0). So it's read-only, after a fashion, but you can store apps on it and they work just fine.

Neal

By [Erwin Schomburg](#) on Wednesday, October 27, 1999 - 01:52 pm:

So this is it, banked ("card") memory. Now there is one 12Meg limit for the innards and one 12Meg limit for (any) second "card". Goodbye to all software relying on everything to be in bank (card) 0

/Erwin

By [Neal Bridges](#) on Wednesday, October 27, 1999 - 02:34 pm:

You're right, some software will need to be enhanced to run on card 1, but it's not a major change to make.

Neal

Add a Message

Username: **This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.**

Password:

E-mail:

Speeding up the Palm Vx with StreakHack!

[Quartus Handheld Software: Discussion Forum](#): [General](#): Speeding up the Palm Vx with StreakHack!

By [Neal Bridges](#) on Tuesday, October 26, 1999 - 12:13 am:

Without any enhancements, the Palm Vx benchmarks (using the [Quartus Benchmark](#) app, of course) at 122%, using the IIIx/V as the 100% baseline.

With [StreakHack](#) installed, it runs at 133%! This is a perfectly safe speedup; you just have to adjust your contrast down to the low end of the scale after activating it. And as a plus, the StreakHack speed increase is equal to a battery usage *decrease*.

Also of interest -- Alexander Hind's CruiseControl, available at [PalmGear HQ](#). With both CruiseControl and StreakHack active, the Palm Vx benchmarks at 197%, which is amazing. I don't yet know what CruiseControl does, but I'll be running it for awhile to see if anything undesirable happens.

Neal

By [Erwin Schomburg](#) on Tuesday, October 26, 1999 - 04:02 am:

Given that PV and PIIIx under OS3.3 run at 108%, indicating that the refresh rate fix is incorporated, I find it a bit confusing that StrekHack should have any effect on a PVx. CruiseControl gives you a blazing 161% on a PIIIx or a PV under OS3.3 (or 3.1.1 or 3.1.0 with StreakHack) and I have it in use for some time since middle of August without any problems.

/Erwin

By [Neal Bridges](#) on Tuesday, October 26, 1999 - 09:06 am:

Indeed, I was also surprised. Still, there it is. The hardware in the Vx is different -- it's a 20 MHz chip, for instance -- so it appears they're using different settings.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Quartus Forth (PalmOS version)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#)

Welcome to *Quartus Forth (PalmOS version)*, for questions, comments and discussion of the PalmOS version of the [Quartus Forth](#) on-board compiler.

You may enter any of the discussions below by clicking on the appropriate link. Or, to start a new discussion of your own, click on the "Create New Conversation" button.

- [POSE and fields](#) March 17 - 05:03 pm
- [116 t error](#) March 17 - 04:00 pm
- [Stack effects](#) March 17 - 08:56 am
- [Memory use.](#) March 16 - 06:19 pm
- [Field test help needed](#) March 17 - 09:51 am
- [Simplest event loop needed](#) March 16 - 03:46 pm
- [CtlSelectEvent](#) March 16 - 06:06 pm
- [Random floating-point numbers](#) March 15 - 09:58 pm
- [Problem loading MemoDB into POSE 3.0.4a](#) March 15 - 08:50 am
- [Popup trigger](#) March 15 - 09:08 pm
- [Structs](#) March 15 - 08:12 am
- [OS3.5 POSE Debug ROM Problems](#) March 16 - 10:02 am
- [Duco Suggestion](#) March 14 - 04:42 pm
- [Getting an Icon onto my .prc](#) March 12 - 10:50 pm
- [Help! Problem with COMPARE?](#) March 12 - 02:10 pm
- [Vector graphics anyone?](#) March 12 - 03:30 pm
- ["Dynamic" rectangles](#) March 13 - 08:38 pm
- [Quartus is Biblical](#) March 12 - 10:53 pm
- [More annoying color questions](#) March 16 - 10:30 am
- [FLOOR and FROUND](#) March 10 - 01:54 pm
- [Problem with form](#) March 10 - 04:24 pm
- [Making "helper" words](#) March 11 - 09:33 am
- [Return stack manipulation](#) March 10 - 10:38 am
- [Selecting text in the Console](#) March 9 - 11:37 am

- [SysSetPerformance, HwrSetCPUDutyCycle, HwrSetSystemClock](#) March 9 - 06:01 pm
- [Question about next release](#) March 8 - 10:46 pm
- [USB Visor Support under Quartus Forth](#) March 8 - 04:33 pm
- [Dictionary overflow](#) March 10 - 07:42 pm
- [Operations on double values](#) March 9 - 08:29 am
- [Clear to End-of-line \(EOL\)](#) March 8 - 01:09 pm
- [Educational discount on Quartus Forth](#) March 9 - 08:22 am
- [Experimenting with PalmOS Words](#) March 7 - 04:09 pm
- [T3D game ; another Quartus application](#) March 8 - 10:47 am
- ["Family" Bitmaps?](#) March 7 - 09:00 pm
- [TIME Magazine article](#) March 9 - 02:07 pm
- [Not sure if this is a Syntax or Style question...](#) March 6 - 04:29 pm
- [Printing Problem with Small Floats](#) March 7 - 08:47 pm
- [Modifying & Deleting records](#) March 6 - 09:32 am
- [Registrations](#) March 15 - 07:06 pm
- [Confused about BUFFER](#) March 8 - 10:49 am
- [A question that NEEDS an answer](#) March 4 - 08:13 pm
- [Beaming program and resources](#) March 5 - 02:33 pm
- [Screen rotation](#) March 3 - 10:26 am
- [Serial i/o example](#) March 3 - 06:29 am
- [The math is ugly](#) March 3 - 06:07 am
- [Text string on form](#) March 5 - 11:22 am
- [Allocating contiguous memory still accessable by HERE?](#) March 2 - 10:47 am
- [THROW revisited](#) March 10 - 01:27 pm
- [Found Starting Forth IN STOCK!](#) March 3 - 10:30 am
- [Large values & display formatting](#) March 1 - 08:58 am
- [Palm Emulator - How to transfer source files ?](#) March 3 - 11:58 pm
- [More Doc puzzlement](#) February 28 - 02:41 pm
- [Problem w/ DmResourceInfo](#) February 27 - 09:59 pm
- [Inverting text](#) February 27 - 05:50 pm
- [Typo in serial.txt ?](#) March 1 - 10:17 pm
- [Problem with Default case in CASE](#) February 29 - 07:14 am
- [Palm at CeBIT](#) March 1 - 08:55 am

- [Zstrings](#) March 1 - 02:00 pm
- [Cannot use MakePRC under color OS 3.5](#) February 24 - 09:31 pm
- [Reading the color value of a pixel](#) March 1 - 12:42 pm
- [Quartus Forth 1.2.1 crashes on ": ..\(41 parse tinytype ; immediate"](#) February 23 - 09:09 am
- [Fun with control structures!](#) February 22 - 12:04 pm
- [An advertisement for Quartus Forth](#) February 22 - 02:14 pm
- [Pila](#) February 21 - 11:54 pm
- [JackFlash](#) February 22 - 08:27 am
- [Color Quintominoes](#) March 14 - 07:07 am
- [Where are serControl & serSendFlush?](#) February 21 - 01:29 pm
- [Palm VII Internet Library Support](#) February 16 - 04:47 pm
- [Problems with LstSetListChoices](#) February 16 - 11:55 am
- [Displaying bitmaps from an external resource/database](#) February 23 - 01:48 pm
- [Memory footprint of a Quartus standalone application..](#) February 14 - 07:42 pm
- [Getting return strokes from fields](#) February 15 - 09:16 am
- [Pedit and pedit32 for Quartus on the palm](#) February 18 - 01:50 pm
- [Getting Started](#) February 26 - 11:48 pm
- [Network HotSync with the Palm OS Emulator](#) February 11 - 08:44 am
- [Open Firmware and OS-less Forth](#) February 11 - 03:12 pm
- [New file: colornames.txt](#) February 8 - 05:41 pm
- [Conditional If](#) February 11 - 04:41 pm
- [Accessing databases from Flash](#) February 17 - 08:04 pm
- [Tester module changes base to hex](#) February 7 - 09:19 am
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- [Docs on serial port support?](#) February 6 - 11:34 am
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QUARTUS

How to Contact Quartus

Quartus
65 Scadding Avenue
Suite 809
Toronto, Ontario
CANADA M5A 4L1

info@quartus.net

Quartus

Welcome to daVinci Forth 1.1.

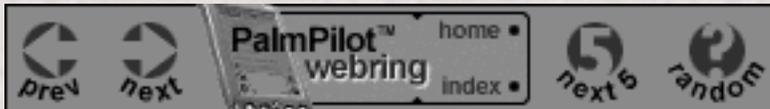
Build: 1999.08.07 5:36:43pm

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POSE and fields

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

POSE and fields

By [Trevor Steele](#) on Friday, March 17, 2000 - 02:02 pm:

I have come across a strange occurrence with POSE (3.0a4) when carrying out some tests. My application had been failing only on those forms which contained fields. The following code (snipped) was compiled and tested. The form 1006 contains only one field with a maximum of 5 characters and the field is set

editable
usable
underline
single line

The code fails after about 390,000 of Gremlin #0 with the message that the program has written directly to low memory. Have I missed something really obvious or has anyone come across this before. Any guidance would be most appreciated :-)

```
\ test

needs resources
needs forms
needs graphics

(ID) p4ap (ID) TRSS use-resources

: do-event drop ;

: go
  1006 showform
  begin
    ekey 0 0 at .s do event
  again ;
```

Best regards

Trevor

By [Neal Bridges \(Nbridges\)](#) on Friday, March 17, 2000 - 02:07 pm:

What version of the ROM are you testing under?

Neal

By [Trevor Steele](#) on Friday, March 17, 2000 - 02:11 pm:

Hi Neal

ROM was OS 3.3 debug. I forgot to mention that!

Trevor

By [Neal Bridges \(Nbridges\)](#) on Friday, March 17, 2000 - 03:11 pm:

Try it with the latest seeding emulator. I can't claim it'll be any different. The Palm OS Emulator has been cranked up to the point where it's nearly impossible to do gremlins on anything without a failure -- the Palm OS itself does things the emulator doesn't like. It's frustrating, as it reduces its value as a testing tool.

Does it perform successfully with the non-debug ROM?

Neal

By [Trevor Steele](#) on Friday, March 17, 2000 - 04:27 pm:

Thanks Neal

I'll try your suggestions and see what happens. I agree that it is somewhat frustrating working with the later versions of POSE.

Trevor

By [Neal Bridges \(Nbridges\)](#) on Friday, March 17, 2000 - 05:03 pm:

Trevor, also I hope that your 'do event' was a typo-- it should be 'do-event'.

Neal

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116 t error

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

116 t error

By [Dave Bennett](#) on Friday, March 17, 2000 - 11:56 am:

Neal,
I've plugged the let equation from "The Math is Ugly"
into my app and when it hits the formula it gives
a 116 t error. Invalid operation.

I can turn debug on at that point and it shows the
116 t at the end of the let calculation. Anything
after that is a hard reset.

However, if I do not turn debug on and just exit
Q4th, no hard reset required.

What's a 116 t?

By [Neal Bridges \(Nbridges\)](#) on Friday, March 17, 2000 - 12:37 pm:

That is being reported by OPG. What exactly is the error message?

Have you tried the code snippet I posted previously? It runs fine. Are you copying it directly
into your app, or changing it in some way as you include it in your app?

Neal

By [Dave Bennett](#) on Friday, March 17, 2000 - 03:01 pm:

Well, the snippet you posted had 6 open parenthesis and 7 close parenthesis caused different
problems. I added another open parenthesis and that problem disappeared, but this one
appeared.

I have an fvariable declared.

fvariable wcfF

I'm coding...

```
let wcfF=(((...
```

This causes:

116 t

Exception in file: WCF

Illegal Operator

So I removed the wcfF= and tried just

```
let (((10.45+(6.686112*sqrt(wsF)) -  
(0.44704*wsF))/22.034) *  
(tempF-91.4))+91.4
```

wsF and tempF are both declared like this

```
fvariable wsF  
fvariable tempF
```

I've tried the equation without any spaces as well and get the exact same error.

Dave

By [Neal Bridges \(Nbridges\)](#) on Friday, March 17, 2000 - 03:13 pm:

The formula has to end with a : at the very end.

Neal

By [Dave Bennett](#) on Friday, March 17, 2000 - 03:52 pm:

OK. I mistakenly (two, actually) thought that was the end of a word definition. :(

That solved that.

Now to get the result into a string...

By [Neal Bridges \(Nbridges\)](#) on Friday, March 17, 2000 - 04:00 pm:

To convert a float into a string, use (f.) from *float-ext*. To convert an integer, use

```
: d>string ( d. -- c-addr u )  
  tuck dabs <# #s rot sign #> ;
```

Neal

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Stack effects

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Stack effects](#)

By [Frank Beyer](#) on Friday, March 17, 2000 - 05:22 am:

Sorry I'm a new user of QuartusForth.

What stack effect has the word >abs ?

I can't find it in the documents.

Thank's

By [Erwin Schomburg](#) on Friday, March 17, 2000 - 06:37 am:

It expands a 16bit (1 cell) address pointing to data in the Quartus data space into a valid 32bit (2 cells) address for use in system calls. Stack diagram: (u --- au.)

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Friday, March 17, 2000 - 08:56 am:

>**abs** is documented here:

<http://www.quartus.net/products/forth/manual/specific.htm>

Neal

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Memory use.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Memory use.

By [Peter Graif](#) on Thursday, March 16, 2000 - 06:13 pm:

Hi folks,
I just picked up my registered copy of QF, and am currently in the process of figuring the thing out. Just one quick question:

```
unused . (enter) 254 ok
variable x (enter)
unused . (enter) 256 ok
```

Wouldn't doing something like that decrease my available memory by two instead of increasing it? If it's something obvious, go easy on me. After years at C, I'm new to this whole "common-sense programming" thing. :P

Cheers,
Peter

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 16, 2000 - 06:19 pm:

That is by design, actually. What happens is that Quartus Forth allocates only the minimum amount of dynamic RAM. If you exceed or approach the top of that region by declaring variables, using ALLOT, etc. then the dynamic RAM is resized upward so that there are again 256 bytes available beyond HERE.

If you want it to make more sense, do this:

```
8192 allot -8192 allot
unused . -> 8448
```

Now unused will track properly until such time as you approach 8448.

Neal

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Field test help needed

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#) **Field test help needed**

By [Dave Bennett](#) on Thursday, March 16, 2000 - 03:42 pm:

My app has two fields. While they should be numeric in nature, because you cannot enter a negative number, I am treating them as non-numeric fields.

I need to test if there is any data in these fields. I can get the data from the field into a string (I think). How do I test to see if there is anything there?

Thanks.

Dave

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 16, 2000 - 04:07 pm:

If the field is empty, the string length will be zero.

Neal

By [Dave Bennett](#) on Thursday, March 16, 2000 - 04:52 pm:

OK. I now have

```
: do-calc ( -- )
tmpBuf DUP / my variable buffer
tempInputID Field>string 0 = IF
beep then
```

```
;
```

And it beeps when the returned length is 0.

How do I just exit this subroutine if that is the case? And do I have to do a DROP to get rid of my DUP of tmpBuf to clean up the stack?

Dave

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 16, 2000 - 05:20 pm:

```
: do-calc ( -- )
  tmpBuf tempInputID Field>string
  2dup nip 0= if
    2drop
  else
    ...do_something_with_the_string...
  then
```

;

NealBy [Dave Bennett](#) on Thursday, March 16, 2000 - 06:16 pm:

OK. So tmpBuf puts the c-addr on the stack, then tempInputID provides the field ID and Field>string uses these and then returns the len onto the stack.

The 2dup then duplicated the length and the c-addr? Why was that necessary if the next thing is nip? Which appears to take the top item off the stack?

And if we've lost one of the 2 items we created on the stack, why do we need a 2drop?

Thanks for this tutorial.

DaveBy [Neal Bridges \(Nbridges\)](#) on Thursday, March 16, 2000 - 06:21 pm:

Quite right. Use DUP instead of '2DUP NIP'. My error.

We do a 2DROP to throw away the (c-addr len) when we decide, because the length is 0, to do nothing with them.

NealBy [Neal Bridges \(Nbridges\)](#) on Thursday, March 16, 2000 - 07:33 pm:

Let me further clarify by writing a stack diagram each place that the stack changes:

```

: do-calc ( -- )
  tmpBuf tempInputID ( &tmpBuf tempInputID )
  Field>string ( c-addr len )
  dup ( c-addr len len )
  0= ( c-addr len flag )
  if ( c-addr len )
\ If the length is zero, just discard the string descriptor:
  2drop ( )
  else ( c-addr len )
    ...do_something_with_the_string...
    ... ( )
  then ( )
;

```

NealBy [Dave Bennett](#) on Friday, March 17, 2000 - 06:22 am:

OK. Got that. Now, when we get to the do_something_with_the_string part, is the (c-addr len) combination enough at that point to use >float to get a value onto the float stack? (Remember

my "the math is ugly" post? That's where we're going.)

Thanks.

By [Neal Bridges \(Nbridges\)](#) on Friday, March 17, 2000 - 09:07 am:

The simplest way is:

```
: string>float ( c-addr u -- ) ( F: -- r )
>float if else 0e then ;
```

However, watch out for leading spaces in the string. Have a look at this thread:

<http://www.quartus.net/discus/messages/23/201.html?FridayJanuary2120000135pm#POST1072>

Neal

By [Dave Bennett](#) on Friday, March 17, 2000 - 09:31 am:

I saw the string>float in an earlier post and was confused by the u. That's why I was asking that if the Field>string values left on the stack fulfilled the requirements of string>float.

I did see that that earlier thread and some others discussing this whole issue. Looks like a good area for a library set of functions.

Dave

By [Neal Bridges \(Nbridges\)](#) on Friday, March 17, 2000 - 09:51 am:

Good idea, Dave. The key thing is to ensure the string you try to convert matches the format that >FLOAT expects. The leading +/- (if any) needs to be parsed out separately and the float made negative afterward as appropriate.

I can think of a couple of simple ways to manage it; I'll draw something up.

Neal

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Simplest event loop needed

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Simplest event loop needed](#)

By [Dave Bennett](#) on Thursday, March 16, 2000 - 03:39 pm:

My app has only to detect if the user has pressed a button. No menu, not nothing except one button. Is this as simple as I can detect that and execute my calc routine?

```
: main-event ( ekey -- )
cond DUP ctlSelectEvent = IF
event >abs itemid
wcfCalcBtnID - IF do-calc THEN
ELSE
thens DROP
;
```

Thanks.

Dave

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 16, 2000 - 03:46 pm:

If you only have one button, and no other GUI objects, this is even simpler:

```
: main-event ( ekey -- )
  ctlSelectEvent = if do-calc then
;
```

Neal

Add a Message

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CtlSelectEvent

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): CtlSelectEvent](#)

By [Ingo Mathyl](#) on Thursday, March 16, 2000 - 08:21 am:

Hi Neal,

thank You for sending me Quartus 1.26.
But I got a new problem handling events.
I think since I use Quartus 1.26 the ctlSelectEvent is not handled.
I use controlButtons that generate it.
It worked fine with quatus 1.25 under
OS 3.0 and 3.3.

Thanks

Ingo

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 16, 2000 - 09:01 am:

Ingo, ctlSelectEvents are explicitly passed to the application in the version I sent you. Can you describe your problem to me in more detail?

Neal

By [Ingo Mathyl](#) on Thursday, March 16, 2000 - 01:37 pm:

Hi Neal,

here is the mainLoop of my application.
Look at the arrow I made - this part will
not executed and I think the ctlSelectEvent
is not generated:

```
: mainLoop ( -- )
  begin
    ekey dup dup
    menuEvent =
    if
      event >abs itemid
      case
        menuKhID of doKh endof
        menuToID of doTo endof
        menuAssID of doAss endof
        menuAstID of doAst endof
      endcase
```

```

    2drop exit
else
    event >abs itemid
    itemCase
    ctlSelectEvent =
if
    drop
    inputFieldID @ showField \ <====
    exit
else
    fldEnterEvent =
    inputFieldID @ lastFieldID @ =
    0= and
if
    inputFieldID @ showfield
    exit
else
    getFocusID inputFieldID !
    inibuff
    strbuff inputFieldID @
    Field>string
    inputFieldID @ dup lastFieldID !
    ID>faddr strbuff rot
    string>float!
    exit
    then then then
again ;

```

```

: sheet ( -- )
    doKh
    doCalc
    f.m LastFieldVar !
    inputFieldM inputFieldID !
    begin
        calc.range
        mainLoop
        doCalc
    again ;

```

/

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 16, 2000 - 01:50 pm:

```

event >abs itemid
itemCase
ctlSelectEvent =

```

What is 'itemCase'? You're pulling out the itemID, running itemCase, and then comparing the top of stack to ctlSelectEvent... let me know.

Neal

By [Ingo Mathyl](#) on Thursday, March 16, 2000 - 03:38 pm:

Hi Neal,

here is itemCase:

It leaves nothing on stack.

I compare ekey at top of stack to ctlSelectEvent.

Look at the begin of mainLoop:

...ekey dup dup

```

: itemCase ( itemid -- )
  case
bottonM+ of f.m fstep.up
  inputFieldM inputFieldID ! endof
bottonM- of f.m fstep.down
  inputFieldM inputFieldID ! endof
bottonN+ of f.N fstep.up
  inputFieldN inputFieldID ! endof
bottonN- of f.N fstep.down
  inputFieldN inputFieldID ! endof
bottonB+ of f.b fstep.up
  inputFieldB inputFieldID ! endof
bottonB- of f.b fstep.down
  inputFieldB inputFieldID ! endof
bottonD+ of f.d fstep.up
  inputFieldD inputFieldID ! endof
bottonD- of f.d fstep.down
  inputFieldD inputFieldID ! endof
bottonH'+ of f.h' fstep.up
  inputFieldH' inputFieldID ! endof
bottonH'- of f.h' fstep.down
  inputFieldH' inputFieldID ! endof
bottonAs of f.m
  inputFieldM inputFieldID ! endof
  endcase
FieldVar ! ;

```

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 16, 2000 - 04:05 pm:

I will have to factor your 'mainLoop' in order to understand what's happening where. However, here is a simple test to see if you are getting ctlSelectEvents.

```
needs graphics
needs ids
needs resources
```

```
\ Replace MyAp/rsrc with your own ids
(id) MyAp (id) rsrc use-resources
1100 constant myform (whatever your form number is)
```

```
: go
  myform ShowForm
  0 0 at
  begin ekey . again ;
```

Event numbers will start to show across the top of the screen. When you tap on a button on the form, a '9' (which is ctlSelectEvent) should be drawn.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 16, 2000 - 04:16 pm:

I recommend this structure for re-factoring your mainLoop:

```
: do-menu ... ;
: do-button ... ;
: do-field ... ;

: MainLoop
  begin
    ekey cond
    dup MenuEvent = if do-menu drop exit
    else dup ctlSelectEvent = if do-button drop exit
    else dup fldEnterEvent = if do-field drop exit
    thens
    drop
  again ;
```

If nothing else, it will help me immensely to see what's happening where, and what's expected vs. what is actually on the stack at any given point.

Neal

By [Ingo Mathyl](#) on Thursday, March 16, 2000 - 05:06 pm:

Neal,

**I know I have to re-factoring my app...
it is grown for a long time.**

**I started Your test 'go' in my app/form.
If I tap on a button it shows ... 7 9 2 ...**

**7 is ctlEnterEvent
9 is ctlSelectEvent
2 is penUpEvent**

**I think I have to test the ctlEnterEvent too.
I will test the events with Quartus 1.25.**

Thank you for your help Neal!

By [Ingo Mathyl](#) on Thursday, March 16, 2000 - 05:21 pm:

Yes,

**it was the error.
When I tap the button under Quartus 1.25
it generates only this events:**

... 9 2 ...

**9 is ctlSelectEvent
2 is penUpEvent**

So 9 was on TOS and it worked in 1.25

Bye, Ingo

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 16, 2000 - 05:23 pm:

Ingo -- you are also getting the 9 under 1.26, as per your previous message. Is there still a problem?

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 16, 2000 - 05:24 pm:

... in other words, the fact that in 1.2.6, you're now also getting a ctlEnterEvent (7) is of no consequence; you can simply ignore it in your event loop, just as you ignore all events in which you have no special interest.

Neal

By [Ingo Mathyl](#) on Thursday, March 16, 2000 - 06:01 pm:

Random floating-point numbers

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
Random floating-point numbers

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 09:58 pm:

Here's a function to produce a random floating-point number, $0 \leq n < 1$. It looks a bit obscure because it depends on the storage layout of the internal floating-point format, but it works well and it's fast.

needs random

fvariable ftmp

```
: frnd ( F: -- r )
  rand rand 2* xor 8 lshift 65 or
  rand ftmp 2! ftmp f@ ;
```

Neal

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Problem loading MemoDB into POSE 3.0.4a

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Problem loading MemoDB into POSE 3.0.4a

By [Philippe de Rochambeau](#) on Wednesday, March 15, 2000 - 05:30 am:

POSE says that the MemoDB.pdb is already open when I attempt install it. Any idea why?

Is there any other way to import memos into POSE?

(Off-topic) Why does POSE automatically connect to the web when you launch it? How can you disable that?

Any help on these matters would be much appreciated.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 08:50 am:

You were probably in the MemoPad when you tried to load MemoDB.pdb. Switch to the Calculator or the Application launcher first.

As to the network -- right click, choose Settings, Properties and turn off "Redirect Netlib calls to host TCP/IP".

Neal

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Popup trigger

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Popup trigger

By [Ingo Mathyl](#) on Wednesday, March 15, 2000 - 05:19 am:

Hi Neal,

I have updated my device whith OS 3.3 and the popup trigger in my prog will not work. I read the message "missing events in OS 3.3". Is there an new version of quartus that handles the events in OS 3.3?

Thanks,
Ingo

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 08:52 am:

There is indeed Ingo; I'll forward you the interim version that delivers those events.

Neal

By [Michael Rowe](#) on Wednesday, March 15, 2000 - 09:45 am:

Hello Neal,

could I please have a copy of this interim version?

regards, mrr

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 10:07 am:

Done!

Neal

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 11:21 am:

Damn, gentlemen; I sent you the wrong file -- a broken build that crashes on exit. My apologies; I'll send out the proper one this evening.

Neal

By [Barry Marks](#) on Wednesday, March 15, 2000 - 05:31 pm:

I'm working on a color Palm with OS 3.5 now, trying to understand PhoneDecode. But soon I'll go back to my own field program and resource again. Is this something that needs the new version?

If not, I'd rather not bother with it now but if so, I'd rather not have that confusing me, either.

Barry

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 06:09 pm:

PhoneDecode doesn't need the interim version. In fact, the key thing the interim version does is pass a certain pop-up list event. This change will also be in the update.

You know you need the interim version when, moving from OS3.1 to OS3.3, your program no longer notices that you chose an item from a pop-up list.

Neal

By [Barry Marks](#) on Wednesday, March 15, 2000 - 09:08 pm:

I wasn't asking about phone decode but about my own program when I go back to it. But it won't have a popup list so you answered it anyway.

Barry

Add a Message

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Structs

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Structs

By [Matthew Blair \(Blair\)](#) on Tuesday, March 14, 2000 - 07:50 am:

A question on structs, as defined in the *struct* library file: could somebody give an example of the usage? Also, is it possible to define a struct, allocate memory upon instantiation of a struct, and use the memory address to access fields within the struct? I can write the 'C' equivalent:

```
/* Define a struct */
typedef struct {
    unsigned int field1;
    int         field2;
    char*       str1;
}
mystruct;

/* Variable to hold pointer to struct */
mystruct* ms_ptr;

/* Allocate memory for a struct */
ms_ptr = ( mystruct* ) malloc(sizeof(mystruct));

/* Access certain fields */
ms_ptr->field1 = 5;
ms_ptr->field2 = 10;

/* Here we could save ms_ptr somewhere and */
/* stick the address of another struct in */
/* ms_ptr */
}
```

Thanks,

Matt

By [Erwin Schomburg](#) on Tuesday, March 14, 2000 - 09:32 am:

A direct transposition of your C example:

needs memory
needs struct

```
struct  
1 cells field field1  
1 cells field field2  
1 cells field str1  
end-struct mystruct
```

variable ms_ptr

sizeof mystruct allocate throw ms_ptr !

```
5 msptr @ field1 !  
10 msptr @ field2 !
```

/Erwin

By [Matthew Blair \(Blair\)](#) on Tuesday, March 14, 2000 - 09:38 am:

Cool! Thanks Erwin!

My Forth isn't good enough yet to understand the definitions of **field** and **end-struct**. I was under the impression that each instantiation of 'mystruct' would have to be named in order to use the **field** functionality.

Thanks again!

Matthew

By Erwin Schomburg on Tuesday, March 14, 2000 - 10:15 am:

That can be helped: Both are so called defining words, that means after they have been compiled themselves they become part of what you can make further definitions do when they in turn are compiled.

Compile behaviour:

Field: Create a definition with the name that follows, take 0 (which is constant struct) or the value left over from preceeding "field"s and copy it from under the size value to top of stack, then compile it into the definition just created, using the comma operator. Now take the size and add it to the accumulated offsets from previous "field" definitions.

End-Struct: Create a definition with the name that follows, take the offset value accumulated from all previous "field" definitions and compile it into the just created definition, again using the comma operator.

Execution behaviour:

Field: If a definition that was created using "field" is invoked it takes what it assumes to be an address from stack and adds the offset stored in its own body.

End-Struct: A definition created using "end-struct" is in turn a defining word in its own right, so if you apply "mystruct test" you get a word "test" that has a data area just big enough to hold one item of "mystruct"-size.

If a definition that was created using "end-struct" ("mystruct" in our example) is hit over the head by applying "sizeof" to it, it spits out the size required to hold one struct of this type.

Hope this wasn't too confusing.

/Erwin

By [Jim Hendricks \(Jimh\)](#) on Tuesday, March 14, 2000 - 10:16 am:

Cool work Erwin,

Without looking at the definitions of struct, field, and end-struct, I too was under the impression that I needed to create an instance of the structure before using it. Your sample greatly expands the functionality of the structure since it allows for dynamic instantiation instead of static.

Jim

By Erwin Schomburg on Tuesday, March 14, 2000 - 10:22 am:

Merits to whom merits belong: The functionality was and is in the lib-module, I just somehow helped you to understand it. 8-)

/Erwin

By [Matthew Blair \(Blair\)](#) on Tuesday, March 14, 2000 - 10:41 am:

Erwin,

I unfortunately am not as quick a study as Jim, but I'm going to take your words and go over the definitions. Part of the problem for me is understanding the **CREATE...DOES>** and the other is the use of **,.** Thanks for your explanations though -- hope you don't mind when I come back with some more questions!

Matthew

By Erwin Schomburg on Tuesday, March 14, 2000 - 11:10 am:

CREATE takes the next space (or end-of line) delimited string from input and makes it a Forth word that, when called, coughs up the address **HERE** pointed to at the time of its creation. **Comma** takes a value from stack and puts it in the location **HERE** points to, then increments **HERE** by one cell count (2 bytes in Quartus). **ALLOT**, in turn, just reserves space, i.e. increments **HERE**, without writing any data. **DOES>** is the classic "flag" to recognize a defining word, the part following **DOES>** defines what a word created using it shall do when it

executes. Examples would be the classic textbook (re-)definitions of "variable" and "constant" (please note that these are implemented in Quartus using more optimal assembler primitives):

```
: variable create 2 allot ;
```

```
: constant create , does> @ ;
```

variable test

(creates "test" and reserves 1 cell in data area, "test" dumps address able to hold one cell on stack when invoked)

15 constant fifteen

(creates "fifteen" and writes the value 15 to data area, when invoked "fifteen" takes the address it coughes up itself and DOES look up its contents)

Don't worry, always pleased to help.

/Erwin

By [Jim Hendricks \(Jimh\)](#) on Tuesday, March 14, 2000 - 11:35 am:

Yes Erwin, it's the understanding you gave me, and thanks.

Just an aside, your variable definition assumes a 2 byte cell, proper ANSI def for variable would be:

```
: variable create 1 cells allot ;
```

Jim

By Erwin Schomburg on Tuesday, March 14, 2000 - 11:45 am:

Proper *portable* definition please, while picking raisins and splitting hairs. 8-)

/Erwin

By [Matthew Blair \(Blair\)](#) on Tuesday, March 14, 2000 - 11:48 am:

Ah -- OK. I think I found one source of my confusion. I did not realize that **CREATE** looks in the input stream. That's why I could not understand how the following two could work:

```
: variable create 2 allot
```

and

```
create myvariable 2 allot
```

Since in the first case, it appears that **CREATE** is pulling the variable name from the stack, and in the second case is pulling the variable name from the input stream. Much clearer now!
Thanks!

Matt

By **Erwin Schomburg** on **Tuesday, March 14, 2000 - 12:03 pm:**

Almost. In the first case "create" is inside a definition. Compiling the definition for "variable" lays down code that takes care to have "create" executed (i.e. have it read a name from input etc.) when "variable" is invoked. In the second case "create" executes right away, reading the string "myvariable" from input etc.

The BIG difference is, defining "variable" gives you the production tool to create any number of thingies under different names that hold 1 cell of data each and drop the address where to find (or to put) the data on stack when called. The second line generates exactly one such thing with a given name.

/Erwin

By [Travis Casey](#) on **Tuesday, March 14, 2000 - 05:05 pm:**

I'm a bit confused by the "throw" in Erwin's code... and indeed, by just how "catch" and "throw" work. Could someone tell me if my understanding is correct?:

From what I can tell, "throw" grabs whatever's on the top of the stack. If it's a zero, it eats the zero and lets the program roll on. If it's not a zero, it either goes back to the last "catch" (if there is one) and resumes the program there, or aborts the program with an error message.

(The part I'm not really sure on is what "catch" the throw returns to, and how (or even whether) there's any cleanup of the stack done in the process of returning to catch.)

So... from what I can see, if I were silly enough not to care about handling errors, I could just use "drop" where Erwin has "throw" in the code above. Right?

--Travis

By [Neal Bridges \(Nbridges\)](#) on **Tuesday, March 14, 2000 - 05:40 pm:**

Right, Travis. DROP would discard the error code.
"0 THROW" is the same as DROP.

A non-zero THROW causes a jump back to the CATCH, or if there's no CATCH, the Quartus Forth console itself will do the catching and report the error (with a text message when appropriate).

In a stand-alone app, if nobody CATCHes, the application simply terminates. This is not usually the desired thing, so if you're using THROW in a stand-alone app, use CATCH to handle the errors that might occur.

When a non-zero THROW occurs, all stacks are rolled back to where they were when CATCH

was performed, so everything is cleaned up.

Neal

By [Michael Rowe](#) on Wednesday, March 15, 2000 - 04:16 am:

I find struct very useful. It would be nice to also have a struct for long pointers so that it could be used to access OS resources (or is there already one?). Although this is probably a relatively trivial derivation of the existing struct, its creation exceeds my forth coding abilities.

mrr

By Erwin Schomburg on Wednesday, March 15, 2000 - 04:38 am:

What do you think of this?

```
\ 32struct ( 16Mar2000 ERS )
```

```
needs struct \ by NAB
```

```
: (field) ( n "fieldname" --- )  
over create , +  
does> ( d. --- d+n. ) @ m+ ;
```

Usage (as in example far above):

```
needs mem  
needs struct  
needs 32struct
```

```
struct  
1 cells (field) field1  
1 cells (field) field2  
1 cells (field) str1  
end-struct mystruct
```

```
2variable ms_ptr32
```

```
sizeof mystruct (allocate) throw ms_ptr32 2!
```

```
5 ms_ptr32 2@ field1 !a  
10 ms_ptr32 2@ field2 !a
```

/Erwin

By [Michael Rowe](#) on Wednesday, March 15, 2000 - 05:07 am:

Good work Erwin! This looks good to me.

mfg, mrr

By [Matthew Blair \(Blair\)](#) on Wednesday, March 15, 2000 - 07:58 am:

Hi Erwin,

In light of earlier threads about (allocate) vs. allocate, I asked myself the same question as Michael did. I'm glad to see that my solution was the same as yours.

Now, since you've obviously become a teacher to us, maybe we can all get educational discounts now. Neal, what more proof do you need? :)

Matt

P.S. Should *32struct* have a **needs double** also? I think that's where **m+** is defined, right?

By Erwin Schomburg on Wednesday, March 15, 2000 - 08:12 am:

Re: needs double, yes sorry, my oversight.

/Erwin

BTW: The teacher is always the first one eligible for student discounts!

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OS3.5 POSE Debug ROM Problems

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

OS3.5 POSE Debug ROM Problems

By [Ron Doerfler](#) on Monday, March 13, 2000 - 12:10 pm:

Hi Neal,

I'm testing an app by running POSE using the Debug ROMs for a selection of PalmOS versions (2.0, 3.0, 3.1, 3.3, 3.5). There are two problems I wanted to ask about. I hasten to add that these errors do not occur at all in the non-Debug ROMs, and I don't believe these to be real, but you may want to think about skirting them in your next release.

First, the lesser: I've found that the 3.3 and 3.5 Debug ROMs indicate on exit that a memory leak may be present. Looking on the Palm website, I found that this is a warning just in case, but the Palm will release all dynamic memory regardless. It said that usually this means that the user didn't do a `FrmCloseAllForms` in `AppStop` event handling prior to exiting `PilotMain{}`. I tried this, but Quartus doesn't like it, and so I now ignore the message.

Second, the more important. In just the OS3.5 Debug ROM, if you select, say, the About... menu function, and then click on OK in the alert form, the Debug ROM issues an error saying that the app read or wrote to a memory manager region, and forces you to reset the POSE. This kills the session.

I loaded Swatch into POSE with the OS3.5 Debug ROM and also saw both these errors, and I've run hundreds of thousands of Gremlins on all versions of the non-Debug ROMs without a problem, so I'm sure it's something in the way the Debug ROM is interpreting something Quartus is doing. So I thought you might want to look into it for the next release.

Thanks,

Ron

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 12:26 pm:

Thanks Ron. In fact I am looking at how to shut up POSE about these non-errors. I like POSE a lot, but recent builds have cranked its sensitivity up to the point where it even complains about the Palm OS itself. I have to wonder if this is by accident or design -- after all, Palm sells an expensive "Platinum Certification" sticker.

Neal

By [Jim Meadows](#) on Wednesday, March 15, 2000 - 10:58 pm:

Thanks for posting this. I had wondered if it were a real problem or not.

I have run into a another strange "effect" testing with POSE 3.0a5 running both OS 3.0 and 3.5

and wondered if anyone else had encountered it and what may cause it. Sometimes (but not all the time) after I perform a compile and test and then go back to memo or smart doc the scroll bar goes bonkers constantly scrolling down (or sometimes up). If I reset the emulator it goes away and I can continue my development and test cycle. I cannot seem to narrow down the cause/effect. Is there something specific I may be doing that causes this?

- Jim

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 11:07 pm:

I can't imagine what would cause that effect, Jim. To date, I haven't seen it myself. The two legitimate things that might cause that are a whole lot of PgUp/PgDn events in the event queue, or else the emulator thinking one of the scroll buttons is being held down... I can't see any way that Quartus Forth could cause that. And if it did, it wouldn't be likely to be intermittent.

Neal

By [Wade Carlson](#) on Thursday, March 16, 2000 - 12:32 am:

I have the same problem once in a while. Me thinks it's just because the emulator is SLOW. Has nothing to do with Quartus. :)

By [Jim Meadows](#) on Thursday, March 16, 2000 - 10:02 am:

Thanks for the feedback - I really didn't think it was a Quartus Forth problem and can't see anything my program is doing so I have learned to just reset and ignore it!

Jim

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Duco Suggestion

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Duco Suggestion](#)

By [Dave Ruske](#) on Monday, March 13, 2000 - 10:39 am:

There's something a little bit confusing in the Duco source for newbies like myself who are trying to figure out how QF interacts with the Palm OS: namely, Duco patches the `eventhandler` vector for menu handling rather than making use of `EKEY`.

I couldn't understand why there was a need for jumping through this hoop. Did Duco know something that the "hello world" example didn't? Did QF's default `eventhandler` need to be patched out in a production app?

Of course you know the answer... `EKEY` was upgraded at some point, as I learned from digging through the support archives... but it might be useful to comment the Duco source to this effect, or perhaps recode Duco's `do-event` word to handle the menu events via `EKEY`. It might take one little bump out of the learning curve.

Anyway, that said, I'm curious: under which circumstances *wouldn't* `EKEY` be sufficient for event processing? Is there still a use for `eventhandler` other than debugging, perhaps?

By [Jim Hendricks \(Jimh\)](#) on Monday, March 13, 2000 - 10:42 am:

My 2 cents...

I just completed coding a clock which required generation of my own events via `EvtGetEvent` with a timeout which would generate NUL events if the timeout occurs. I don't beleive I could have coded this event process through `EKEY`...

Jim

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 10:46 am:

(`EKEY`) allows you to specify a timeout, and both it and `EKEY` return null events.

Neal

By [Jim Hendricks \(Jimh\)](#) on Monday, March 13, 2000 - 11:56 am:

Hmm, maybe before I release my clock to User Contribs, I will experiment with using (`EKEY`). One concern I have though is how (`EKEY`) works with system events. My current eventloop checks the time to determine if a redraw is required on all events. The reasoning behind this is that the user can't repeatedly tap the screen etc. and cause skips in the screen redraw.

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 12:07 pm:

Give (`EKEY`) a try, Jim -- I suspect it'll meet your needs.

Neal

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 12:08 pm:

Dave -- yes, Duco's method of handling events is well out-of-date. I am revising the docs in conjunction with the new update, to bring everything up to speed.

Neal

By [Jim Hendricks \(Jimh\)](#) on Monday, March 13, 2000 - 01:45 pm:

worked great, thanks Neal.

Jim

By [Jim Hendricks \(Jimh\)](#) on Monday, March 13, 2000 - 01:48 pm:

Just another point on the EKEY issue, Erwin can chime in at anytime since I based my code on his.

trapping for events that have system functionality need to be handled outside of EKEY, otherwise EKEY will trigger the appropriate system functionality and not give your program the chance to over-ride the systems function. The primary example I provide is interception of the hard keys.

Jim

By [Barry Marks](#) on Monday, March 13, 2000 - 06:56 pm:

I've been looking at input.txt to try to figure out how it works, and also I've been reading the PalmOS docs about field functions. I understand everything I read but I guess I'm confused about how it all works. So, since this is about ekey....

As I understand it, ekey gets all user input and if it's something that the system needs to handle it gives it to the system. System being PalmOS or Quartus. But if it's not something the system has to handle it puts something on the stack and goes on to the next statement, which checks to see what's on the stack to know what event took place to know what to do about it.

1. Is my understanding of ekey correct?
2. What does ekey give to PalmOS? to Quartus? to my program?
3. Is that controllable? I found the function FldHandleEvent that seems related to this but I don't quite understand what it does. Does it tell the OS that I want my program (or that Quartus wants) to handle that event? Or does it tell PalmOS to handle it? Why?
4. Is there an event that says "The user has finished entering text in the field (or cancelled) and here's a pointer to the text" or are there only events for individual strokes or keys?

5. Or do I misunderstand the whole thing? :)

Barry

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 07:10 pm:

When you enter a Graffiti character, or tap on the screen, or on a GUI object, or when various other internal and external things occur, the Palm OS notices and generates an 'event'. An 'event' is a small block of data that says what has just happened: for instance, that the pen has gone down on the screen at such-and-such an X and Y coordinate. This 'event' goes on an internal first-in-first-out queue that the OS maintains itself.

EKEY hands your application the next event from that queue, which you can act on -- or 0 if there was no event in its timeout period. It returns most events to you, but not all -- for instance, the frm*Events are handled internally by Quartus Forth.

Some GUI objects handle their own events. Fields are one such, and **EKEY** makes sure fields have a chance to handle each event as it goes by. If the field handles the event, **EKEY** does not give it to your application.

If you want to intercept events before a field sees them, you have to do a bit of dancing. Let me know if you want an example (and I believe there is at least one already in the forum). **ACCEPT** does just this sort of dancing -- it watches for a "Return" and ends input at that point.

Re 4): There's no sure-fire way to know when a user is finished editing text (unless you go with the **ACCEPT** approach). He may simply have gone to have a lie down and will come back and edit it further when he gets up. :) To figure out when a user is finished, you can either watch the field until it has the right number of characters in it (rare, but I did it in ISBN), or you can have a button for the user to press to process the information entered (this is the usual approach).

Neal

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 07:22 pm:

input.txt itself makes a lousy subject for study. It's complicated, and in fact was written to save you from having to know how it works -- to give you a simple tool for accepting text in a pop-up box.

I can try and break it down in detail if you wish.

Neal

By [Dave Ruske](#) on Monday, March 13, 2000 - 09:44 pm:

Thanks Neal and Jim, this clears up the fog about what **EKEY** won't handle and why `eventhandler` is still useful for the exceptional cases. Just what I needed!

By [Barry Marks](#) on Monday, March 13, 2000 - 10:57 pm:

That explains a lot but I don't think I see the picture yet.

Which events do fields handle for themselves? Which do I handle?

In an interactive form where the user can go from field to field changing things, does my program watch every keystroke and penstroke and handle it and accumulate it in a buffer and back it out if there's a backspace?? Or does the field handle those? Or ekey? I can't tell that from input.txt yet.

If the user pushes a button to indicate that he's done, does ekey give me a pointer to some text or to a structure containing a pointer to some text. Or do I build that myself?

It seems like accept would be clumsy for a form with more than one field. Maybe that's because I misunderstand what a gui does. In c or asm I would write something like accept for just that purpose. But I thought that was sort of anti-gui.

It seems like input.txt is the cleanest example of what I want to do. Except I want to be able to do it in a form of my own and have more than one field on that form.

I've looked through other programs to see how they do it but I get pretty lost in them. At least in input.txt I can find the parts that actually do something about getting data from a field. Now if I just know what it was doing. :)

Maybe I'm fighting the weather. I'll play with accept and see what happens.

Barry

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 11:21 pm:

ACCEPT is not a tool for use in a GUI application; it's just a cheap and easy way to read in a string of text. I mentioned it only as an example of special field processing.

Palm OS field objects handle all editing for you, text selection, cursor movement, backspace, all of that. If you have an edit menu, fields will also handle cut and paste for you. Whole ball of wax.

What your app has to do is wait for the user to indicate he has filled the fields by pressing a button on your form. When you see that, you read the strings from the fields, validate the inputs, and process them accordingly into a result for the user.

Download Carl Jacobsen's PhoneDecode from PalmGear -- it comes with source and is a pretty good example of how it's done.

Neal

By [Barry Marks](#) on Tuesday, March 14, 2000 - 12:38 am:

Thank you. Now I see what you mean. I was thinking of handling each field as it was completed. When the form is complete then I get the text from all the fields. That makes sense. It just never occurred to me.

Barry

By [Neal Bridges \(Nbridges\)](#) on Tuesday, March 14, 2000 - 01:38 am:

That's it! GUI programming consists fundamentally of handing a pre-coded interface to the OS. The OS displays this for the user; the user fiddles with the GUI objects (fields, menus, buttons). The OS manages each GUI object accordingly (editing a field, lighting up a button, dropping down a menu, etc.) and each of those actions returns certain events to the app, to be acted upon.

Neal

By [Travis Casey](#) on Tuesday, March 14, 2000 - 04:38 pm:

Something that illustrates that PalmOS handles events for you... if you make a form that has a text field and simply have Quartus display it for you, you'll be able to tap on the text field, write in it with Graffiti, select text in it, etc. All that's handled automatically behind the scenes.

The only time you normally have to write code to do anything is to get the information out of the field and do something with it, or insert something into a field.

--Travis

By [Neal Bridges \(Nbridges\)](#) on Tuesday, March 14, 2000 - 04:42 pm:

Correct Travis. In fact, if you are working in RsrcEdit and ask it to preview any form, you'll see that form on-screen and be able to bring up its menus, pop-up lists, tap on its buttons, and put text in its fields -- nothing will happen when you do any of that, of course, as that requires an application to be watching the form events and acting accordingly.

Neal

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Getting an Icon onto my .prc

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Getting an Icon onto my .prc

By **John Oliver** on Sunday, March 12, 2000 - 08:36 pm:

I am unsuccessful in understanding how to get my app to have the icon of my choice. I have tried the make-duco example but in the app launch window the Duco I make has an icon similar to that of Quartus rather than the icon in the bitmap file. I do not understand the 1000 in

1000 (ID) tAIB copyrsrc \ large icon

just how does this reference the icon in IconBig.bmp ?

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 12, 2000 - 08:42 pm:

IconBig.bmp is processed by PilRC, and becomes part of the resource database called DucoRsrc.PRC. Specifically, the bitmap becomes resource 'tAIB 1000'.

DucoRsrc.PRC needs to be installed on your Palm for you to compile Duco.

In *duco.txt*, the line

(ID) p4ap (ID) Duco use-resources

opens that resource database. The various **copyrsrc** commands in *MakeDuco.txt* copy those resources out of DucoRsrc.PRC and into the stand-alone app.

An alternative to PilRC is to use RsrcEdit, directly on the Palm; it lets you draw/edit your icon on-screen.

Neal

By **John Oliver** on Sunday, March 12, 2000 - 09:46 pm:

I had all that correct ... my two problems were:

a) Vfdide was generating a different resource with rsrc ID 1000, and after I fixed that I found that I had my prefs set on display by list (ie small icons) rather than display by icon. All better now.

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 12, 2000 - 10:50 pm:

Great!

Neal

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Help! Problem with COMPARE?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Help! Problem with COMPARE?](#)

By [Wade Carlson](#) on Sunday, March 12, 2000 - 12:11 pm:

This is a repost of Edin Hodzic's message on March 1st, it doesn't appear as if it has been resolved. I too am having problems with my program, and I've narrowed it down to a problem with COMPARE, which is why I think he is having problems too.

Here is his code snippet again:

```
\ cmp
needs ids
needs syncname

: cmp
  1000 showform
  username s" demo" drop over
  2over type cr
  2dup type cr
  compare
  0= if ." match" else ." mismatch"
  then
  begin key drop again ;

' cmp (id) XX13 makeprc cmp
```

Whatever Palm OS you compile it on, it seems to run fine, but if you then run the compiled app on a different Palm OS version ON THE EMULATOR, it seems to crash or return the wrong results. For example, I compiled it using OS 3.1, but it crashes on both OS 3.5 and 3.02. Interestingly, it runs fine on both OS 3.5 and OS 3.02 if it is NOT compiled but run directly from the Forth console. I've narrowed it down to being a problem with the word COMPARE. Any help?

p.s. I'm using 3.0a4 version of the emulator.

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 12, 2000 - 01:15 pm:

It's a bug in COMPARE when moving stand-alone apps between ROM versions. Fixed in the impending update!

Neal

By [Barry Marks](#) on Sunday, March 12, 2000 - 01:20 pm:

What is impeding the update? :)

Barry

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 12, 2000 - 01:21 pm:

Hehehe. Well as you can see my 'N' key is not always working, so it's been slow going.

:)

Neal

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 12, 2000 - 02:04 pm:

Wade had an urgent need for the COMPARE fix; I've generated an interim build for him (just sent). If you have a similar requirement, drop me a line.

Neal

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 12, 2000 - 02:10 pm:

A little background on this bug: when Palm released OS3.3, they changed the internal font sorting tables to suit their needs. The registration system in Quartus Forth was making use of this table, and didn't expect it to change, so it broke.

To fix this, I internalized the correct sort table, and released an update some time back for OS3.3. The COMPARE bug occurred because COMPARE uses that sort table too, and the table wasn't set to export during stand-alone compilation.

I've corrected that now; COMPARE now relies on the sort-order table of the OS in which the stand-alone app is running.

I suspect COMPARE is not widely-used, or this would have turned up months ago. Sorry for the inconvenience!

Neal

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Vector graphics anyone?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Vector graphics anyone?

By **[Philippe de Rochambeau](#)** on Saturday, March 11, 2000 - 05:11 pm:

Has anyone ever tried "playing" with vector graphics in QForth? I would like to be able to open small vector graphic files in QForth and, say, enlarge them. I have no experience whatsoever in that area. Can anyone help me? What vector graphic format should I use on a Palm? How do you read a vector graphic file in QForth?

By **[Serg Koren](#)** on Saturday, March 11, 2000 - 07:21 pm:

I started working on a 3d vector graphics library for Quartus a while ago. I had also released one for WinCE, but there wasn't enough interest in it to justify maintaining it or releasing a Quartus version.

<http://www.VisualNewt.com/Visual3d.html>

S

By **[Barry Marks](#)** on Saturday, March 11, 2000 - 07:30 pm:

A simple vector file to play around with is the .plg format that was used in one of the vector graphics books I looked through at Borders. I don't remember which one. This is just for simple wireframe stuff but it could be used for more sophisticated things. It's simplicity makes it nice for experimenting. I used it to learn to do simple transformations.

There is a simple example below.

```
; Lines begining with ; are comments
; Blank lines are ignored
; There are 3 sections: header, vertex list
; and polygon list.
; Each line in the vertex list represents a
; single vertex
; Each line in the polygon list represents a
; single polygon
; Vertex numbers in the polygon list refer
; to vertices in the vertex list in the
; order in which they appear in the vertex
; list.
; Additional objects can follow in the file.
```

```
; header
; object_name vertices faces
pyramid 5 5
```

```
; vertex list  
; x y z  
0 20 0  
30 -10 30  
30 -10 -30  
-30 -10 -30  
-30 -10 30
```

```
; polygon descriptors list  
; color num_vertices vertices  
10 3 0 2 1  
10 3 0 3 2  
10 3 0 4 3  
10 3 0 1 4  
10 4 1 2 3 4
```

By [Philippe de Rochambeau](#) on Sunday, March 12, 2000 - 09:07 am:

What is Borders?

By [Dave Bennett](#) on Sunday, March 12, 2000 - 11:56 am:

Borders is a book store here in the US.

By [Garth T Kidd \(Garth\)](#) on Sunday, March 12, 2000 - 03:30 pm:

Funnily enough, I was pondering 3D graphics whilst flying back home on Saturday -- we were passing over a particularly *nice* bit of desert and I was thinking how nice it'd be to have a world globe running on the Palm upon which I could jot down GPS co-ordinates for later. Or something. :)

Serg, your link is 404 because the final D isn't capitalized. For those who couldn't be bothered re-typing it:

<http://www.visualnewt.com/Visual3D.html>

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"Dynamic" rectangles

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

"Dynamic" rectangles

By [Matthew Blair \(Blair\)](#) on Saturday, March 11, 2000 - 03:22 pm:

Hi,

Trying to create a routine where the user can put the pen down and visually drag a rectangle (no fill). So here's my rudimentary take on it...

needs condthens

needs graphics

needs Events

variable x

variable y

variable h

variable w

```
: draw-rectangle ( ekey -- )
  cond
  dup PenDownEvent = if
    coords@ x! y! 0 dup h! w!
  else dup PenMoveEvent = if
    h @ w @ y @ x @ simpleframe erase-frame
    coords@ x @ - sway y @ -
    swap 2dup w! h!
    y @ x @ simpleframe frame
  thens drop ;

: go
  begin ekey draw-rectangle again ;
```

Now, I know that this is very unoptimized, but basically the point is to store the beginning coordinates upon PenDownEvent, and then to erase the previous rectangle frame before drawing the new rectangle frame (on a PenMoveEvent). Oh, **erase-frame** is an addition to the *graphics* library. Simply copied **frame** and substituted **WinEraseRectangleFrame** in.

The problem: the rectangle as drawn doesn't look very good. The right side of the rectangle is always a few pixels thicker than the rest of the frame. Could anybody see what I'm doing wrong?

Thanks,

Matthew

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 12, 2000 - 01:20 pm:

What is 'simpleframe' defined as?

Neal

By [Matthew Blair \(Blair\)](#) on Sunday, March 12, 2000 - 03:44 pm:

'simpleframe' is defined in the *graphics* library file as the constant '1'. Strangely enough, when I re-ran the code last night, the problem only occurred sporadically. I think that the flaw lies in the fact that my first stab at this assumes that the user draws from the upper left to the bottom right. Still working on it though.

By the way, I've seen a couple of posts here where you indicate that a certain word, implemented in a particular way, generates xx bytes of machine code, but implemented another way generates yy bytes. How do you make that determination? Via **csunused**?

Matt

By [Garth T Kidd \(Garth\)](#) on Sunday, March 12, 2000 - 05:20 pm:

I had some fun fixing the copy-and-paste, there. :) Okay, so how would we go about copying the pixels from underneath the frame so that we could put them back when the frame moved?

By [Matthew Blair \(Blair\)](#) on Sunday, March 12, 2000 - 08:25 pm:

I think that you would use **WinSaveBits** to copy the pixels and **WinRestoreBits** to put them back. I could be wrong though -- I haven't actually tried it yet.

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 12, 2000 - 08:33 pm:

That should work, Matthew.

Neal

By [Garth T Kidd \(Garth\)](#) on Monday, March 13, 2000 - 04:29 am:

I'm about to give it a shot as an exercise.

By [Garth T Kidd \(Garth\)](#) on Monday, March 13, 2000 - 05:31 pm:

Okay, here's my first-timer code. First, some words I defined to make my code a little easier for me to follow:

```
\ is this negative?  
: isneg  
  0 < if 1 else 0 then ;  
  
: 4dup  
  3 pick 3 pick 3 pick 3 pick ;
```

```
: pairflip ( n1 n2 n3 n4 - n3 n4 n1 n2 )
  3 roll 3 roll ;
```

I'm sure there are better ways of doing some of these, but also suspect that optimizing the next routine is a better idea. :)

The following routines normalises a set of coordinates on the stack. This avoids the problem where PalmOS can't deal with drawing a rectangle if the height and width are negative:

```
\ normalise a single ( h y ) or ( w x )
: normcoord ( h y -- newh newy )
  swap dup isneg
  if
    dup abs ( y h newh )
    rot rot +
  else
    swap
  then ;
```

```
\ normalise coords if necessary
: normrect ( h w y x )
  3 pick 3 pick ( h w )
  isneg swap isneg or
  if
    \ and here, we should flip it
    rot swap ( h y w x )
    normcoord pairflip
    normcoord pairflip
    swap rot rot ( h w y x )
  then ;
```

It's ugly, but it works! Finally, the new version of the original:

```
: draw-rectangle
  cond
  dup PenDownEvent = if
    coords@ x ! y ! 0 dup h ! w !
  else dup PenMoveEvent = if
    h @ w @ y @ x @
    normrect
    simpleframe erase-frame
    coords@ x @ - swap y @ -
    swap 2dup w ! h !
    y @ x @
```

```
normrect
simpleframe frame
thens drop ;
```

Is this just a little **too** stack-intensive? I keep having machine-code flashbacks and desperately wanting to use registers.

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 06:58 pm:

PICK and **ROLL** give me a nasty pain in my head whenever I see them. The single best thing to do is not to use them unless violently forced to do so.

Here are some shortcuts:

Use **0<** instead of your **isneg**.

Use **2SWAP** instead of your **pairflip**.

It looks as though you're not using **4DUP** anywhere, which is good. If needs must, here's a better **4DUP**, avoiding the use of **PICK**:

```
: 4dup 2over 2over ;
```

In **normrect**: use **2OVER** instead of **3 pick 3 pick**.

Whew! **PICK** and **ROLL** gone! Yay! :)

That should make the code a touch more readable -- let me see those changes incorporated and I'll let you know what else might streamline it.

Neal

By [Garth T Kidd \(Garth\)](#) on Monday, March 13, 2000 - 07:21 pm:

2swap and 2over are definitely friends. Thanks!

After applying those modifications, I noticed that **normrect** was testing **h** and **w** and calling **normcoord** if either was negative. This was a bit of a waste, as **normcoord** also makes the test.

Upshot: the code might be arguably faster for dragging down-right, but for the others it's a lot slower than it should be:

```
\ normalise a single ( h y ) or ( w x )
: normcoord ( h y -- newh newy )
  swap dup 0<
  if
    dup abs ( y h newh )
```

```

    rot rot +
else
    swap
then ;

```

```

\ normalise coords if necessary
: normrect ( h w y x )
  2over
0< swap 0< or
  if
  \ and here, we should flip it
  rot swap ( h y w x )
  normcoord 2swap
  normcoord 2swap
  swap rot rot ( h w y x )
then ;

```

Solution: run normcoord all the time.

```

\ normalise coords if necessary
: normrect ( h w y x )
  rot swap ( h y w x )
  normcoord 2swap
  normcoord 2swap
  swap rot rot ( h w y x ) ;

```

Now I'm going to try and figure out how to call WinSaveBits. :)

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 07:24 pm:

Joy! Neither PICK nor ROLL! :)

When you say 'slow' -- is it noticeably slow to run, or are you just saying it could be more efficient from a code-perspective? I haven't tried it directly yet, but it looks to me like it would be quite quick.

Neal

By [Garth T Kidd \(Garth\)](#) on Monday, March 13, 2000 - 08:36 pm:

On the emulator, *everything* is slow. :) On my overclocked Vx, it's pretty speedy indeed.

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 08:38 pm:

Beware overclocking! Eventually it will give you random memory errors. Wait-state adjusters like CruiseControl seem to be just fine, however.

Neal

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Quartus is Biblical

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Quartus is Biblical](#)

By [Jim Hendricks \(Jimh\)](#) on Saturday, March 11, 2000 - 01:40 pm:

Neal, I though you would get a kick out of this if you didn't already know, Quartus is in the Bible!

Romans 16:23, aparently Quartus was some guys name!

Just though I would pass this along.

Jim

By [Ron Doerfler](#) on Saturday, March 11, 2000 - 06:13 pm:

He-he! I recall someone mentioning a long time back that the large Quartus icon, that has on it 0110110110, can be broken down into 0110 110 110, or 666. Not to mention the biblical quote to "Go forth and multiply." 8^)

By [Neal Bridges \(Nbridges\)](#) on Saturday, March 11, 2000 - 06:21 pm:

It was common in Roman times to name your fourth son "Quartus". Guess what the first three names were?

Neal

By [Jim Hendricks \(Jimh\)](#) on Saturday, March 11, 2000 - 07:06 pm:

Nah, can't be 666, that's the mark of the beast, now if we were talking about something from Microsoft, I know of a few things from them that qualify as beasts!

Shouldn't it be "forth go multiply and" ?

Couldn't guess at the 1st three but there is a reference in the Bible to Onesimus, I don't know whether that name is for a first born son or not but it was during Roman rule.

Jim

By [Ron Doerfler](#) on Sunday, March 12, 2000 - 03:05 pm:

> Shouldn't it be "forth go multiply and" ?

: go begin multiply again ;

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 12, 2000 - 10:53 pm:

: go (n1 n2 -- n3) * ;

Neal

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More annoying color questions

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

More annoying color questions

By [E.](#) on Saturday, March 11, 2000 - 01:35 pm:

Okay. Since RsrcEdit doesn't (currently) do color, and since I really don't feel like REing how it handles color bitmaps (looks possible but really tiresome), I had an idea.

Tell me, is this feasible, or more trouble than it's worth?

Imagine an archery target (sort of), with a center circle and 3 colored rings. Divide it into 4 quarters, so that there are 16 distinct areas. The segments in each quarter each going to be the same color, but must be distinct. I figure a black border will do that.

I want this to run on any Palm(-ish) device, b/w or color So, I figure I make 16 bitmaps (wasteful, but graphics transformation is not soething I'm good at). One for each segment, yes? Now, I make 16 MORE bitmaps, each corresponing to the segment, but a little smaller, so that there's a one-pixel border around them (compared to the original 16 bitmaps).

When I want to draw a segment, I do this:

Draw the large segment in black.

If device handles color (OS check, or something else?), draw smaller segment in (e.g.) red, otherwise draw it in "white".

Am I making sense? I thought this up last night as I was going to sleep, and am posting it now, pre-caffeine.

Will a simple OS check tell me if the device is color-capable, or is there a better way? If it's not color-capable, I'd like to use white (well, "white"; no pixels on) and not a grayscale of any sort. I think this will land me in trouble with b/w Palms with OS 3.5, yes? Unfortunately, I can't think of a better way to do it.

By [E.](#) on Saturday, March 11, 2000 - 01:40 pm:

Hate to follow-up myself, but I just came up with another question that I had been meaning to ask. It doesn't relate to the previous question, but it's about color (well, CAN be), and it's annoying, so here goes:

Is there any sort of "fill" routine, other than "draw rectangle and chip away at it"? Never having done much in the way of graphics, I have no idea how to do one efficiently, so I don't know if it'd be hard to do. I'd try to write one, but there's GOT to be a better way than the stupid "algorithm" I just thought up. I don't want to re-invent a square wheel.

By [E.](#) on Saturday, March 11, 2000 - 11:23 pm:

Okay, since it seems to be impossible to draw "white" (XOR style, not overlay), and since I've had much caffeine, I've rethought my plan.

Make a black-bordered bitmap. If it's color, draw red inside of it.

Y'know, that won't work either, will it? When I draw the red one, the 0s on the outside of the red will overwrite the black, yes?

So I either make two sets of bitmaps (black outline or red w/black outline) and draw the appropriate one depending on color capability of the machine, or (yeah, like this is gonna happen) use the find-pixel-color routine in the new OS to write WinXORBitmap.

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 12, 2000 - 12:00 am:

The simplest solution is to make family-bitmaps that have both monochrome and colour bitmaps them. The OS will automatically draw the one that fits the current screen depth best.

Neal

By [E.](#) on Sunday, March 12, 2000 - 01:02 am:

I'm sure that that's the simplest solution, but the only consistent platform I have (with any reasonable availability) is my Palm.

Besides, I've been toying with the idea of doing a one-form app (as far as RsrcEdit knows; do the rest dynamically), and this would just be an extension of that concept. Painful, but DAMN would it be educational.

By [Jim Hendricks \(Jimh\)](#) on Monday, March 13, 2000 - 09:40 am:

Don't think I see a potential solution for the FILL question posed by E. in the second message. I too am interested in a graphic FILL methodology. I am real close to posting a clock app I threw together from some C source and the hands of the clock are triangular with the points calculated. In order to fill in the hands, numerous calculations are made to plot additional points within the triangle so that drawing lines can accomplish the fill. I don't like this solution, I am looking for something similar to LOGO's fill where you position the turtle within the outline of your closed shape then issue FILL. Since I don't know the internals of LOGO, I don't know how the fill is completed but my assumption is it scans the screen row by row, following the outline to determine points within the shape and turning them to the fill color. Any possible solutions to this? I am willing to play with this and implement it if someone can at least give me a p-code concept, and some pointers to the necessary Palm OS calls to use for reading points on the screen (that is if reading points on the screen are necessary to complete this)

Jim

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 12:29 pm:

A recursive seedfill algorithm is easy to implement -- the trouble is that there isn't a lot of stack space available on the Palm, and such an algorithm eats stack space like crazy, so you could

only use it to fill small areas.

Search for 'non-recursive fill algorithms' and you may turn up something useful.

On another note, I believe OS 3.5 allows you to draw bitmaps in "and" and "or" modes. I'll have to check on that.

Neal

By [Jim Hendricks \(Jimh\)](#) on Monday, March 13, 2000 - 03:01 pm:

Got what appears to be a good hit on a fill routine, will have to pull it apart and see if it's worth implementing on Quartus.

Jim

By [Barry Marks](#) on Monday, March 13, 2000 - 06:34 pm:

I have some code and/or pseudo code or algorithms I've found from time to time and put in my badly scattered collection of algorithms. I've never used them. It will take a little digging but I'm sure I can find several.

I do know there is a variation on the simple recursive fill algorithm that does the whole line to the border color instead of just doing the pixel. It's supposed to use much less stack space. I'm sure I have it somewhere. In fact, it's explained in the "Programmer's Guide to PC and PS2 Video Systems" by Richard Wilton. That's where I first heard about it. I have that but no scanner. I do have the code disk though.

I bought my Palm IIIc today so I'll probably get curious about how this stuff works too. After I figure out how to input text.

Barry

By [E.](#) on Monday, March 13, 2000 - 07:48 pm:

Ahhhh. You noticed that too, did ya?

Tell me, is it sporadic for you? About half the time, it works fine. The rest of the time, I have to enter the wrong letter and backspace (and by "backspace", of course, I mean "enter a punctuation dot and try to backspace again, over and over, until I get two backspaces in a row") over it a few times.

The most annoying part is that it'll switch from Working to Not So Much Working at random.

Well, it's probably not random. Just something I can't figure out.

And it's STOCK, too; no hacks, hell, even before I had installed any 3rd party apps. Grrrr.

By [Garth T Kidd \(Garth\)](#) on Monday, March 13, 2000 - 07:50 pm:

Given the 68K heritage, I'm somewhat surprised PalmOS doesn't have the same kind of fill and draw-through-this-shape routines that the ol' Mac did. Now a few hundred thousand PalmOS developers are all going to write their own @*#^%T@(* fill routines?

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 08:16 pm:

That might be a bit of an overreaction, Garth. I like the Palm OS's lean approach; too many systems sink into the swamp of featuritis.

Neal

By [Garth T Kidd \(Garth\)](#) on Tuesday, March 14, 2000 - 08:18 am:

True, but I can see a lot of needless duplication about to happen unless (say) Macromedia or Adobe publish libraries for some of the work they're doing on porting Flash and Acrobat to PalmOS. That'd be nifty.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, March 14, 2000 - 09:25 am:

Really, though, how many apps need a general purpose flood fill routine?

Neal

By [Jim Hendricks \(Jimh\)](#) on Tuesday, March 14, 2000 - 09:50 am:

Barry, I would be interested in your routine if you can dig it up. The routine I located while not recursive does seem to be stack heavy. I was looking into either creating or finding a border walking algorithm that would walk around the border and fill concentric inward. This would be slower, but no real stack intensity. Only problem would be when the inner circuit closes on itself at some point thus orphaning area's from the fill. I like the raster approach taken by the seedfill, just can't seem to make the mental leap to minimizing stack utilization.

Jim

By [Jim Hendricks \(Jimh\)](#) on Tuesday, March 14, 2000 - 09:54 am:

I would agree with Neal on the featuritis!

Maybe if more software shops built their code on libraries where only the app specific stuff is in the app. Then publish the API to the library. This was the general idea behind MathLib. This was suppose to be the idea behind Windows DLL's as well.

Jim

By [Barry Marks](#) on Tuesday, March 14, 2000 - 03:01 pm:

I sent the algorithms/code that I could find quickly.

A library of graphic primitives might be a nice thing. I guess most are covered in PalmOS but I wrote a library of primitives for the 200lx that duplicated it's rom based library and was about

20 times faster. Not that I'm so fast, but the rom routines were very slow.

Hmmmm....DirectX for the Palm. :)

Barry

By [Neal Bridges \(Nbridges\)](#) on Tuesday, March 14, 2000 - 03:05 pm:

I've just finished a raster-based routine that has a maximum stack-depth of 260 or so, for a fully-filled screen. I'll tune it up and post it.

Neal

By [Jim Hendricks \(Jimh\)](#) on Tuesday, March 14, 2000 - 03:53 pm:

Thanks Barry for the algorithms/code, they make interesting reading. Now to find the time to play with them!

Jeez Neal, gotta be careful what you wish for around you, you done gone ahead and

implement it! 

Jim

By [Neal Bridges \(Nbridges\)](#) on Tuesday, March 14, 2000 - 04:08 pm:

Hehe. Not to steal anybody's thunder; my implementation may well not be the best or the fastest. I had a few minutes to play with it, though, and so I rolled one together.

Neal

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 02:12 pm:

New in the Contrib section: [floodfill.txt](#). NOTE: you need the latest version of color.txt to use it (a bug was fixed earlier today).

The important function:

floodfill (y x --)

It's a neat little floodfill routine or PalmOS 3.5 and later. It will fill any bounded area on-screen, any shape, with the current drawing color. Do not try to fill an unbounded area, or an area that runs right to the edge of the screen.

Here's how you use it:

```
needs floodfill
needs colornames
```

```
: go
MainForm
white background
WinEraseWindow
black foreground
20 80 80 circle
yellow foreground
80 80 floodfill
begin key drop again ;
```

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 16, 2000 - 10:30 am:

There was an incorrect stack diagram comment on the **fill-line** function; I've corrected it.

Neal

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FLOOR and FROUND

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

FLOOR and FROUND

By **[Barry Ekstrand](#)** on Friday, March 10, 2000 - 01:36 pm:

Neal,

In playing with floats recently I found that if I use FLOOR or FROUND on a floating point value greater than what appears to be the upper limit for double width values (~2.1e9) a crash results. I would have thought that FLOOR and FROUND would work up to the limit of floating point values. Am I missing something here?

Thanks,

Barry

By **[Neal Bridges \(Nbridges\)](#)** on Friday, March 10, 2000 - 01:54 pm:

They should, Barry. It sounds like a bug; I'll check on it.

Thanks for letting me know!

Neal

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Problem with form

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Problem with form

By **John Oliver** on **Friday, March 10, 2000 - 08:26 am:**

When I follow the Duco example, using pilrc and pila to create DucoRsrc.prc, hot sync it and duco.txt, and then include duco.txt, "go" works fine, but if I do just "clear show-panel" I get

FatalError

Form.c,Line 1272,Object not in form

Why?

By **[Neal Bridges \(Nbridges\)](#)** on **Friday, March 10, 2000 - 10:01 am:**

The Quartus Forth console requires that the active form have a specific field resource, 1103. If it doesn't find it, you get 'object not in form'.

clear show-panel key drop mainform

is one solution, or you can copy and paste the field resource from tFRM1000 inside Quartus Forth into the form you're using.

Neal

By **John Oliver** on **Friday, March 10, 2000 - 02:00 pm:**

OK

a) how does

clear show-panel key drop mainform

work ? It must be the "mainform" but I don't want the Quartus default form, I want my form

...

Obviously, I need to know more about the default form and its resources ... how do I find them?

b) how do I do the copy & paste. I'm sorry to be so dense but I just don't see how either solution works and I do not want to just do it "because".

By **[Neal Bridges \(Nbridges\)](#)** on **Friday, March 10, 2000 - 02:12 pm:**

No problem John -- sorry my explanation didn't go into more detail.

To view and copy bits of resources, use RsrcEdit, available at <http://www.individeo.net>.

MainForm is 'tFRM 1000' in Quartus. The other forms, 'tFRM 1001' and 'tFRM 1002' also have

the field resource in them.

With a copy of that field object in your own form, the Quartus Forth console will be quite happy to take new commands from you while your form is on the screen. Your forms display will be overwritten by the console input line, though, and if the screen scrolls, your form will scroll with it.

Neal

By **John Oliver** on Friday, March 10, 2000 - 02:17 pm:

So this is a problem 'cause I am working in the Quartus console ... it would not be there in the stand-alone application.

I have RsrcEdit ... just not enough nerve yet to try it.

Thanks

By [Neal Bridges \(Nbridges\)](#) on Friday, March 10, 2000 - 02:21 pm:

Right, the console is not part of a stand-alone app. But I'm not quite understanding why it presents a problem for you now -- do you have a pressing need to have the Duco form on-screen while you enter commands at the console?

Neal

By **John Oliver** on Friday, March 10, 2000 - 03:58 pm:

Not at all ... I just was not thinking clearly about all that was going on in my little box ... I wanted to verify that my form really looked like I expected and though "Ha .. just showform" ... the crash threw me ... I would have survived seeing the form flash and Quartus console reappear. I will create a little display and wait for key routine and all will be fine.

By [Neal Bridges \(Nbridges\)](#) on Friday, March 10, 2000 - 04:24 pm:

I could force the main form to be redisplayed when the console is needed -- but that's the more limiting direction to go. I prefer to leave it open, and allow the developer to limit his own environment as he sees fit.

Neal

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Making "helper" words

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Making "helper" words](#)

By [Matthew Blair \(Blair\)](#) on Thursday, March 9, 2000 - 09:16 pm:

Hi,

I've been thinking lately about some of the "helper" words in Quartus Forth, such as (ID). I've looked at the definition, and don't quite understand everything that's going on (as usual). So I thought if I posted an example of a helper word I'd like to see, perhaps some kind soul could show how that word might be implemented and detail the more difficult steps.

The example: a helper word to create an array which can be accessed in the same way as "C"; e.g., "foo[5]" or "foo[index]".

Thanks for any help,

Matthew

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 9, 2000 - 09:32 pm:

That might not be the best example, as `array` is already defined in *toolkit*.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 9, 2000 - 10:27 pm:

It occurs to me you may be looking to actually use that `[]` syntax. I think that would be counterproductive, as it is a prefix notation; it'd have to be turned-around into a postfix notation every time it was encountered.

You'd also have to determine whether you're interpreting, or compiling, and perform the right action. So overall it's a bit of step to the left in terms of added functionality.

The *toolkit* `array` is nice and neat:

```
15 array f
42 5 f !
5 f @ . -> 42
```

One way to pretty it up is like this (bear in mind it's just syntactic sugar, though):

: { ; immediate \ a null operation

```
15 array }f
42 { 5 }f !
{ 5 }f @ . -> 42
```

Neal

By [Matthew Blair \(Blair\)](#) on Friday, March 10, 2000 - 07:44 am:

My choice of example may have been poor, but I think that I'm getting what I wanted to understand. I'll need to think more about what it is I'm confused about before I post any more.

Going off-topic: can [here](#) be used in a compiled stand-alone app? I seem to remember Erwin telling me that relying on PAD was a bad idea in a stand-alone app, and I think it was due to the use of [here](#).

Matt

By [Erwin Schomburg](#) on Friday, March 10, 2000 - 08:33 am:

You can compile stuff into .prc's that uses HERE to determine places for data to go to, just make sure you have its value adjusted accordingly. Adjustment is either implicit (e.g. using the comma operator) or explicit by using allot.

The point I made was that compiled applications may only safely use static dataspace up to the address HERE pointed to at the time the application was compiled.

The common definition of PAD as also given in the library module floats PAD 84 bytes above HERE, so it can not be safely used in a compiled application. The extension of the point made was, that you need to make your own definition of PAD, reserving a buffer in the safe area in the form

```
create PAD 84 allot
```

if you want to use it in a compiled application. A caveat here, if you want to use certain old code that tucks scratch-data stacklike under the address PAD points to, you need to create a safe area underneath PAD as well, in that case the definition should look like

```
84 allot  
create PAD  
84 allot
```

And while we are still in off-topic mode, here is an example to directly compile counted strings into dataspace as found in some Forth variants:

```
variable smark  
: ," ( <ccc"> --- )  
[char] " parse tuck here dup smark ! 1+ swap move  
dup here c! 1+ allot ; immediate
```

Usage:

```
create hello ," Hello World!"  
hello count type
```

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Friday, March 10, 2000 - 10:03 am:

Here's an even simpler ,":

needs toolkit

```
: , " ( <ccc"> -- )
  [char] " parse place, ;
```

Neal

By **Erwin Schomburg** on Friday, March 10, 2000 - 10:30 am:

True, but I needed the hooks to be able to directly append using i.e.

```
: +,"
[char] " parse tuck smark @ dup c@ + 1+ swap
move dup smark @ dup >r c@ + r> c! allot ;
immediate
```

since the size of the parse buffer does not allow for really long strings.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Friday, March 10, 2000 - 10:33 am:

I see! Working on that Pentominoes code I presume.

Neal

By **Erwin Schomburg** on Friday, March 10, 2000 - 10:43 am:

Since you asked, I can generate the BIG strings, I have a working DEFER/IS combo, but I get crashes when compiling through the

```
....
[ testsq ]
....
```

part in :noname, at about the fourth (no pun) recursion in testsq.

/Erwin

By [Matthew Blair \(Blair\)](#) on Friday, March 10, 2000 - 10:58 am:

Neal,

How does your , " word work? I've been through the definition, but am not quite getting it.

Also, what does **immediate** do?

Matt

By [Neal Bridges \(Nbridges\)](#) on Friday, March 10, 2000 - 11:09 am:

Erwin, what sort of stack depth is required for each instance of **testsq**?

Neal

By **Erwin Schomburg** on Friday, March 10, 2000 - 11:15 am:

Not Neal, just me. Neal's does pretty much the same as mine, utilizing PLACE, (in turn using PLACE) from

the toolkit library module.

/Erwin

By **Erwin Schomburg** on **Friday, March 10, 2000 - 11:21 am:**

I think TESTSQ adds two cells per turn onto the data stack. Need to check what it does to the return stack, ha.

/Erwin

By **Neal Bridges (Nbridges)** on **Friday, March 10, 2000 - 12:00 pm:**

Matthew, an IMMEDIATE word is one that runs at compile-time, instead of being compiled to be run later.

Non-immediate:

```
: hi ." Hello" ;  
: go hi ;  
go -> Hello ok
```

Immediate:

```
: hi ." Hello" ; immediate  
: go hi ; -> Hello ok
```

As you can see, in the first example, "Hello" is printed when 'go' is run; in the second example, "Hello" is printed while 'go' is being compiled.

Neal

By **Matthew Blair (Blair)** on **Friday, March 10, 2000 - 12:18 pm:**

OK. I see the distinction (good example)! But why is that useful?

Matthew

By **Erwin Schomburg** on **Friday, March 10, 2000 - 12:24 pm:**

Classic example would be IF ELSE THEN, those need to IMMEDIATEly run when the definition they are in is compiled, i.e. generate the jump labels for the respective branches into the code under compilation.

/Erwin

By **Neal Bridges (Nbridges)** on **Friday, March 10, 2000 - 01:16 pm:**

Right, IMMEDIATE words take some important action at compile-time, rather than having a simple 'call' to themselves compiled in.

\ and (are immediate words, for instance -- allowing comments to be skipped within definitions.

Neal

By **Matthew Blair (Blair)** on **Friday, March 10, 2000 - 01:47 pm:**

Alright, I'm going to put this thread back on topic again :^) I've searched through the library, and z" makes sense to me as an immediate word. With that in mind, here's the definition of z":

```
: z" ( ...<"> -- runtime: c-addr u )
  [char] " parse 0 over here + c!
  postpone sliteral 1 allot ; immediate
```

Could either of you walk me through the definition here, particularly with respect to parse, postpone, and sliteral?

Matt

By [Neal Bridges \(Nbridges\)](#) on Friday, March 10, 2000 - 02:07 pm:

```
: z" ( ...<"> -- runtime: c-addr u )
\ Scan the text in the input buffer up to the next double-quote, returning the
address and length:
  [char] " parse ( -- addr len )
\ Store a zero in the byte just past the end of where SLITERAL will put literal
string in dataspace:
  0 over ( addr len 0 len )
  here + ( addr len 0 here+len )
  c! ( addr len )
\ Compile the ( addr len ) as a literal string in dataspace:
  postpone sliteral ( )
\ Increment HERE past the extra zero-byte we stored earlier:
  1 allot
; immediate
```

SLITERAL is itself an immediate word that will take an address and length and compile them as a literal string in dataspace, and add code to the current definition that will later place the address and length of that literal string on the stack.

```
create mystring char H c, char i c, char ! c,
```

```
: sliteral-example
  [ mystring 3 ] sliteral ;
```

```
sliteral-example type -> Hi!
```

In z", by using POSTPONE, we tell the compiler that we don't want to perform SLITERAL in *this* definition, but in whatever definition is active when z" is encountered.

POSTPONE = take the compilation-action of this word and do it later, rather than now.

Neal

By [Matthew Blair \(Blair\)](#) on Friday, March 10, 2000 - 02:27 pm:

Neal,

If instead you wrote the definition of z" like so:

```
: z" ( ...<"> -- runtime: c-addr u )
  [char] " parse 0 over here + c! 1+
  postpone sliteral ; immediate
```

Would that be the same?

Thanks for the clear explanation -- I think I'm starting to get the point. I'm still a little bit confused about **HERE**, but I need to sort that one out before I ask any more questions...

Matthew

By [Neal Bridges \(Nbridges\)](#) on Friday, March 10, 2000 - 02:34 pm:

Your z" doesn't work --

```
: z"
[char] " parse ( addr len )
0 over ( addr len 0 len )
here + ( addr len 0 here+len )
c! ( addr len ) \ so far so good
\ Here's the problem:
1+ ( addr len+1 )
postpone sliteral ( )
```

At this point, you have lied to **SLITERAL** about the length of the literal string. Not that its feelings will be hurt -- it will happily write the literal string to dataspace, plus one extra random character, overwriting the zero-byte that you just carefully put in place. Plus, when the address and length of the literal string are later placed on the stack, the length will be high by one.

As to **HERE**: it is a pointer to dataspace; it marks the next location in dataspace where data will be stored (by **SLITERAL**, , etc.).

Neal

By [Matthew Blair \(Blair\)](#) on Friday, March 10, 2000 - 02:43 pm:

Lies...such a harsh word :^)

Ah. I think I see the problem. I assumed that the null character had been placed at the end of the character sequence pointed to by `addr`, when in actuality, it is placed in the dataspace before the sequence is placed there (via **SLITERAL**).

So, the address returned by **PARSE**: where does that live?

Matthew

By [Neal Bridges \(Nbridges\)](#) on Friday, March 10, 2000 - 03:11 pm:

The text you type at the console, or that is read from source memos, goes into an 'input buffer', a single area of memory 80+ characters long. Every new line entered overwrites this buffer.

PARSE and friends return addresses from within the input buffer.

Neal

By [Wade Carlson](#) on Friday, March 10, 2000 - 08:29 pm:

So to beat a dead horse dead (and clarify in my mind), the word **HERE** should NEVER be used in a

compiled app?

Also, I've been reading, but could still use some clarification on the difference between codespace, dataspace, and the words that 'modify' these spaces. Any other 'spaces' I need to know about as well?

By [Neal Bridges \(Nbridges\)](#) on Friday, March 10, 2000 - 10:01 pm:

HERE is generally useless in a stand-alone app. It's a pointer that tracks how much dataspace has been used during compilation.

In a stand-alone app, there are a few bytes at HERE that can be used safely -- 40 of them, in fact. But you shouldn't rely on that, as that's intended as a safety margin.

CREATE words, and the dataspace ALLOTed for them, occupy the same dataspace that the HERE pointer points at; they are the right way to use dataspace.

Neal

By [Neal Bridges \(Nbridges\)](#) on Saturday, March 11, 2000 - 09:33 am:

There are two areas of memory to consider, named 'codespace' and 'dataspace'. These are intermingled in certain Forth implementations; in Quartus Forth they are separate areas. The Standard allows either sort of implementation.

Codespace is where definitions (code) resides; dataspace is where data resides.

```
variable x
5 x !

: go x @ . ;
```

Here, **x** and **go** are both written in codespace. The data that **x** holds is written in dataspace.

Quartus Forth keeps dataspace in dynamic RAM, and codespace in the storage area.

The Standard words for manipulating dataspace include **@ ! 2@ 2! C@ C! HERE ALLOT , C,**. Beyond the normal compiling words, a Standard implementation is not required to provide any words for manipulating codespace, but most do anyway. Quartus Forth codespace words include **CS@ CS! CSHERE CS, CSC, XT>ABS**.

Neal

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Return stack manipulation

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Return stack manipulation

By [Jim Hendricks \(Jimh\)](#) on Thursday, March 9, 2000 - 03:11 pm:

Was wondering how to implement the following words:

```
r! ( x -- x ) ( r: -- x )
dup >r ;
```

```
2r! ( x1 x2 -- x1 x2 ) ( r: -- x1 x2 )
2dup 2>r ;
```

As you can see, I have the code, but Quartus craps with a fatal because the return stack is not balanced. Arg!

Granted these don't do much but in the interest of factoring, as well as code readability, as well as providing consistency where the standard leaves off (ie. theres a r@, so how about an r!) I would love to implement these.

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 9, 2000 - 03:13 pm:

Make them INLINE words.

```
: r! ( x -- x ) ( R: -- x )
  dup >r ; inline
```

```
: 2r! ( x1 x2 -- x1 x2 ) ( R: -- x1 x2 )
  2dup 2>r ; inline
```

Remember such words can only be used within a definition, and not from the console.

Neal

By [Jim Hendricks \(Jimh\)](#) on Thursday, March 9, 2000 - 03:14 pm:

Now for some added fun!

looked at >R with SEE...

??? why DUP >R DROP

also, with disasm, how do you see the >R that is called from >R?

By [Jim Hendricks \(Jimh\)](#) on Thursday, March 9, 2000 - 03:17 pm:

Thanks Neal on the answer to my first question, inline fixed it!

That does bring up another question, aside from when required, when is inline recommended? I also seem to remember reading somewhere that Quartus does some automatic inlining.

Jim

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 9, 2000 - 03:17 pm:

It's just to confuse you. :)

Actually -- **DUP >R** is one machine instruction, and is translated as such by *disasm* whenever it is encountered.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 9, 2000 - 03:21 pm:

Quartus Forth does inline a number of primitives automatically.

Generally, in applications I recommend you avoid the use of **INLINE** except in those circumstances where it's absolutely necessary, as in the code you posted.

Casual use of **INLINE** in application code will rapidly lead code-bloat, and since a function call has a very small overhead in Quartus Forth, it's seldom useful to use **INLINE**.

Neal

By [Jim Hendricks \(Jimh\)](#) on Thursday, March 9, 2000 - 03:56 pm:

whoops, tried to disasm **DUP >R** first without a space, then with a space. The second choice ended with a **FATAL**.

I'm too much the windows programmer, I wanted to say the **blue screen of death**, we need to come up with a catch phrase for a fatal exception.

Jim

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 9, 2000 - 04:03 pm:

How about "Fatal Exception"? :)

In your second case, effectively you're doing:

```
see dup
```

```
>r
```

and **>r** at the console prompt will reliably give you the a "Fatal Exception" requiring a harmless reset.

No Forth function names contain spaces. Spaces are only used to separate other names.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 9, 2000 - 04:22 pm:

By the way -- be thankful you're using a Palm device. On the Royal daVinci, a crash does nothing at all: no alert, no beep, just sits there not responding. If you're very lucky, the screen goes all white.

Neal

By [Jim Hendricks \(Jimh\)](#) on Thursday, March 9, 2000 - 05:09 pm:

So on the DaVinci, you get the White Screen of Death... Yuk Yuk Yuk...

Your previous explanation makes sense, so then, how do you SEE DUP >R since there is a space in the name?

Also, how do you SEE names that are redefined and you want to SEE the original name? Or is this a matter of "None of the built in words do redefines".

Thanks, Jim

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 9, 2000 - 05:34 pm:

Have a look inside the *disasm* memos, it'll explain more quickly what's happening. Simply put, certain single-instruction sequences have one or two-word Forth equivalents; those are spelled out for you directly in the disassembly.

I'm not sure what you mean by internal words doing redefines -- but there's only one instance each of each internal word.

Neal

By [Jim Hendricks \(Jimh\)](#) on Friday, March 10, 2000 - 08:56 am:

OK, someday I may get brave enough to look inside the disasm memos, right now it would probably only blow me away.

When I refer to redefines, I mean for instance the word SEE itself. At some point in time you provided the tip to define SEE as:

```
: see
  true more
  see
  more drop ;
```

I added this to the end of disasm.part4 (I know I shouldn't modify the standard libs but in this case functionality overrode ease of upgrade). Now if I **SEE SEE** I get this definition and can't **SEE** the original definition of **SEE** even though it is actually used through the redefinition. Granted, I can drop my ReDef for **SEE** since it is provided in source code although in reality since the original **SEE** is also provided in source code, I don't care to actually use **SEE** to see **SEE** (understand?!?), I can just read the code. That's why I was wondering if any of the internal words use Redefs since the internal words we don't have source for and therefore have to rely on **SEE** to see them.

Basically though I think you answered my question by indicating that there is only one instance of each internal word, this would mean that **SEE**'s ability to **SEE** an original definition in a redef situation is not actually useful.

BTW, when I did **SEE** on the previous def in this message I got:

```
DUP
moveq.l #-1,d7
MORE
SEE
MORE
DROP
```

I dropped addresses and asm except for the asm for the line in question. Why does true end up this way and why after the **MORE**? Just curious.

Thanks, Jim

By [Neal Bridges \(Nbridges\)](#) on Friday, March 10, 2000 - 09:17 am:

In the current release of Quartus Forth, **TRUE** is inlined as:

```
DUP
moveq.l #-1,d7
```

SEE doesn't give you a perfect translation back into Forth source -- to do that for a native-code implementation such as Quartus Forth would have made **SEE** unreasonably complicated.

Neal

By [Jim Hendricks \(Jimh\)](#) on Friday, March 10, 2000 - 10:38 am:

TKS

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Selecting text in the Console

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Selecting text in the Console

By [Barron Snyder](#) on Thursday, March 9, 2000 - 11:33 am:

Is there a way to select text from previous lines in the console? I can select anything from the current line but not from previous lines. Basically, I want to select things on screen so that I can copy them to a memo. Is this possible?

Thanks,
Barron

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 9, 2000 - 11:37 am:

The Quartus Forth console is treated as a bitmapped display; the text is not selectable. This was done for reasons of speed and flexibility -- this way, you can mix as many fonts as you want, and draw text at any specific pixel position.

If, in your application, you wish to display selectable text, you will need to put it in a non-editable field in your app's form.

Neal

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SysSetPerformance, HwrSetCPUDutyCycle, HwrSetSystemClock

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): SysSetPerformance, HwrSetCPUDutyCycle, HwrSetSystemClock](#)

By **Real Ouellet** on Wednesday, March 8, 2000 - 08:30 pm:

Hello,

does anybody know how to use those, specifically, what parameter ranges can be used, etc...

thx

Real

By **[Neal Bridges \(Nbridges\)](#)** on Wednesday, March 8, 2000 - 10:49 pm:

If you register at <http://www.palm.com/devzone> as a developer, you can send in paperwork and get access to a subset of the Palm OS 3.0 sources: there's some information on those calls in there.

Neal

By **Real Ouellet** on Thursday, March 9, 2000 - 05:48 pm:

Why is it that the info i need is almost always under NDA, everywhere? ;) It must be a conspiracy...

Anybody wants to be more helpful than that? send me a note at realo@sympatico.ca , its just 3 function calls, after all.

I won't tell...

Mucho thx.

Real

By **[Neal Bridges \(Nbridges\)](#)** on Thursday, March 9, 2000 - 06:01 pm:

It's free and pretty simple to apply -- takes two weeks or so. There's a wealth of information in there, really, if you're working with the undocumented functions.

Neal

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Question about next release

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Question about next release

By Jonathan Lerwill on Wednesday, March 8, 2000 - 06:00 pm:

Question about next release: Will the next release be able to generate sharable modules ?

Comment about 1.25R: When the compiler findes an error it sometimes leaves the menu from my app. in place so I can't use your Go/Last Error feature.

Progress Report: I haven't yet been able to alter the contents of a listbox or use a callback with tables. Apart from that I'm getting on quite well with using Quartus on my Visor. Quatrus is a grest product. Keep up the good work.

Lastly; I find my home made stackcheck word very useful for debugging. Maybe you could improve it?

```
\ stackcheck

: wait key ;

: stackerror ( i -- )
  ." StackDepth at Pos: " .
  ." is " depth . CR
  wait ;

: stackcheck ( id depth )
  2 + depth <>
  IF stackerror ELSE drop THEN ;

: stack0check ( id -- ) 0 stackcheck ;
: stack1check ( id -- ) 1 stackcheck ;
: stack2check ( id -- ) 2 stackcheck ;
: stack3check ( id -- ) 3 stackcheck ;
: stackNcheck ( id dpth ) stackcheck ;
```

Regards

Jonathan Lerwill

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 8, 2000 - 10:46 pm:

Sharable modules -- I presume you mean compiled modules. It's possible, but it won't be there right out of the gate with version 2.0.0.

For getting back the menu after an error, have a look at the 'catch mainform throw' exmaple I posted a few days back.

I'm working on the callback issue with OS3.3 -- but you should be able to modify listbox contents. I'd need to know more about the problem you're having.

Your stackcheck functions are interesting. One built-in word you could use to make them a bit more concise is **enough?**

Neal

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USB Visor Support under Quartus Forth

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

USB Visor Support under Quartus Forth

By [Dean Vieau](#) on Wednesday, March 8, 2000 - 04:28 pm:

Is there/ will there be USB support for the Visor under Quartus Forth?

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 8, 2000 - 04:33 pm:

I'm adding all the Visor calls to the kernel. I don't know if they'll make it into the next update but I'll try.

If there are certain specific calls you need now, they can be added easily in high-level Forth; let me know.

Neal

Add a Message

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Dictionary overflow

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Dictionary overflow](#)

By **Jim Meadows** on **Wednesday, March 8, 2000 - 04:17 pm:**

I assume when I receive the message "Dictionary overflow" that its time to start optimizing my routines some. Below are some of the things I plan on doing ...

1. Delete all words used for testing purposes only
2. Delete all unused constants (does this help?)
3. Look for words used only once and incorporate them into the calling word
4. Look for words used only 2-3 times and possibly incorporate them into the calling words (if they are short)
5. Make specilized versions of the files included from the Forth Library deleting words that are not used by the application
6. If necessary, break the application into separate programs and have then call (run) each other

Are these reasonable things to do? Any suggestions?

By **Neal Bridges (Nbridges)** on **Wednesday, March 8, 2000 - 04:32 pm:**

First check that you really are running out of space -- it's possible to scare up that error with certain strange control-structure mistakes.

`csunused u.`

will display the amount of codespace remaining.

Unused constants do take up a bit of space, yes. Factoring (looking for re-used code sequences and moving them out into their own words) will net you the largest result, however.

What version of Quartus Forth are you running? What does 'csunused u.' display at startup?

Neal

By **Jim Meadows** on **Friday, March 10, 2000 - 07:11 pm:**

After some optimizing, running `csunused u.` produces 732 on my Palm III running 1.2.1R.

Does this message mean I am out of space for dictionary entries, code space or both? From your comments it sounds like both & therefore I am better off factoring words out into their own words rather than trying to reduce the number of words in the dictionary.

If this is the case, is my only other alternative is to break up the application into sections that can call each other?

By [Neal Bridges \(Nbridges\)](#) on Friday, March 10, 2000 - 07:19 pm:

Jim, 1.2.5R has enhanced codespace. Did you not receive the mailing?

Neal

By **Jim Meadows** on Friday, March 10, 2000 - 07:41 pm:

I just realized that installing 1.2.5R did not "take" because I had 1.2.1R in Flash ROM. Even though 1.2.5R was loaded on my palm (in RAM) the older version was actually being run (from Flash). So I deleted 1.2.1R from Flash and now 1.2.5R is being used and csunused u. now produces 12356! That's much better!

Thanks Neal!

- Jim

p.s. I'll probably do more factoring anyway :-)

By [Neal Bridges \(Nbridges\)](#) on Friday, March 10, 2000 - 07:42 pm:

:) Can't hurt to do some more factoring -- those factored pieces are frequently reusable in other projects.

Neal

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Operations on double values

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Operations on double values](#)

By [Ed Mittelstedt](#) on Wednesday, March 8, 2000 - 11:00 am:

Can anyone give me the words on how to multiply, divide, add and shift two double numbers? I looked through the ANS docs and it has words to operate on a double and a single value, but nohing on 2 doubles. I also looked in the included libraries that Neal so kindly included, but could not find what I was looking for.

Thanks,
-Ed

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 8, 2000 - 11:26 am:

There are no built-in functions for operating on 64-bit values, Ed. You'll need to build those. It's not too hard -- let me know if you need a hand.

Neal

By [Ed Mittelstedt](#) on Wednesday, March 8, 2000 - 11:35 am:

64-bit? Ok, I'm confused. I was under the impression that a cell was 16-bit, thereby making a double 32-bits wide.

What I'm trying to do is multiply to matrices using fixed-point integers. This involves shifting values to the left before multiplying them.

I would love to stick with single cells, but would that limit me to a 65536 max value. With the shifting numbers, that would be a serious damper. Am I correct in assuming I need a double cell for this or am I off-base?

-Ed

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 8, 2000 - 11:41 am:

Sorry Ed, maybe I was confused. I thought you were not looking for double-cell arithmetic, but operations on pairs of double-cells.

The easiest way to shift a double-cell value to the left is using D2*. DLSHIFT would then be:

needs core-ext

```
: DLSHIFT ( xd1. +n -- xd2. )
  0 ?do d2* loop ;
```

Neal

By [Ed Mittelstedt](#) on Wednesday, March 8, 2000 - 11:49 am:

That's ok, Neal. I understand completely how you implemented the shift word, and I saw the d2* in the ANS doc, but thought there might have been a more optimized way (read: one built-in word) to shift the double cell. That's cool, the DLSHIFT you described above will take only a few cycles to complete.

I see the d+ word for adding 2 doubles together. Tre chic. Does there exist a word to multiply to doubles together, or will I have to create a word using a loop and d+?

-Ed

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 8, 2000 - 12:04 pm:

This link should cover it for you:

<http://www.quartus.net/discus/messages/23/221.html?MondayJanuary3120000752pm>

Let me know if you need more info!

Neal

By [Ed Mittelstedt](#) on Thursday, March 9, 2000 - 08:29 am:

Perfect! I did a cursory check of the subject but obviously overlooked that one. Thanks Neal!

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Clear to End-of-line (EOL)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Clear to End-of-line \(EOL\)](#)

By **[John Newell](#)** on Wednesday, March 8, 2000 - 09:55 am:

Greetings,

I'm getting into this Quartus Forth now. (I mailed my registration request today Neal.) Anyway, I'm developing an Archery scoring appln. (any archers out there).

Down to the specific question. I want to do:

```
x y AT-XY . clear-to-eol
```

The only reference I can see which mentions this is to erase-rectangle but surely there is an easier way to clear to the end of the current line? It must be a fairly common requirement, especially if you are printing debug data to the screen during a development.

Can anybody help?

Thanks

By **[Neal Bridges \(Nbridges\)](#)** on Wednesday, March 8, 2000 - 10:45 am:

There is no simpler way than to use **erase-rectangle**.

```
needs graphics
```

```
: clear-to-eol
```

```
  FntLineHeight 160 cursor-position erase-rectangle ;
```

Neal

By **[John Newell](#)** on Wednesday, March 8, 2000 - 12:48 pm:

Thank yo Neal. That works OK.

Should you say say:

```
: clear-to-eol
```

```
FntLineHeight 160 cursorx @ - cursor-position erase-rectangle ;
```

or doesn't it matter that the rectangle goes off the edge of the screen?

John

By **[Neal Bridges \(Nbridges\)](#)** on Wednesday, March 8, 2000 - 01:09 pm:

It doesn't actually matter that it goes off the edge -- the Palm OS clips it for you.

Neal

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Educational discount on Quartus Forth

Quartus Handheld Software: Discussion Forum: Quartus Forth (PalmOS version): Educational discount on Quartus Forth

By **Neal Bridges (Nbridges)** on Wednesday, March 8, 2000 - 12:19 am:

Haven't registered Quartus Forth yet? Starting now and for a limited time, there's an educational discount on Quartus Forth available to both educators and students. The discounted price is \$49.95 USD, a \$20 savings.

To take advantage of this offer, email sales@quartus.net with details of your student or faculty status. Please provide your ID number, full name, and the name of the issuing institution, and upon approval I'll provide you with the appropriate registration procedure.

Neal

By **Jim Hendricks (Jimh)** on Wednesday, March 8, 2000 - 09:14 am:

Neal, I'm teaching myself Forth and Palm programming, does that qualify me as a student? Let's see, Student ID #1 (I'm the only one I'm teaching right now), full name (uh let me think now, this is a tough one)... Jim Hendricks, Issuing institution, oh, easy one, Jim Hendricks school of hard knocks. ;-> HEE HEE HEE!

By **Neal Bridges (Nbridges)** on Wednesday, March 8, 2000 - 12:25 pm:

Hehehe. Doesn't hurt to try. :)

Neal

By **E. Ross Helton** on Wednesday, March 8, 2000 - 12:40 pm:

Hey Jim;

Give me a few hundred dollars and I will enroll you as a student of mine.

Let's see your ID will be Testing Neal

The school is Hard Knocks Univ.
Located Usually in my mine

Make it a good day!

Ross

By **John Oliver** on Thursday, March 9, 2000 - 06:00 am:

I have already registered at the regular price for Quartus for use in consulting work I do for pay. I assume that the educational discount is for use in teaching and/or developing educational materials and would not properly apply to my use? (Note: I am happy with the price I paid and not interested in a refund, just interested in clarifying the ground rules).

I DO plan on telling my advanced students about this opportunity.

**John Oliver
Associate Professor of Astronomy
Undergraduate Coordinator
Associate Chairman
University of Florida**

Netscape Champion

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 9, 2000 - 08:22 am:

The offer is intended to make the product available at a lower price for students, no matter the use they may put it to, and at an attractive price for educators.

Thanks for letting your students know!

Neal

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Experimenting with PalmOS Words

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Experimenting with PalmOS Words](#)

By [Barron Snyder](#) on Tuesday, March 7, 2000 - 12:34 pm:

To learn about and play with the PalmOS word set, do I need to create an application or can I use them interactively at the console?

Specifically I'm looking at the Winxxx systrops that paint things on screen (ex. WinDrawChars). How can I experiment with these in a controlled environment like the console?

By [Matthew Blair \(Blair\)](#) on Tuesday, March 7, 2000 - 12:41 pm:

Barron,

Certainly you can use them interactively at the console. For PalmOS calls that require a string (i.e., WinDrawChars), you will need to do one of the following:

(1) Enter all of your strings via **noname**, e.g.,

```
:noname z" Hello World!" ; execute
```

(2) Make a definition at the console which you can execute each time you need a string, e.g.,

```
: myword z" Hello World!" ;
```

Course you can also do these things in a memo pad file that you include on startup.

You have to do this since the "string building" words are compiling words and not interpretive.

Matt

By [Neal Bridges \(Nbridges\)](#) on Tuesday, March 7, 2000 - 01:37 pm:

Here are a few interesting PalmOS calls to try from the console:

```
0 0 SysSleep
```

```
SysReset
```

```
2000 2 DaysInMonth .
```

```
2000 7 3 DayOfWeek .
```

```
10 10 110 110 WinDrawGrayLine
```

```
WinEraseWindow
```

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, March 7, 2000 - 01:39 pm:

A WinDrawChars example:

```
needs zstrings
```

```
: mystring z" Hello!" ;
```

```
60 60 mystring swap >abs WinDrawChars
```

Neal

By [Barron Snyder](#) on Tuesday, March 7, 2000 - 02:07 pm:

I notice that both Matthew and Neal use z" xxx" instead of s" xxx" in these examples. While playing around, I tried both z" and s" and both seem to work. What are rules regarding these two words? In what instances should I use one over the other?

Thanks,
Barron

By [jimh](#) on Tuesday, March 7, 2000 - 02:47 pm:

s" creates a string following the ANSI Forth standard which puts the characters in memory at compile time, putting the address in memory where the string is as well as the length of the string on the stack.

z" is a non-standard word to fill the need for formatting strings acceptable by the Palm API. Specifically z" puts a null character (ascII 0) immediately following the string in memory, these types of strings are typically referred to as zero terminated strings hence the name z".

z" strings should be able to be used wherever s" can be used since it conforms to the standard for s" in all except for the added zero character. The reverse is not true through, for Palm API calls that expect a zstring, and s" will not work.

Jim

By [Neal Bridges \(Nbridges\)](#) on Tuesday, March 7, 2000 - 04:09 pm:

Most Palm API calls do expect a zero-delimited string, but not all -- WinDrawChars, for instance, takes the length of the string as an argument, and so doesn't require that the string be zero-delimited.

Neal

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T3D game ; another Quartus application

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

T3D game ; another Quartus application

By **[Edin Hodzic](#)** on Tuesday, March 7, 2000 - 11:39 am:

Hello,

I have created a board game using Quartus. It is a 3D tic-tac-toe. You can find more info at <http://members.home.net/ehodzic> .

It is in a testing phase next few days before it goes to palmgear or some such site. Any feedback you might have would be greatly appreciated.

Programming in Quartus has been fun. Neal's support was amazing, during several months of my night development. He provided solutions to bugs, offered to debug my application, offered to test my application, all very promptly and authoritatively. It's been fun developing in Forth and on board Pilot. (This sounds like academy awards :)

I will use Quartus again!

Thanks.

Edin Hodzic

By **[Neal Bridges \(Nbridges\)](#)** on Tuesday, March 7, 2000 - 05:42 pm:

Glad to hear that Edin :) It's a fun game. It's only a 20K PRC, as well!

Neal

By **[Edin Hodzic](#)** on Wednesday, March 8, 2000 - 01:26 am:

The game is very simple and yet very challenging.

Oren Patashnik described his semi-brute-force proof that the first player wins in September 1980 issue of Mathematics Magazine...

Neal, would having a list of applications, written in Quartus Forth, on www.quartus.net be a useful item for attracting new QF customers? (Obviously, I am not asking about QF only :-).

Edin Hodzic

By **[Neal Bridges \(Nbridges\)](#)** on Wednesday, March 8, 2000 - 10:47 am:

It would, Edin. It's a good idea; on my list.

Neal

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"Family" Bitmaps?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

"Family" Bitmaps?

By **[E.](#)** on Tuesday, March 7, 2000 - 12:49 am:

Since I just gave in and got a 3c (although to my relief the MAIN selling point was the 8M of RAM, and the charge-in-cradle didn't hurt either), I went back and re-read all (3?) of the color discussions in this forum.

Um, create "family" bitmaps? For those of us (read: "me") with no useful graphics/GUI experience, can somebody explain this, please?

By **[Neal Bridges \(Nbridges\)](#)** on Tuesday, March 7, 2000 - 10:26 am:

Family bitmaps are bitmaps that contain different depths for different displays -- a one-bit version for monochrome, and optionally a two-bit version, a four-bit version, and an 8 bit (color) version.

The new version of PilRC will let you create family bitmaps. It's at <http://www.hig.se/~ardiri/development/palmIII/pilrc/index.html>.

Neal

By **[E.](#)** on Tuesday, March 7, 2000 - 08:56 pm:

Oh. So it's just a bunch of bitmaps bundled together, and the correct one is called up depending on the current color depth?

I fear it'll be a while before we get a color-capable version of RsrcEdit. I hope I'm wrong.

By **[Neal Bridges \(Nbridges\)](#)** on Tuesday, March 7, 2000 - 09:00 pm:

Effectively it's a bundle of bitmaps, yes. The Palm OS automatically draws the appropriate one depending on the current depth setting.

I suggest writing to the RsrcEdit author about it.

Neal

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TIME Magazine article

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

TIME Magazine article

By [Neal Bridges \(Nbridges\)](#) on Monday, March 6, 2000 - 05:57 pm:

Chris Taylor (cdt@well.com) is writing a TIME magazine article on Palm addiction. He's like to hear from people who use their Palm entirely too much :) I won't write him myself, but if one of you wanted to tell him how you're using Quartus Forth to write software with it in unusual locations, well I wouldn't hate seeing my product named in TIME.

:)

Neal

By [Ed Mittelstedt](#) on Thursday, March 9, 2000 - 09:32 am:

Hi Neal,

E-Mail sent, with a mighty plug for our dear Quartus Forth :). I emailed the letter to you.

-Ed

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 9, 2000 - 02:07 pm:

Thank you kindly!

Neal

Add a Message

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Not sure if this is a Syntax or Style question...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Not sure if this is a Syntax or Style question...

By **Jamie** on Monday, March 6, 2000 - 02:29 pm:

Hello All,

Looking at the posted samples, both in the Files area, and on the board, it looks like regular convention is to have just one event-loop per program. Is it possible to setup an event-loop for different things ?

I'm trying to write an app that has 2 or 3 main forms, which can call various edit/update forms. These data on these forms is related enough that I don't want to make them separate apps, and I was thinking that it might be easier to handle the different events that might occur on a form by form basis. Is this possible, or even feasible, or would you suggest that it could lead to more problem than it would solve ?

By [Neal Bridges \(Nbridges\)](#) on Monday, March 6, 2000 - 02:51 pm:

You can certainly have multiple event loops. Swatch gives an example of this -- the main form has one event loop, the converter has another.

Neal

By [Erwin Schomburg](#) on Monday, March 6, 2000 - 04:27 pm:

From own experience I can tell you that you need to know exactly what you are up to, otherwise you shoot yourself in the foot by employing multiple event loops.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Monday, March 6, 2000 - 04:29 pm:

Hmm, I'm not sure it's that tricky in the case of one event loop for each form you're deploying. However, have a look at the Swatch sources, see what you think.

Neal

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Printing Problem with Small Floats

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Printing Problem with Small Floats](#)

By [Bill McCarthy](#) on Sunday, March 5, 2000 - 04:37 pm:

Sorry, I posted this message in error in another thread. Here's a repeat in its own thread:

Printing of small floating point numbers fails with both the FS. and F. words. The problem appears to be in FPDISECT. For example: `1e-10 fpdissect .s` gives: `1 0 0 0` which is, of course, wrong.

While fixing this problem, it would be nice to add the standard FE. for engineering output.

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 04:46 pm:

FS. seems fine --

```
1e-10 fs. -> 0.10000000E-9
```

F. seems to fail, however; displays nothing. I'll check into it. Thanks for letting me know!

Neal

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 04:56 pm:

fpdissect is working here for 1e-10:

```
1e-10 fpdissect .s -> 1 -9 -27008 152
```

That's the correct result. The top two cells (-27008 152) are the 24-bit mantissa, the -9 is the exponent, and 1 indicates that it's a positive number.

What version of Quartus Forth are you testing under, Bill?

Neal

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 05:11 pm:

I found the problem in F. and will fix it -- in the meantime, a simple work-around is this:

```
10 set-places
1e-10 f. -> 0.000000001
```

Neal

By [Bill McCarthy](#) on Tuesday, March 7, 2000 - 06:58 pm:

Neal, I have your latest evaluation version which is 1.2.1U built 3/6/99 at 2:18:38pm. It knew

nothing about `set-places` until I updated it with your December version of float-ext.

**Here, 1e-10 fs. -> 0.00000000E0
and 1e-10 fpdissect .s -> 1 0 0 0**

Bill

By [Neal Bridges \(Nbridges\)](#) on Tuesday, March 7, 2000 - 08:47 pm:

Bill, I have evidently corrected that problem at a previous point without ever realizing there was a bug. :) The fix is coming in the next update. Thanks for letting me know!

Neal

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Modifying & Deleting records

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#) Modifying & Deleting records

By **Jim Meadows** on Sunday, March 5, 2000 - 02:55 pm:

Since a picture is worth a thousand words ... I thought I would at least ask if there is an example anywhere of modifying and deleting records in a database. I have found DB-example and Memo which show creating, writing & reading from a database. Just thought I would check & see if anyone has written a modify record and delete record example.

- **Jim**

By **Ron Doerfler** on Monday, March 6, 2000 - 02:23 am:

Hi Jim,

Here are some things that might help. First, I took memo.txt and newmemo.txt and reworked them to be more generally for any database, and then made memo routines separately based on them. So below is dbase-ext2 (general purpose database routines), then memo-ext2 (memo database routines built on top of dbase-ext2) and then memo-ext3 (more memo routines that I separated out--these have not been tested really, as I don't use them). I use all the routines in my code except those in memo-ext3.

```
\ dbase-ext2  RWD 122399
```

```
needs core-ext
```

```
needs DataMgr
```

```
\ Tools needed:
```

```
: 4dup 2over 2over ;
```

```
: 3dup 4dup 2>r >r drop r> 2r> ;
```

```
(hex) 80 constant deleteMask
```

```
\ Temporary variables
```

```
variable attrP
```

```
variable dbmode
```

```
variable recindex
```

```
variable dbzname
```

```
2variable dbcreator
```

```
2variable dbtype
```

```
2variable dbref
```

```
: new-record
```

```

( len. index-a-addr. dbref. -- recptr. )
DmNewRecord MemHandleLock ;

: get-recordattr
( index dbref. -- attr )
2>r >r 0. 0. attrP >abs r> 2r>
DmRecordInfo drop attrP @ ;

: set-recordattr
( attr index dbref. -- err )
2>r >r attrP ! 0. attrP >abs r> 2r>
DmSetRecordInfo ;

: query-record
( index dbref. -- handle. )
DmQueryRecord ;

: get-record ( index dbref. -- recptr. )
DmGetRecord MemHandleLock ;

: release-record
( dirtyflag index dbref. recptr.-- err)
MemPtrUnlock >r
DmReleaseRecord r> or ;

: num-records ( dbref. -- n )
DmNumRecords ;

: size-record
( index dbref. -- size )
query-record MemHandleSize d>s ;

: deleted-record?
( index dbref. -- del_flg )
get-recordattr deleteMask and ;

: grow-record
( addedsize index dbref. -- newsiz recptr. )
\ Release record if needed before calling.
3dup 2>r >r size-record + dup s>d
r> 2r> DmResizeRecord
MemHandleLock ;

: ?openDB ( -- dbref.|null. Err )
dbmode @ dbcreator 2@ dbtype 2@
DmOpenDatabaseByTypeCreator

```

```
2dup or 0= ;
```

```
: openDB
( namez-addr u mode creator. type. -- dbref.|null. )
\ null. means an error
dbtype 2! dbcreator 2! dbmode !
\ Don't need size u of z-string
drop dbzname !
?openDB if
  \ Database doesn't exist. Create it.
  2drop false \ Not a resource DB
  dbtype 2@ dbcreator 2@
  dbzname @ >abs 0 \ Card #0
  DmCreateDatabase
  if \ Error creating it
    0.
  else \ Now open it.
    ?openDB drop
  then
then ;
```

```
: closeDB ( dbref. -- )
DmCloseDatabase drop ;
```

```
: write-newrecord
( z-addr len index-addr dbref. -- )
\ Save index-addr and dbref.
3dup 2>r >r
\ Add 1 to zlength and dup it.
2>r >r 1+ s>d 2dup r> >abs 2r>
( z-addr len+1. len+1. index-addr. dbref. )
new-record 2>r rot >abs 0.
2r@ DmWrite drop
2r> true r> @ 2swap 2r> 2swap
release-record drop ;
```

```
\ memo-ext2 121799 RWD
```

```
\ memodbid@ and OpenMemoDB
\ below are needed specially for
\ the memo database, as IRLink uses
\ creator ID memo and type DATA.
```

```
needs core-ext
needs zstrings
```

```

needs DataMgr
needs dbase-ext2

2variable memodbref
2variable memoptr

: memodbid@ ( -- dbID. | 0.)
\ Gets LocalID of MemoDB.
\ Assumes it's on card 0.
z" MemoDB" drop >abs 0
DmFindDatabase ;

: open-memoDB ( -- )
\ Assumes card 0.
dmModeReadWrite memodbid@ 0
DmOpenDatabase memodbref 2! ;

: close-memoDB ( -- )
memodbref 2@
DmCloseDatabase drop ;

: write-newmemo
( z-addr len index-addr -- )
\ 0 = index of a new memo;
\ Store in index-addr.
dup 0 swap ! memodbref 2@
write-newrecord ;

: append-memo
\ Memo DB must already be opened.
( c-addr len index -- )
2dup >r swap memodbref 2@
grow-record
memoptr 2! ( z-addr len newsize )
over - 1- >r \ Offset
1+ s>d rot >abs r> s>d memoptr 2@
DmWrite drop
true r> memodbref 2@ memoptr 2@
release-record drop ;

\ memo-ext3 022900 RWD

needs memo-ext2

15 constant CategoryMask

```

```

: get-memocat ( index -- cat )
memodbref 2@ get-recordattr
CategoryMask and ;

: set-memocat ( cat index -- )
memodbref 2@ 3dup 2>r >r
get-recordattr
CategoryMask invert and or
r> 2r> set-recordattr drop ;

: write-newmemoincat
( cat z-addr length index-addr -- )
memodbref 2@ 3dup 2>r @ >r
write-newmemo
r> 2r> set-memocat ;

```

I do delete and modify records as well. Although this is somewhat interwoven in my code, I've extracted out some relevant words. In the words below, DataRec is a constant value for the record index, datadbref is the database pointer obtained when the database was opened, and datarecptr is the record pointer obtained when the record is opened by get-datarec below. Also, recdata--> is a structure I created to contain a block of data from the record, and blocksize is the size of that record.

```

: get-datarec ( -- )
DataRec datadbref 2@
get-record datarecptr 2! ;

: rel-datarec ( -- )
true DataRec datadbref 2@
datarecptr 2@ release-record drop ;

: del-datarec ( -- )
rel-datarec
DataRec datadbref 2@
DmRemoveRecord drop ;

: rec>data ( block# -- )
\ Populates data structure
>r recsize @ s>d
datarecptr 2@ r> block-offset m+
recdata--> >abs
MemMove drop ;

```

```
: data>rec ( -- )
\ Grow the data record first.
rel-datarec
blocksize @ DataRec datadbref 2@
grow-record datarecptr 2! >r
\ Insert the data.
blocksize @ s>d
recdata--> >abs
r> blocksize @ - s>d datarecptr 2@
DmWrite drop ;
```

Cheers,

Ron

By [Ron Doerfler](#) on Monday, March 6, 2000 - 02:45 am:

Two more comments:

- 1) recsize in the rec>data word is the same as blocksize everywhere else.
- 2) The last line should read "and blocksize is the size of that structure."

By **Jim Meadows** on Monday, March 6, 2000 - 09:32 am:

Thanks!! - Jim

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Registrations

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Registrations](#)

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 02:20 am:

I just had a user write me and tell me it'd been several days since he registered Quartus Forth, and he hadn't received his registration information. I make a point of sending out all registrations as soon as absolutely possible, and that means almost always the same day -- so I'm hoping there wasn't a problem with any of the other registrations I sent out around the same time. If you've bought Quartus Forth and haven't received your registration, don't wait -- let me know right away! I'll send you the product on the bounce.

Neal

By [John Oliver](#) on Sunday, March 5, 2000 - 06:34 am:

I received my registration within 24 hours including the time it took for Neal to fix a bonehead blunder I made in filling out the request. The support here is absolutely the best I have ever seen in 43 years of programming.

By [Barry Marks](#) on Wednesday, March 8, 2000 - 01:27 pm:

I agree. I'm barely using Quartus or the Palm right now. I guess the need to learn to deal with a GUI just took the fun out of it for me.

But I still read this fairly often just because it's so well done.

Barry

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 8, 2000 - 01:42 pm:

Barry, we need to get the fun back into it for you. What would help?

Neal

By [Barry Marks](#) on Wednesday, March 8, 2000 - 10:08 pm:

I'm still playing with it a little from time to time. But just playing. I haven't written anything.

I enjoy the way Forth works but I guess I don't enjoy GUI programming. I'm trying to learn Windows programming now and it's hard to stay interested in that, too.

Ok, you asked. Get Palm to toss their GUI and put dos in this thing. :)

Barry

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 8, 2000 - 10:41 pm:

Hehe. Well, Windows GUI programming is much more complex and ugly than the Palm OS

version.

If you wish, you can write Quartus Forth apps that don't use any GUI objects at all, but just interact directly with the user. Not the best route, perhaps, but a possible one.

Neal

By [Curtis Sorenson](#) on Wednesday, March 15, 2000 - 07:00 pm:

I've just finished ordering/registering Quartus Forth at Pilot Gear and am extremely anxious to become intimate with this portable development environment.

cursor

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 07:06 pm:

Thanks, Curtis. I'll send that out as soon as they forward me the details.

Neal

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Confused about BUFFER

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Confused about BUFFER](#)

By [Barron Snyder](#) on Sunday, March 5, 2000 - 02:07 am:

In an effort to understand Trevor Steele's table example in his newtable module (thread: "A table for OS 3.3?"), I'm curious about the word BUFFER. There's a line in Trevor's example that states:

```
create buffer 15 allot
```

Is this buffer the name of a new array? Or does it somehow use the Forth word BUFFER?

Thanks to all for any info and explanation of BUFFER,
Barron

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 02:12 am:

```
create buffer 15 allot
```

creates a name, 'buffer', that points to a region of dataspace, in this case 15 bytes long. It could as easily been called 'fred' or 'mary'. The result is a fixed-length string, or byte array.

```
3 buffer c!
```

would put 3 in the first byte of that array.

```
5 buffer 2 + c!
```

would put 5 in the third byte of that array.

Neal

By [Barron Snyder](#) on Sunday, March 5, 2000 - 10:03 am:

But isn't buffer also part of Forth's Block word set? Does it function in the same way?

Thanks,
Barron

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 11:19 am:

BUFFER is in fact a word in the BLOCK wordset, yes, where it has a different meaning. Sorry for the confusion there. Quartus Forth does not have the optional BLOCK wordset, but even if it did you are not prevented from re-using the name for your own purposes.

To reduce the confusion, change the name 'buffer' to something else in the code you are studying, or just remind yourself that in this case it is a region defined by the application developer, and has nothing to do with the BLOCK wordset.

Neal

By [Barron Snyder](#) on Sunday, March 5, 2000 - 06:36 pm:

Thanks for the clarification of buffer. I was getting confused between the Block wordset buffer and Trevor's buffer.

For a futher understanding of Trevor's use of buffer in the newtable module, would you (or anybody) help me understand:

```
\ determine the row and col, convert
\ to text and draw cell contents
 2dup 1+ buffer 0 s" r " append row
 @ 0 <# #s #> append s" , c "
 append col @ 0 <# #s #> append
 swap >abs WinDrawChars
```

My interpretation is that the top two values on the stack are duplicated and then the new top value is increased by one. (That's the easy part <g>.) Now, is the value in buffer placed on the stack followed by a zero? Or does the 0 refer to the beginning of buffer where the s" " string value is placed?

Thanks again for any help,
Barron

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 06:52 pm:

First it's important to know what the entire snippet does, as a unit. It creates a string in memory that looks like this:

```
r 1, c 2
```

(where 1 and 2 are the appropriate row and column numbers) and then draws it on the screen with WinDrawChars.

Now, to break it down:

```
2dup 1+      \ sets up the y and x values for WinDrawChars
buffer 0 s" r " append      \ puts "r " at the start of the buffer
row @ 0 <# #s #> append      \ puts the row number at the end of the buffer
s" , c " append      \ puts ", c " at the end of the buffer
col @ 0 <# #s #> append      \ puts the column number at the end of the buffer
swap >abs WinDrawChars      \ calls WinDrawChars to display it.
```

Neal

By [Barron Snyder](#) on Sunday, March 5, 2000 - 07:13 pm:

Ahhh... I see! (Ooo.. enlightenment!)

Thanks for your help (and patience)! In addition to creating my favorite (and often most frustrating* <g>) application, you truly do give the best support I've ever witnessed!

Keep smiling,

Barron

***Actually Quartus Forth is great and a joy to use, it's the Forth language that can be so dang frustrating...**

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 08:36 pm:

I think Forth is neither more nor less frustrating than, say, C, in terms of its complexity, while giving you far more bang for your buck.

Neal

By [Barron Snyder](#) on Monday, March 6, 2000 - 12:01 am:

The more I learn, the more I like it!

I have another question related to buffer - How can I see the contents of buffer? While playing around in the Quartus interactive mode, what word or words would I use to print the contents of buffer to the screen? I seem to be able to display the address (I think it's an address...) but not any strings that I put into buffer.

**Thanks,
Barron**

By [Neal Bridges \(Nbridges\)](#) on Monday, March 6, 2000 - 12:11 am:

TYPE is used to display a string, or character array, to the screen. It takes two arguments on the stack, an address and a character count, and displays the contents of dataspace at that address as ASCII characters on the screen.

In Quartus Forth, TYPE also takes care of text-wrapping and screen scrolling.

Neal

By [Barron Snyder](#) on Monday, March 6, 2000 - 12:34 am:

Type seems to eat what's in the buffer. Is there a way to view what is in there without destroying it?

**Thanks,
Barron**

By [Neal Bridges \(Nbridges\)](#) on Monday, March 6, 2000 - 12:48 am:

TYPE does not eat what's in the buffer, it's a completely non-destructive display. What exactly are you trying? Can you show some code?

Neal

By [Barron Snyder](#) on Monday, March 6, 2000 - 01:09 am:

My input/output looks like:

```
needs toolkit
create buffer 15 allot ok
```

```

: dog s" dog" ; ok
: food s" food" ; ok
buffer 0 dog append ok
buffer 3 food append ok
type dogfood ok
type dog ok
type
type? stack underflow

```

Barron

By [Neal Bridges \(Nbridges\)](#) on Monday, March 6, 2000 - 01:14 am:

Ok -- TYPE is not eating your buffer, it is eating items from the stack. The strings you have there are not stored on the stack, but in memory (dataspace). Only the address of the string, and the length, are stored on the stack.

```

buffer 3 type -> dog
buffer 7 type -> dogfood

```

Also, note that **append** leaves an address and count on the stack, representing the original string with the new string added to the end of it.

So, your first 'dog append' is leaving 'buffer 3' on the stack, and your second 'food append' is leaving an additional 'buffer 7' on the stack. Thus, your first TYPE displays 'dogfood' (the string pointed to by the top two items on the stack), your second TYPE displays 'dog' (the string pointed to by the next two items on the stack), and your third TYPE fails because nothing is left on the stack.

I think the important concept here is that of the stack, operating silently in the background, passing parameters into and out of the various functions. To see what's on the stack at any given time, a very useful function is **.S** -- this displays the contents of the stack from left to right, with the right-most number being the top-most item on the stack.

Neal

By [Barron Snyder](#) on Monday, March 6, 2000 - 01:26 am:

Thank you. Your answer's very helpful and gives me a much clearer mental picture of what's going on in the code.

Barron

By [Barron Snyder](#) on Wednesday, March 8, 2000 - 12:13 am:

Another question about this...

Neal mentioned that "...append leaves an address and count on the stack..."

How come when I try to view the contents of the stack with **.s**, I see the message **stack empty**?

```

needs toolkit ok

```

```
create buffer 10 allot ok
buffer 0 s" dog" append ok
.s stack empty
```

Thanks,
Barron

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 8, 2000 - 12:22 am:

You're using S" outside of a definition; this doesn't work because the version of S" that's built into the kernel (the CORE version) is for use only inside definitions.

To make your example work, do

needs file

at the top. This will enhance S" to allow it to work outside of definitions.

Neal

By [Barron Snyder](#) on Wednesday, March 8, 2000 - 12:38 am:

Where can I find **file**?

I didn't see it in the libtext.zip and searching the discussions for **file** brings up a whole lotta hits! <g>

Thanks,
Barron

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 8, 2000 - 12:42 am:

file.txt is part of the collection of library code that ships with Quartus Forth.

<http://www.quartus.net/files/PalmOS/Forth/Library/file.txt>

Neal

By [Barron Snyder](#) on Wednesday, March 8, 2000 - 12:49 am:

For some strange reason, I don't currently have **file** among my Quartus Forth memos. Thanks for the link.

Barron

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 8, 2000 - 10:49 am:

My apologies; it appears not to be in the 1.2.1e release archive. I'll fix that.

Neal

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A question that NEEDS an answer

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): A question that NEEDS an answer](#)

By [Barron Snyder](#) on Saturday, March 4, 2000 - 07:51 pm:

I have a question regarding the use of NEEDS. When looking at the Swatch example source code, I noticed that the swatch module has the line:

```
needs swatch.converter
```

And the swatch.converter module has the line:

```
needs swatch
```

Why do they call each other? Wouldn't this cause a circular reference problem?

Any information is appreciated,
Barron

By [Neal Bridges \(Nbridges\)](#) on Saturday, March 4, 2000 - 08:13 pm:

needs will only include a file if it hasn't already been included, so there's no circular reference there. The 'needs swatch' in the swatch.converter module is left-over from my development process.

Neal

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Beaming program and resources

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Beaming program and resources

By **Jim Meadows** on Friday, March 3, 2000 - 03:12 pm:

I am having a problem beaming my compiled application and an associated resource to another palm. The application beams OK, but the additional resource does not. I compiled the additional resource using Pilrc and Pila and used the same creator ID as the application (the application has type appl and the resource has type 0001 - I plan on having several additional resources containing bitmaps).

It runs fine on my original palm but only the application will beam over. What am I missing? I thought all resources with the same creator ID would be beamed together.

- Jim

By [Neal Bridges \(Nbridges\)](#) on Friday, March 3, 2000 - 03:15 pm:

That's not how it works, in my experience. You need to beam the resources and data separately.

RsrcEdit or BeamBox will let you do this; there are one or two other products that also do it.

Neal

By **Jim Meadows** on Friday, March 3, 2000 - 03:23 pm:

Ok ... I tried RsrcEdit to beam the resource but the receiveing palm said it could not find any application to match it so it did not save it. Any ideas what I'm doing wrong?

By [Neal Bridges \(Nbridges\)](#) on Friday, March 3, 2000 - 03:25 pm:

Sorry, should have explained it better. Any app you beam from has to also be on the target to catch the ball -- RsrcEdit beams straight to RsrcEdit, BeamBox beams straight to BeamBox, the Applications launcher beams straight to the Applications launcher.

Neal

By [Garth Kidd](#) on Saturday, March 4, 2000 - 06:04 am:

I don't suppose anyone is working on ways of being able to ship and beam as a single PRC?

By [Wade Carlson](#) on Saturday, March 4, 2000 - 11:19 am:

What do you mean? A Compiled forth app is a standalone prc file that can be beamed all at once. You simply just create the resource with RsrcEdit, and then when you compile the app you have the option to include those resources into the single prc file with the command copyrsrc.

By [Garth Kidd](#) on Sunday, March 5, 2000 - 05:51 am:

I read the documentation and figured that out, but didn't make it back in time. Thanks!

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 01:07 pm:

Yes -- Jim was discussing a different situation, where he had resources he wanted to keep external to his application. A special case.

Neal

By [Jim Meadows](#) on Sunday, March 5, 2000 - 02:33 pm:

As I thought more about it I wouldn't want my external resource(s) or databases to be beamed with the application. They will contain bit maps and be distributed separately from the application & hot sync'ed for specific users.

If I want to beam external resources or databases it will be done by my application, not automatically.

- Jim

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Screen rotation

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Screen rotation

By [Tim Chase](#) on Friday, March 3, 2000 - 07:59 am:

There are several document readers, with Peanut Reader as an example, which allow for the screen to be rotated 90, 180, or 270 degrees. I have searched the palm docs, the internet, and this forum using the terms "screen rotation" and "screen orientation". Can someone point me in the right direction to providing this functionality?

Thanks,

Tim

By [Neal Bridges \(Nbridges\)](#) on Friday, March 3, 2000 - 10:26 am:

CSpotRun is a freeware doc reader that does this, and if I recall correctly the source is available.

I suspect it is a simple matter of drawing the screen in an off-screen window, and then rotating it and copying it back.

Neal

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Serial i/o example

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Serial i/o example

By [John Oliver](#) on Thursday, March 2, 2000 - 06:43 pm:

OK ... I have cobbled together the following simple terminal based on discussions from the archives. It displays incoming chars and also displays and transmits graffiti chars. It waits for a tap on the screen to exit. The display of incoming chars works fine, but it misses about 1/2 the graffiti strokes and sometimes you have to tap several times to get to the exit. What's wrong?

```
\ term          - last mod 00.03.02 1818 JPO
needs serial
needs events
9600. 2constant baud

256 constant bufsize
create buf bufsize allot

serSettings: mysettings

variable obuf

: initTerminal ( -- )
InitSerLib ( -- err )
  abort" Error initializing serial lib"
baud SerOpen ( baud. -- err )
  if ." Error opening port"
    serClose drop abort
  then
mysettings serGetSettings
  ( &settings -- err )
  if ." Error getting serial settings"
    serClose drop abort
  then
baud mysettings serset.baud 2!
mysettings serSetSettings
  if ." Error setting serial settings"
    serClose drop abort
  then
0. set-timeout ( timeout. -- )
  buf 128 SerSetRecvBuff
  if ." Error setting recv. buffer"
    serClose drop abort
```

```

    then
;

: term ( -- )
cr ." Serial Terminal : " cr
initTerminal
." Tap screen to exit" cr
begin
\ look for incoming chars
  SerRecvCheck ( -- bytes. err )
  if 2drop serClearErr
  else
    drop bufsize min
    buf swap serRecv ( addr cnt -- #. err )
    if 2drop serClearErr
    else \ display chars
      2dup or if buf nip swap type else 2drop then
        then
          then
\ look for graffiti and send
10. (ekey) ?dup
  if ekey>char
    if dup emit
      obuf c! obuf 1 SerSend
      if serClearErr then 2drop
    else drop
  then
  then
\ exit if tap on screen
10. (ekey) penDownEvent =
if true else false then
until cr
." Closing serial port" cr
serClose
  abort" Error closing serial port"
;

```

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 2, 2000 - 10:34 pm:

You're requesting events at two points in your loop. Odds are very good that half the time, the button taps are being thrown away by the character logic, and half the time the Graffiti characters are being thrown away by the button logic.

Pare it down to asking for an event once, and then deciding how to handle it; your problems should vanish.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 2, 2000 - 10:41 pm:

Let me know if you'd like me to review the code further. One thing that stands out is
if true else false then
which is an entirely redundant piece of code, and can be removed completely.

Neal

By John Oliver on Friday, March 3, 2000 - 06:29 am:

Duh ... both should have been obvious but thats what happens when you take parts of two pieces of code, neither of which works and try to pare them down.

Thanks Neal

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Password:

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The math is ugly

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

The math is ugly

By [Dave Bennett](#) on Thursday, March 2, 2000 - 01:38 pm:

I wrote a little app in java this morning that I am trying to put into q4th. I am hitting a mental wall on this math. Here is the formula as I wrote it in java.

$$wcf = (((10.45 + (6.686112 * \text{sqrt}(\text{inpFld2})) - (0.447041 * \text{inpFld2})) / 22.034) * (\text{inpFld1} - 91.4)) + 91.4$$

How do I approach this in q4th? I have 2 input values that are integers. I want the wcf to be an integer as well, after the math is finished the decimal places are meaningless.

I thought this was confusing in java; but the stack based RPN of forth has really jammed my mind.

Dave

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 2, 2000 - 02:26 pm:

Here's how I converted it:

needs opg

```
fvariable inpFld1
fvariable inpFld2
```

```
: wcf ( F: inpFld1 inpFld2 -- wcf )
  inpFld2 f!
  inpFld1 f!
  let (((10.45+6.686112*sqrt(inpFld2)) -
    (0.447041*inpFld2))/22.034) *
    (inpFld1-91.4))+91.4:
;
```

Then:

1e 2e wcf f. -> 13.400527

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 2, 2000 - 02:32 pm:

Oops -- just missed that your inpFld1 and inpFld2 are integers. So:

```
fvariable inpFld1
fvariable inpFld2

: wcf ( inpFld1 inpFld2 -- ) ( F: -- wcf )
  s>d d>f inpFld2 f!
  s>d d>f inpFld1 f!
  let (((10.45+6.686112*sqrt(inpFld2)) -
    (0.447041*inpFld2))/22.034) *
    (inpFld1-91.4))+91.4:
;
```

If you want to convert that result to a single-cell integer afterward, do (for example)

```
1 2 wcf f>d d>s . -> 13
```

Neal

By [Dave Bennett](#) on Thursday, March 2, 2000 - 02:42 pm:

I am not sure that I am following this at all.

What is opg? It isn't in my libs??

What is F: ? It looks like you're telling us that inpFld1 and inpFld2 are floats.

What is f! ? Is this assigning the 1e 2e input to the variable names inpFld1...?

**It looks like the "let" is like "let" in scheme...
but it appears to be assigning the return value from wcf also?**

My java version got the same answer as your sample with 1e 2e wcf f. :)

Dave

By [Dave Bennett](#) on Thursday, March 2, 2000 - 02:46 pm:

OK. I got your second version...

s>d d>f (single to double)? (double to float)?

and you reverse this on the last line?

Am I getting a clue here?

I still don't understand the let creating a return value.

Dave

By **nbridges** on **Thursday, March 2, 2000 - 02:53 pm:**

opg.zip is in the File Area -- use the Search engine from the main site drop-down, enter OPG, there it is. It's an algebraic->RPN converter, very handy.

S>D D>F converts a single-cell value to a float. **F>D D>S** does the reverse.

Neal

By [Neal Bridges \(Nbridges\)](#) on **Thursday, March 2, 2000 - 04:50 pm:**

To answer your other questions --

Stack diagrams that look like (F: r1 r2 -- r3) show what a function will do on the floating-point stack. They are for documentation only; the functions work without the comments, but it's a good idea to have them in for clarity.

F! works like this:

```
fvariable pi
3.14159265e0 pi f!
```

It stores a floating-point value in a floating-point variable.

let can be used like this:

```
needs opg
fvariable result
let result=3+4:
```

If you leave out 'result', though, and just do

```
let 3+4:
```

the answer is left on the floating-point stack; this is what I'm doing in the 'wcf' definition I showed you. It saves us from defining another variable just to store the answer in.

Neal

By [Neal Bridges \(Nbridges\)](#) on **Thursday, March 2, 2000 - 04:54 pm:**

By the way, as a point of interest, if you do

```
needs opg
debug on
```

You will see that your formula translates to this:

```
10.45E 6.686112E inpFld2 F@ FSQRT F* F+
0.447041E inpFld2 F@ F* F-
22.034E F/
inpFld1 F@ 91.4E F- F*
91.4E F+
```

As you can see, *opg* is a handy tool for translating long infix (algebraic) formulas to RPN. :)

Neal

By [Dave Bennett](#) on Friday, March 3, 2000 - 06:07 am:

Thanks for the run through. After my post I realized that the F: was a stack diagram and not a functional thing. <duh> I thought the f! might have something to do with the float stack. (I'm just starting to learn my way around the forth documentations I have in a serious manner.)

Dave

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Text string on form

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Text string on form

By [Dave Bennett](#) on Thursday, March 2, 2000 - 10:19 am:

I have a form that takes up the whole screen. It has four items on it. Two input fields, a display field for a result, and explanatory text that is always to be displayed.

I created a text string under the form in Resource Edit. How do I go about displaying that on the form in my code?

Thanks.

Dave

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 2, 2000 - 10:48 am:

Use 'label' objects on your form to display each line of text, rather than a string object.

Neal

By [Dave Bennett](#) on Thursday, March 2, 2000 - 10:51 am:

I had hoped that wouldn't be the answer! :(

Kind of messy isn't it?

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 2, 2000 - 11:09 am:

Hmm, is it? There really can't be more than a dozen or so lines of text on an entire screen. What's messy about using labels?

Neal

By [Dave Bennett](#) on Thursday, March 2, 2000 - 11:31 am:

It takes me too many tries to get the wording right so I end up editing them over and over again in RsrcEdit! :)

I put in labels and it is starting to look like what I want.

Thanks.

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 2, 2000 - 11:37 am:

Hopefully not an exercise that has to be repeated frequently :) It's the easiest way. If you were determined to use a string, you could write a little routine in Quartus Forth to display that string on-screen, but I think in the long run you'll be happier with labels.

Allocating contiguous memory still accessible by HERE?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Allocating contiguous memory still accessible by HERE?](#)

By [Ed Mittelstedt](#) on Thursday, March 2, 2000 - 09:26 am:

Still a novice but working through the learning process of this wonderful language. Will this work? (pick your own value for n)

2 constant test-offset

```
struct
1 cells #test-count
1 cells field v1
end-struct s1
```

```
n s1 test-count !
here s1 v1 !
```

1 , 2 , 3 , 4 , 5 , ... , n ,

Later, I want to be able to iterate through the values with a do loop and an offset

```
s1 v1 @
s1 test-count @ 0 do
dup i test-offset * +
loop
```

I guess my question boils down to this: When I am storing these values with "," I'm assuming that I'm getting a contiguous space that I could later iterate through. I'm getting a fatal exception which is telling me that it is NOT contiguous.

I know that you are going to tell me, "use allocate!" The data I'm entering would be easier to debug these vertices if they are in comma format, so I'd like to keep that format if possible.

-Ed

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 2, 2000 - 09:59 am:

There's a problem with the way you're using struct... here's an example of correct use:

```
struct
1 cells #test-count
1 cells field v1
end-struct mystruct:
```

mystruct: fred

5 fred #test-count ! \ stores 5 in the #test-count field of fred

So I'm unclear as to what your example is trying to do, but let me show you another way to store data:

create data 1 , 2 , 3 , 4 , 5 ,

then you can retrieve any particular value with:

data 3 cells + @ . -> 4

Neal

By [Ed Mittelstedt](#) on Thursday, March 2, 2000 - 10:36 am:

Ah, I left out the instantiation of the struct. I *do* have that in my code - it just didn't get transferred to my example. Thanks for pointing that out though.

What I need to get clarified is your example of

create data 1 , 2 , 3 , 4 , 5 ,

If I actually entered 77 values this way, could I be assured there wer 77 continuguous cells so I could later reference any of them with the same kind of offset you supplied:

data 3 cells + @ . -> 4

I do see something else I'm doing wrong. I'm leaving out the CELLS word, just going off of a straight offset. Ouch!

But if you could clarify that contiguous memory issue, I would appreciate it.

-Ed

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 2, 2000 - 10:47 am:

Yes -- if you 'comma' a series of values into memory, they will be contiguous, so long as you're not interrupting them with new definitions or other activities that modify dataspace.

Neal

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THROW revisited

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

THROW revisited

By [Matthew Blair \(Blair\)](#) on Wednesday, March 1, 2000 - 12:35 pm:

I've been cleaning up my code, and one of the tasks has been to search for where I would **drop** a returned `Err` value, and replace the **drop** with a **throw** so that I can **catch** as I see fit. Ok.

So I have run into a problem in one of my words which calls `string>Field`. When I **throw** the return value from `string>Field`, the program crashes with a "Object not in form" error.

I understood **throw** to be the equivalent of **drop** when there is no **catch** (no pun intended there!). Any ideas on why this placement of **throw** is bombing?

Thanks,

Matthew

By [Erwin Schomburg](#) on Wednesday, March 1, 2000 - 01:17 pm:

Have you considered this to be the correct reaction upon the error code thrown?

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 1, 2000 - 01:36 pm:

You're getting "Object not in form" because the form you've got on screen at that time doesn't have a field in it for the console to use for input. You can do two things:

- 1) Put the required field into your form during debugging (copy it from tFRM 1000 in Quartus) or
- 2) Wrap your whole program in a simple catch:

```
: myprogram ... ;
```

```
: go ['] myprogram catch MainForm throw ;
```

Neal

By [Matthew Blair \(Blair\)](#) on Wednesday, March 1, 2000 - 02:02 pm:

I'm feeling very dense today, Neal. I don't understand either the cause of the problem or the effects of the solution (the second probably due to the first). Could you write more about the cause (i.e., the "...because the form you've got...doesn't have a field in it...")?

Thanks,

Matthew

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 1, 2000 - 02:08 pm:

When you're working in the Quartus Forth console, and you THROW a non-zero value, and there's no CATCH to handle it, an error message is generated in the console, and the console returns to accepting your interpreted input as usual.

For it to do the last step, it looks for a certain FIELD resource in the current form. If you're using some special form without that field resource, you'll get "Object not in form", which is entirely accurate -- the field object is not in the form.

Neal

By [Matthew Blair \(Blair\)](#) on Wednesday, March 1, 2000 - 02:13 pm:

(2 watt light bulb going off) Ah-hah! I see!

So, could I implement solution #2, and have my program return to the default form so that I can inspect the error message? How would I do that?

Thanks,

Matthew

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 1, 2000 - 03:20 pm:

Just as shown:

```
: myprogram ... ;
```

```
: go ['] myprogram catch MainForm throw ;
```

Neal

By [Matthew Blair \(Blair\)](#) on Wednesday, March 1, 2000 - 03:38 pm:

Duh! Excuse me while I slink back into my dark, dank little corner to avoid further embarassment... :(

Matthew

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 1, 2000 - 04:18 pm:

Hehe. Not to worry, glad to help :)

Neal

By [Marc](#) on Friday, March 3, 2000 - 04:54 pm:

Just curious to understand how you return to the main form ? Or is the displayed form captured in some environment when you do a catch ?

Thanks, also have problem with light :-)

Marc.

By [Neal Bridges \(Nbridges\)](#) on Friday, March 3, 2000 - 04:59 pm:

Normally your app would look something like this:

...

```
: go
  MyForm ShowForm
  begin ekey do-event again ;
```

To handle anything that might be THROWN without a CATCH during debugging, do this:

```
: debug
  ['] go catch MainForm throw ;
```

Then while testing in the console, use **debug** instead of **go**; any THROWS you're not explicitly CATCHing will be caught by this default CATCH, and it'll switch back to the main console form before reporting the error.

Neal

Neal

By [Jim Hendricks \(Jimh\)](#) on Friday, March 10, 2000 - 12:33 pm:

Just wondering how this form of catching exceptions where you use MainForm applies to standalone apps?

By [nbridges](#) on Friday, March 10, 2000 - 01:27 pm:

In a standalone app, you wouldn't be returning to the console, certainly. The technique as shown is for console debugging.

In a stand-alone app, THROWS not caught by a CATCH cause the app to terminate.

Neal

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Found Starting Forth IN STOCK!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Found Starting Forth IN STOCK!](#)

By **[Dan Brooks](#)** on Wednesday, March 1, 2000 - 10:01 am:

All-

After a months long fruitless search for a copy of Starting Forth, I have at last found a source that has the book in stock. They also have Thinking forth. The prices are in Pounds Sterling, but the approximate US \$ prices are:

Starting Forth: ~\$50.00
Thinking Forth: ~\$35.00
Shipping to US: ~\$ 8.00

Though it is not stated below, their website states that there is no currency conversion charge when using Visa/Master Card.

Dan Brooks
dbrooks1@mgfairfax.rr.com

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By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 1, 2000 - 04:18 pm:

Hi Dan -- glad you found it. MPE advertises that they have the book on comp.lang.forth, as do a couple of other suppliers.

Neal

By [Neal Bridges \(Nbridges\)](#) on Friday, March 3, 2000 - 10:30 am:

By the way, here's a link to all of the exercises in Starting Forth, translated into ANSI Standard Forth:

[Starting Forth exercises translated into ANSI Standard Forth](#)

Neal

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Large values & display formatting

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Large values & display formatting

By [Barry Ekstrand](#) on Wednesday, March 1, 2000 - 05:59 am:

I use floats to deal with values of varying size in an app, then convert to a double-length value for display (formatting with a `<# # # [char] . hold #s rot sign #>` statement). In order to show the output value properly including to 2 decimals, I have to multiply the value by $1e2$ (100) first.

I recently came up with a situation where the value for output is calculated at over 40,000,000.00. This means in formatting the value it is multiplied to become over 4 billion - fine for a floating point value, but it quite appropriately blows up when the conversion to a double-length value occurs, since the upper limit for a double-length number is a little over 2 billion.

I'm looking for a way to keep the accuracy of dealing with ones (rather than, say, thousands) and still have the ability to display the large value output to 2 decimals. Is there a way to display directly from the floating point value without converting to a double-length value first? If not, is there a trick out there to manipulate the value so it stays under the double-length limit yet is magically displayed as the original value?

Any help will be appreciated!

Barry Ekstrand

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 1, 2000 - 08:58 am:

Barry, I posted a routine here a few minutes ago to display large floats, but it has bugs. I've removed it; I'll post it again in a coffee or two.

Neal

Add a Message

Palm Emulator - How to transfer source files ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Palm Emulator - How to transfer source files ?](#)

By [Horst Neuschl](#) on Tuesday, February 29, 2000 - 06:23 pm:

How can I transfer source files into the memopad under Windows.

Copy and paste is not possible to emulator window.

A serial synch with another host I want avoid, because I have not sufficient serial ports.

And if a serial synch is unavoidable, what kind of cable is required?

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 29, 2000 - 07:17 pm:

You can do a network HotSync directly from the emulator to your desktop. The other method is to download the MemoPad.PDB from your Palm, and then just load that directly into the emulator; all your memos will appear. BackupBuddy works for this, as does pilot-xfer.

Neal

By [Edin Hodzic](#) on Wednesday, March 1, 2000 - 04:10 am:

Hello folks,

I have an emulator related question. Why does this little program work on my Palm IIIe and fails on the emulator? On my pilot it works since it prints my sync name, then it prints the string "demo" and some chars beyond it, and then "mismatch". On the emulator, it prints "match" no matter what I enter for the sync name.

Here is the program:

```
\ cmp
needs ids
needs syncname

: cmp
  1000 showform
  username s" demo" drop over
  2over type cr
  2dup type cr
  compare
  0= if ." match" else ." mismatch"
  then
  begin key drop again ;

' cmp (id) XX13 makeprc cmp
```

Output looks like this, if I enter "xxx" for the sync name:

```
xxx  
dem  
match
```

Any ideas?

Thanks.

Edin Hodzic

By [Horst Neuschl](#) on Wednesday, March 1, 2000 - 05:46 am:

Hi Neal,

thanks for your immediate reply. I am a newbie in Palm Computing and do not have the BackupBuddy till now (waiting for a credit-card to purchase in US). And the network HotSync, I didn't find out how to do it.

But I have found an other way to get the MemoDB into the desktop. I used RsrcEdit and will describe the procedure in details. For this RsrcEdit must be installed on Palm and Emulator.

- make a copy of MemoDB in RsrcEdit**
- rename the creator-id anyhow (if 'memo' is set, it will go to the Outlook notes after HotSynch and spoil them by doubling the entries)**
- set the backup-flag**
- do HotSynch and you can find 'Copy of MemoDB.pdb' in your backup directory.**
- load 'Copy of MemoDB.pdb' into your emulator**
- call RsrcEdit in your emulator**
- delete the original MemoDB**
- rename 'Copy of MemoDB' to 'MemoDB'**
- rename the creator-id to 'memo'**

that's it.

Would you be so kind Neil, to show me how to do the network HotSynch with the emulator, because it's a very useful feature.

By [Erwin Schomburg](#) on Wednesday, March 1, 2000 - 06:30 am:

To find information on how to NetSync to POSE scan this forum with the search function, the relevant thread is less than 10 days old if my memory serves me right.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 1, 2000 - 08:27 am:

Edin, your code is working perfectly in my emulator. What version of POSE are you using? I just tested under 3.0a4.

Neal

By [Horst Neuschl](#) on Thursday, March 2, 2000 - 04:30 am:

Erwin, the problem is, that I do not find any menuentry 'network', neither in HotSync on dektop nor in POSE. I use HotSync Manager v3.0.3 (German) and POSE 3.0a3. It runs under Win NT 4.0 with TCP/IP installed.

By [Erwin Schomburg](#) on Thursday, March 2, 2000 - 05:20 am:

Horst, PLEASE, read the entire thread "Network HotSync with the Palm OS Emulator" in this forum. Welcome back if you then still have open questions.

/Erwin

By [Horst Neuschl](#) on Friday, March 3, 2000 - 03:26 am:

Erwin, the things are running well now. Thank you very much for your help.

Horst

By [Marc](#) on Friday, March 3, 2000 - 05:02 pm:

It seems that the network hotsync is reserved to US version of PalmOS. At least not present in french and not supported according to 3com.

I am curious, does the method of loading the memodb work for all of you ? For me it has allways end-up with corrupted categories and crash POSE.

Thanks for you feedback

Marc.

By [Neal Bridges \(Nbridges\)](#) on Friday, March 3, 2000 - 05:35 pm:

Hi Marc. I've had no problems loading the MemoDB into the Palm OS Emulator.

Neal

By [Neal Bridges \(Nbridges\)](#) on Friday, March 3, 2000 - 11:58 pm:

What are you using to extract it from your Palm?

Neal

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More Doc puzzlement

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): More Doc puzzlement](#)

By **[John Oliver](#)** on Monday, February 28, 2000 - 02:33 pm:

Where do I find documentation on such words as EKEY and EKEY>CHAR ?

By **[Neal Bridges \(Nbridges\)](#)** on Monday, February 28, 2000 - 02:41 pm:

In the ANS Standard Forth document, supplied with Quartus Forth. EKEY and EKEY>CHAR are both in the "FACILITY EXT" wordset.

Neal

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Problem w/ DmResourceInfo

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Problem w/ DmResourceInfo

By [Wade Carlson](#) on Sunday, February 27, 2000 - 08:22 pm:

DmResourceInfo doesn't seem to be returning the correct ID for a resource. The following code snippet will demonstrate my problem.

Create a new database w/ RsrcEdit:

Name: Tester

Creator: abcd

Type: data

Resource DB: checked

Open it, and then go to New, and then Generic

Size: 10

ID: 8898

Type: test

and then hit done.

Now, enter the following code into memo pad:

```
\ Tester
needs strings
needs DataMgr
2variable dbr
2variable IDvar

: go
DmModeReadWrite z" Tester" OpenDB dbr 2!
0. IDvar >abs 0. 0 dbr 2@
DmResourceInfo ( &chunkLocalIDP. &resIDP. &resTypeP. index dbP. -- Err )
throw

IDvar 2@ d>s . ;
```

When I run this, I don't get the correct value (8898). Interestingly, though, if I enter the following line

```
IDvar dup dup 2 + 2 move 2 0 fill
```

before IDvar 2@ d>s . ;

I get the correct value. Why do I need to do this, and is this an adequate workaround for this

'bug'?

By [Neal Bridges \(Nbridges\)](#) on Sunday, February 27, 2000 - 08:43 pm:

It's simple -- IDvar doesn't need to be a double-width variable, just a single cell.

Change it to

variable IDvar

and print it with

IDvar @ .

Neal

By [Wade Carlson](#) on Sunday, February 27, 2000 - 09:32 pm:

Ahh, it works (boy do I feel dumb), but shouldn't the documentation then be `&resIDP` as opposed to `&resIDP.` ?

By [Neal Bridges \(Nbridges\)](#) on Sunday, February 27, 2000 - 09:59 pm:

The dot at the end of `&resIDP.` means the value on the *stack* is two-cells -- a 32-bit pointer. What it points *at* is only a 16-bit value.

`&resIDP` would be a 16-bit pointer -- one cell on the stack. But that doesn't tell you what it points at; it could point at a byte, a cell, two cells, a structure, another pointer, an array of pointers, anything.

The stack diagrams don't tell you the size of the data that a given pointer points at; they'd be hairy indeed if they did. The SDK docs are the place to look for that information.

Neal

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Inverting text

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Inverting text

By **Jim Meadows** on Sunday, February 27, 2000 - 05:08 pm:

I know its in there somewhere ... how do I display inverted text (white on black) under OS 3.0?

By [Neal Bridges \(Nbridges\)](#) on Sunday, February 27, 2000 - 05:30 pm:

This should help:

```
\ invertedtype 2/27/00 5:28 pm NAB
```

```
needs textalign
```

```
needs graphics
```

```
: invertedtype ( c-addr u -- )  
  cursor-position 2over swap >abs  
  WinDrawInvertedChars  
  cursor-position 2swap  
  pixel-width + at ;
```

Bear in mind that `invertedtype` will not scroll the screen or wrap at the right edge, the way the built-in type will.

Neal

By **Jim Meadows** on Sunday, February 27, 2000 - 05:50 pm:

Thanks Neal! Its just what I needed. - Jim

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Typo in serial.txt ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Typo in serial.txt ?

By [John Oliver](#) on Sunday, February 27, 2000 - 11:34 am:

While reviewing the archives for clues to serial comms, I found the following:

Posted by Steve Hanel on July 21, 1999 at 18:50:46:

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

and yet the serial.txt in the download area still has:

```
: serRecvCheck ( -- bytes. err )
tempLong >abs
43023 serSysTrap 2@a d0 drop ;
```

```
: serRecvWaitA ( bytes. -- err )
get-timeout 2swap
43023 serSysTrap4n ;
```

Clearly both can not correct can they ???

By [Neal Bridges \(Nbridges\)](#) on Sunday, February 27, 2000 - 02:01 pm:

That's a typo, for sure. Thought I'd nailed it -- thanks for the heads-up!

Neal

By [Wade Carlson](#) on Sunday, February 27, 2000 - 06:10 pm:

So to clarify for those of us who are not so swift, which one are we supposed to correct? (serRecvCheck, serRecvWaitA, or both?)

By [LGLisle](#) on Wednesday, March 1, 2000 - 07:54 pm:

Neal,

It seems that there are a couple of bugs in the library, and the library was last updated in December. I suggest we need a way of keeping track of which files need to be updated. The two I know of are serial.txt and LCD.txt, but are there others? I sometimes miss things.

L. Greg Lisle

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 1, 2000 - 08:12 pm:

I'll be reissuing all the library memos with the update; stay tuned.

Neal

By [Ron Doerfler](#) on Wednesday, March 1, 2000 - 09:49 pm:

LCD.txt has a bug? I'm using it, except for the LCDemit word, and I haven't had any problems, and I can't find references to any in the keyword search. Can you tell me what it might be? The only things I saw was that it seems to need core-ext which isn't included (but usually is anyway in most programs) and just a comment that refers to a "@" bitmap 1046 that's actually the correct 1064.

Thanks!

Ron

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 1, 2000 - 10:17 pm:

Actually I'm not aware of a bug in LCD.txt either -- let me know if there is one. It's a pretty simple library.

Neal

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Problem with Default case in CASE

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Problem with Default case in CASE

By John Newell on Friday, February 25, 2000 - 08:29 am:

I am a Forth beginner.

I was totally bogged down by the <default case> part of the CASE construct, which didn't appear to be working properly, and thought I would share my experience.

The following word:

```
: casetest ( n -- n1)
CR
CASE
1 OF ." Leaving 11. " 11 ENDOF
2 OF ." Leaving 12. " 12 ENDOF
\ <default case>
." Leaving 99. " 99
ENDCASE
;
```

upon execution of:

```
5 casetest .
```

displayed:

```
Leaving 99. 5
```

and not Leaving 99. 99 as I expected.

Reason:

The first thing that ENDCASE does is to DROP the top of stack because this is left on the stack by the failed OF words. (In the above case, it dropped my 99 and left 5.)

After each of the OF words, the top of stack is left as it was after the case value had been removed.

However, in the default case, the case value is still at the top of the stack. So, if the <default code is to place anything on the stack it must do as something like:

```
DROP <default case> 0
```

The DROP drops the top of stack (left by the failed OF's), <default case> places values on the stack as required, and the 0 is placed on the stack for ENDCASE to have something to drop.

I find no reference to this in any documentation or examples of CASE, either in Quartus or DPANS94.

The only clue I have found is in the definition of OF in DPANS94 6.2.1950 which specifies that the value on the tos is left if there is no match.

So, to get the word working properly,

```
: casetest ( n -- n1)
```

```
CR
```

```
CASE
```

```
1 OF ." Leaving 11. " 11 ENDOF
```

```
2 OF ." Leaving 12. " 12 ENDOF
```

```
\ <default case>
```

```
DROP ." Leaving 99. " 99 0
```

```
ENDCASE
```

```
;
```

and execution:

```
5 casetest .
```

displayed:

```
Leaving 99. 99
```

as required.

Thank you for listening.

By [Winchell Chung](#) on Friday, February 25, 2000 - 09:44 am:

Instead of doing

```
DROP ." Leaving 99. " 99 0
```

couldn't you do this instead?

```
." Leaving 99. " 99 SWAP
```

By [Ron Doerfler](#) on Friday, February 25, 2000 - 02:45 pm:

John,

Thanks!! I'll try to verify this as well. I've had puzzling behavior with CASE/ENDCASE and have reverted to COND/THENS in some cases, but I never really found the answer to this occasional odd behavior--I bet this is it. I know I was using the default case in some instances.

Ron

By [Neal Bridges \(Nbridges\)](#) on Friday, February 25, 2000 - 03:25 pm:

Quote:

The only clue I have found is in the definition of OF in DPANS94 6.2.1950 which specifies that the value on the tos is left if there is no match.

That's correct -- the default case has access to the CASE value, so it can take any appropriate action with the value.

Neal

By John Newell on Monday, February 28, 2000 - 04:33 am:

Thanks for your responses. I guess I was complaining that there was no clear written explanation of what happens in the default case. Even DPANS94, where it does mention the CASE word, just says <default case> before the ENDCASE word without explaining that the CASE value is on the stack or that something must be left for ENDCASE to drop. Would a book like Forth Programmer's Handbook explain all this? If so, I will invest \$50. Or some other book?

I see passing references, in other posted messages, that Neal is expanding the descriptions of words in the Quartus library. This would be extremely beneficial, especially with examples. I am sure the library has lots of very useful words, but it is sometimes difficult to work out how to use them just by looking at their definitions.

Cheers for now. Back to work.

By [Neal Bridges \(Nbridges\)](#) on Monday, February 28, 2000 - 02:22 pm:

Quote:

The only clue I have found is in the definition of OF in DPANS94 6.2.1950 which specifies that the value on the tos is left if there is no match.

With CASE/OF/ENDOF/ENDCASE, knowing that the OF..ENDOF clause leaves the value on top of the stack in the event of a non-match, it stands to reason that after a series of non-matching OF..ENDOF clauses, the value would still be on the top of the stack.

Neal

By John Newell on Tuesday, February 29, 2000 - 04:51 am:

P.S. Apologies for getting your name wrong Neal. Won't happen again.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 29, 2000 - 07:14 am:

No problem, John. I'm used to it; I get lots of variations :)

Neal

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Palm at CeBIT

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Palm at CeBIT](#)

By [Michael Rowe](#) on Friday, February 25, 2000 - 07:27 am:

The Palm part of the 3Com booth was very busy and the IIIc was the star of the show. I was suprised at the brilliant color quality, as I had expected much less.

Palm also had some Bluetooth prototypes, which looked interesting.

There were some third party vendors on the stand, but no Handspring people or products in sight. I was also unable to find any Springboard modules anywhere else at the fair.

By [Neal Bridges \(Nbridges\)](#) on Friday, February 25, 2000 - 04:55 pm:

The colour screen is certainly bright. I think you could signal Batman with this thing.

Neal

By [Erwin Schomburg](#) on Monday, February 28, 2000 - 04:44 pm:

For all of you not believing in manuals, to adjust brightness press the ON button and a slider pops up. The staff at the CeBIT stand was advised to always have it at full blast.

/Erwin

By [Erwin Schomburg](#) on Tuesday, February 29, 2000 - 01:15 pm:

One more for this subject: Adopters might want to check the PalmIIIc readability fonts (at PalmGear etc.), I found them to be a real readability enhancement.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 29, 2000 - 05:52 pm:

I'll try them. I find because the screen is so bright, I need to hold it further away to read it well.

Neal

By [Erwin Schomburg](#) on Wednesday, March 1, 2000 - 03:05 am:

Hehe, I perceive matching symptoms, having worn glasses for some time, approaching or already having crossed 40.....

/Erwin

By [E. Ross Helton](#) on Wednesday, March 1, 2000 - 08:55 am:

Hey Erwin;

Let's not get personal. Some of us don't have that far to go until 100. You youngsters have got to get it together. I was sayi... Where did I put those...

Make it a good day!

Ross

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Zstrings

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Zstrings](#)

By [Jim Hendricks \(Jimh\)](#) on Thursday, February 24, 2000 - 02:44 pm:

Just created a word(s) for inplace conversion of Forth counted strings to "C" zstrings, here goes:

```
: dup2 ( n -- n n n )
dup dup ;

: dup3 ( n -- n n n n )
dup2 dup ;

: -rot ( a b c -- c a b )
rot rot ;

\ ANSI string lib CMOVE ( my own implementation )
: CMOVE( c-addr1 c-addr2 u -- )
0 do
  swap 2dup c@ swap c!
  char+ swap char+
loop 2drop ;

: CNT$2Z$ ( c-addr -- )
dup3 c@ dup >r
chars + -rot char+ swap
r> cmove 0 swap c! ;
```

Basically CNT\$2Z\$ uses cmove to shift the counted string down 1 character in memory, then places the null at the end. I implemented my own cmove based on my understanding of the cmove in the ANSI string lib since I didn't see any in the Q libs. The Any suggestions/improvements welcome, even on a suggested name for the word. As always this code is donated to the Q community.

Jim

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 24, 2000 - 03:02 pm:

Thanks, Jim. I'd call it **counted>zstring**. Rather than CMOVE, you can simply use MOVE.

Neal

By [Jim Hendricks \(Jimh\)](#) on Thursday, February 24, 2000 - 04:20 pm:

Yes, I could use MOVE but doesn't MOVE make implementation specific assumptions that could render counted>zstring (I like the name) useless on other implementations? I only code forth right now on Quartus but I always want to leave my options open so I want to make my code as portable as possible. From what I see in the ANSI spec, MOVE is based on address units, CMOVE is based on characters. MOVE also makes no distinction on how the MOVE is performed, whereas CMOVE specifically must move from the lower chars to the higher. As an exercise, I also implemented CMOVE> which specifies that the move must occur from the higher addresses to the lower. For counted>zstring to work, I must have the assurance that the copy is from the lower chars to the higher since I am only moving the string down 1 character in memory. In practice, most MOVE implementations probably move from the lower to the higher just because it is easier, but it is not a standard requirement. What are your thoughts on this?

Jim

PS: heres the CMOVE> implementation

```
: char- ( n -- n-1char )
1 chars - ;

: cmove> ( c-addr1 c-addr2 u -- )
dup >r 1- dup d+ r>
0 do
  swap 2dup c@ swap c!
  char- swap char-
loop 2drop ;
```

I realize that the char- is the equivalent of 1- but once again, this makes it more implementation non-specific. Kinda strange that the ANSI standard would require a char+ word in CORE, then not even mention a char- word, not even in an extension lib.

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 24, 2000 - 05:29 pm:

My thought was, for Quartus Forth:

```
: cmove move ;
```

This keeps your source portable.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 24, 2000 - 06:27 pm:

As for MOVE -- it moves either up or down as required, so that the region at a2 matches what used to be at a1, always.

Neal

By [Jim Hendricks \(Jimh\)](#) on Thursday, February 24, 2000 - 07:49 pm:

OK, I agree that

```
: cmove move ;
```

would provide the portability. The ability for MOVE to start at the top or the bottom though is specific to Quartus' implementation so I would say that cmove> should then be:

```
: cmove> move ;
```

also to provide portability when needing a move that moves the end of the string first.

With Quartus cmove and move both work on the same addressing since the char and address unit is the same, is my assertion that cmove is more appropriate for portability due to the possible difference between char and address unit? (ie. is char and address unit one and the same in the standard, or can they be different?)

As an aside, to get move to do a true copy even when the addressing overlaps either top or bottom, are you using a temp buffer with a dual move, source->buffer->destination? If so, this buffer wouldn't happen to be the same area used by WORD for providing the temp storage of the parsed word? I ask because my purpose in creating counted>zstring was for a word that parses the next word as a name and passes it as an argument to a systrap which requires a zstring. Since parse does not create a copy of the parsed word but just gives you a pointer into the input buffer, I couldn't do an inline convert to a zstring. I figured the simplest way would be to use:

```
BL WORD TEST DUP COUNTED>ZSTRING >ABS ...SYSTRAP
```

This would then avoid allocation of a temp buffer for the conversion. If your version of MOVE though uses the same temp workarea as WORD then I would have to use my version of CMOVE.

Jim

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 24, 2000 - 08:40 pm:

The ability for MOVE to decide to move data from either the top or the bottom is not specific to Quartus Forth; it is a necessary requirement of the Standard. For the target to always contain a copy of the source, it is not necessary to use an interim buffer at all; instead, MOVE simply has to decide whether to start copying data from the top, or the bottom of the region.

You are right -- address units and characters are the same size on the Palm.

For better portability of character-sized moves on different systems, you'd want to use a suitable implementation of CMOVE or CMOVE>.

Neal

By [Jim Hendricks \(Jimh\)](#) on Friday, February 25, 2000 - 09:24 am:

Oops, helps if I read the standard a little better. For Move I only read the part about moving source address units to destination address units and missed the statement that specifically requires that the resulting destination is the same as the original source.

Seems to me that the standard then is inconsistent in that MOVE (part of core) is required to autodetect the direction it should move in, but then CMOVE (part of string) does not, thus requiring CMOVE>. I would think that CMOVE and MOVE should only differ on the address unit/character basis. Oh Well, at least I can go implementation non-specific by using CMOVE, but rely on the implementation specifics for the implementation of CMOVE. It was also a nice exercise to implement CMOVE and CMOVE> myself in ANSI Forth which means if I ever work with another Forth that doesn't have CMOVE and CMOVE> and doesn't have the same size address unit and char, I already have the code to implement CMOVE and CMOVE>.

Jim

By [Neal Bridges \(Nbridges\)](#) on Friday, February 25, 2000 - 09:38 am:

CMOVE and CMOVE> are old Forth words, intended as optimized copying functions. CMOVE> also can be mis-used as a FILL.

Both are easy to implement in high-level Forth.

Neal

By [Edin Hodzic](#) on Tuesday, February 29, 2000 - 02:04 pm:

Hello there,

is there a way to put a static string in memory, similar to , and c , but a whole string, perhaps something like: , " a string" could allocate space and copy the string in there. I understand one could use s" ..." then allot and then move. However, the string is in the memory twice then. It should be simple to implement the word, if you know how the parsing works?!

Thanks.

Edin Hodzic

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 29, 2000 - 03:45 pm:

Try:

needs toolkit

```
char " parse Hello there" place,
```

This will put Hello there directly in memory at HERE as a counted string (length in the first byte).

Neal

By [Edin Hodzic](#) on Wednesday, March 1, 2000 - 02:03 am:

Thanks Neal. The closest I could get is something like this:

```
:noname s" string" ; execute place,
```

However, isn't the string stored in two places? Once somewhere in the code and once right below here? I would like to avoid the replication...

Thanks.

Edin Hodzic

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 1, 2000 - 08:28 am:

You're right, with :noname the string would be stored twice. The version I gave only stores it once, as requested. Let me know how it works out for you!

Neal

By [Edin Hodzic](#) on Wednesday, March 1, 2000 - 02:00 pm:

Yes, thanks, your code does exactly what I was looking for...

Thanks.

Edin Hodzic

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Cannot use MakePRC under color OS 3.5

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Cannot use MakePRC under color OS 3.5

By [Jim Meadows](#) on Thursday, February 24, 2000 - 02:19 pm:

I cannot seem to get MakePRC to work on the emulator (3.0a4) using the color OS 3.5 rom (normal or debug). It works fine on the emulator using the OS 3.0 rom. I have the exact same copy of startup.quartus on it with my registration code and the same Hot Sync User Name. Any thoughts?

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 24, 2000 - 02:32 pm:

I'd need more details on what's failing for you, Jim.

Neal

By [Jim Meadows](#) on Thursday, February 24, 2000 - 02:51 pm:

When I try to use MakePRC I get the message "Invalid registration code".

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 24, 2000 - 03:01 pm:

Using version 1.2.5? Hmm. Are you sure the HotSync name is identical to that used on your Palm? And also -- are you sure your *startup.quartus* memo is being executed? Put a talking comment in it:

.(Hello!)

to be sure it's being read in at startup.

Neal

By [Jim Meadows](#) on Thursday, February 24, 2000 - 08:50 pm:

I put the .(Hello) in my startup and it displayed so I know I am executing it but I am running 1.2.1R . Have I missed an update?

- Jim

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 24, 2000 - 08:52 pm:

I think you must have missed it, Jim. I'll send it at once.

Neal

By [Jim Meadows](#) on Thursday, February 24, 2000 - 08:58 pm:

WOW! That was fast. Thanks for your quick response. I, like others, really appreciate all you do for us!

- **Jim**

By **Jim Meadows** on **Thursday, February 24, 2000 - 09:28 pm:**

That did the trick. I decided to post the dumb thing I did so others might not make the same mistake.

I had previously received the update to 1.2.5 along with 1.2.1, but since I saw that 1.2.5 was for the color OS & I did not have a color palm I just installed 1.2.1 on my palm ... which is what I used when I begin using the color rom on the emulator. Now that I installed 1.2.5 on the emulator MakePRC works just fine.

Question - should I/can I install 1.2.5 on my Palm III?

By [Neal Bridges \(Nbridges\)](#) on **Thursday, February 24, 2000 - 09:31 pm:**

Yes, 1.2.5 is fully backward-compatible. The primary change was a compensation for some character tables that Palm unwisely changed when building OS3.3.

Neal

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Reading the color value of a pixel

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
Reading the color value of a pixel

By **Jim Meadows** on Thursday, February 24, 2000 - 01:42 pm:

Is there any way to read the color of a pixel on the screen? (For b&w you would get a 1 or 0, for grey scale you would get the grey value & for color you would get the rgb color value)

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 24, 2000 - 02:01 pm:

There's nothing portable all the way back to the black and white models. I believe there's a function in OS3.5 for querying pixel colour, though.

In older models you'd have to find the address of the display window, and fetch the value yourself.

Neal

By **Jim Meadows** on Wednesday, March 1, 2000 - 10:37 am:

Neal,

Could you show me how to add new system calls to Quartus Forth? I have found the new routine for reading a pixel. Its prototype is:

`IndexedColorType WinGetPixel (Coord x, Coord y)`

-> x pointer to the x coordinate of a pixel

-> y pointer to the y coordinate of a pixel

It returns the indexed color value of the pixel.

Thanks, Jim

(Once I learn how, I'll be adding other words to support the new color calls & will post them as I develop them).

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 1, 2000 - 10:49 am:

Here's the new OS3.5 system call, **WinGetPixel**:

```
: WinGetPixel ( y x -- pixel )  
41857 systrap 2drop d0 drop ;
```

But don't go to too much trouble implementing all of them -- I'm adding them as primitives into the new Quartus Forth update; that's the reason it's been held up.

Neal

By **Jim Meadows** on **Wednesday, March 1, 2000 - 12:42 pm:**

Great!!! I look forward to the new release! - Jim

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Quartus Forth 1.2.1 crashes on ": ..(41 parse tinytype ; immediate"

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Quartus Forth 1.2.1 crashes on ": ..\(41 parse tinytype ; immediate"](#)

By [Adalipu](#) on Tuesday, February 22, 2000 - 03:08 pm:

Why does the Palm throw a Fatal Exception when encountering this commang in startup.quartus?

The command should define the word ..(that allows tinytyping from :-definitions like:

```
: chdeatt ( 3 * nr )  
..( Gschick ) pnr 2 tspaces ..( K-risma ) pnr 2 tspaces ..( Gscharf ) pnr ;
```

Am I thinking wrong s/where?

Thanks!

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 22, 2000 - 03:13 pm:

What is **pnr**? The definition you're showing is of a word called **chdeatt**, the definition of **..(** is not shown.

I'll need a bit more information to help.

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 22, 2000 - 03:19 pm:

Oh hang on, I just saw the code snippet in the subject of your message. Ok.

```
needs tinyupper  
needs tinylower  
needs tinysymbols
```

```
: ..( 41 parse tinytype ; immediate
```

This works fine for me. Are you including all the various tiny-character libraries?

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 22, 2000 - 03:24 pm:

By the way -- when I say it works fine, I have in fact tested it from inside a definition:

```
: go  
  ..( This is tiny!)
```

```
10 0 do i . loop ;
```

The only thing that occurs to me -- are you trying to print tiny characters right at the bottom of the screen, and hoping they'll scroll up into view? The 'tiny' library characters don't scroll, you have to have enough room to display them.

Neal

By [Adalipu](#) on Wednesday, February 23, 2000 - 08:49 am:

Sorry, I haven't been too clear, I'm afraid. Has been quite late...

I'll try to reformulate my question completely, starting at the other side of the horse:

Let's say I have a Resource containing a really big superstring. How do I read an individual Byte from it (given the offset) for **tinyemit**'ing? Or better yet, how do I put a certain number a chars starting at a certain offset inside that Resource onto the screen in tiny letters?

Scrolling is no problem, I'm setting the cursor to the correct position.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 23, 2000 - 09:09 am:

In the first instance, open and lock the resource, read the required byte with **c@a**, and use **tinyemit** to display it.

In the second instance, open and lock the resource, copy the string you wish to display to a small buffer in dataspace (with **MemMove**), and then use **tinytype** to display it. Or alternatively -- use a loop to read and **tinyemit** each character.

The use of **tinytype** and **tinyemit** here doesn't change anything -- you could as easily be using **type** and **emit**.

Neal

Add a Message

Fun with control structures!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Fun with control structures!

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 22, 2000 - 12:04 pm:

Here's an interesting construct (pseudo-code):

```
: go
  begin
    cond1 while
      do-something
    cond2 until
  then ;
```

This gives you a loop with two exit points.

Neal

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An advertisement for Quartus Forth

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): An advertisement for Quartus Forth](#)

By **[Neal Bridges \(Nbridges\)](#)** on Tuesday, February 22, 2000 - 11:29 am:

An ad for Quartus Forth --

<http://quartus.net/ads/ad1.html>

Neal

By **[Bill marcy](#)** on Tuesday, February 22, 2000 - 01:27 pm:

If you send me over a copy, I will put it up on my website (granted, much differnet content, but lots of hits).

By **[Neal Bridges \(Nbridges\)](#)** on Tuesday, February 22, 2000 - 01:40 pm:

Thanks Bill! Will do.

Neal

By **[Neal Bridges \(Nbridges\)](#)** on Tuesday, February 22, 2000 - 02:14 pm:

I've mailed you a copy. It's downloadable as

<http://quartus.net/ads/ad1.zip>

Neal

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box

Password:

empty. Your e-mail address is optional.

E-mail:

Pila

Quartus Handheld Software: Discussion Forum: Quartus Forth (PalmOS version): Pila

By **Jim Meadows** on **Monday, February 21, 2000 - 11:05 pm:**

Neal,

I have been using tealpaint & RsrcEdit to create and trim down bitmap files for my Quartus application I'm working on. I'm ready to start creating greyscale & color bitmaps & I believe I can do it using PilRC (tealpaint only support b&w for now) ... but I need Pila to change the .bin file into a .prc. I have tried to follow the links listed after searching for Pila, but they dead end. Where & how can I get Pila? (or is there another simple way to do this?)

Jim

By **Neal Bridges (Nbridges)** on **Monday, February 21, 2000 - 11:35 pm:**

Just hunted it down.

<http://www.mercury.spaceports.com/~mklasjon/pilot.html>

Neal

By **Jim Meadows** on **Monday, February 21, 2000 - 11:54 pm:**

Thanks!!!!!!

- Jim

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JackFlash

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): JackFlash](#)

By **mikew** on **Monday, February 21, 2000 - 09:30 pm:**

In case anyone is wondering, Quartus does indeed run from Flash memory using the new JackFlash utility. So do RsrcEdit, MathLib, and PenDragon Forms. I successfully installed all of the above to Flash on a PalmIII with no trouble. On my machine, JackFlash gave me about 830k more usable memory -- not bad for \$25.

CAVEAT: Flash memory modifiers still scare me. I am in no way endorsing this or any other such software. (I also haven't done extensive testing yet)

Cheers,

Mike

By [Neal Bridges \(Nbridges\)](#) on **Monday, February 21, 2000 - 10:18 pm:**

Thanks for the report, Mike. I'm wary of flash modifiers, myself.

Neal

By [Barry Ekstrand](#) on **Tuesday, February 22, 2000 - 08:27 am:**

Just to add my 2 centavos worth: on my old PPro-upgraded-to-Palm III, I ran Flashbuilder to make use of the available flash RAM. Overall things went pretty smooth, but I did have a couple of instances where I ended up with the dreaded "flashing welcome screen" and had to clear flash memory (along with everything else!) and start over with a clean slate to recover. In one case I could trace the experience to trying a new app out like Afterburner, in another I had apparently tried to subtract and then add programs to flash without completing the Flashbuilder routine in between, and that apparently gave me a corrupted result. On the plus side, while an anxious experience, the Palm desktop restored all conventional RAM each time flawlessly, and then it was a matter of reloading flash with the apps that I kept there. Now that I have a Palm Vx, I have enough memory that I haven't had the urge to chase flash again.

Barry

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Color Quintominoes

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Color Quintominoes](#)

By [Erwin Schomburg](#) on Monday, February 21, 2000 - 06:01 am:

Awaiting the "Real Thing" to be in my hands this week, I posted a POSE generated color version of my Quartus Quintominoes to PalmGear. This version uses static colors for the pieces and runs only on POSE with the color image and (hopefully) on the real thing. As soon as I get a real PalmIIIc it will get cycling colors and shall be a merged version that runs on almost all Palm devices out so far.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Monday, February 21, 2000 - 09:29 am:

I daresay that's the first Quartus Forth color app. Congratulations!

Canada gets the new devices after a bit of delay. I'll be watching for the IIIc, and picking one up as soon as they arrive.

Neal

By [E. Ross Helton](#) on Monday, February 21, 2000 - 12:10 pm:

Hi Erwin;

Congradulatiions. You seem to be on the cutting edge of things most of the time. Hang in there

Make it a good day!

Ross

By [Neal Bridges \(Nbridges\)](#) on Monday, February 21, 2000 - 01:13 pm:

Uh oh. I just checked PalmGear, and Quintominoes Color is somehow missing the blurb that says how easy it was to create a color application using Quartus Forth.

:)

Neal

By [Erwin Schomburg](#) on Monday, February 21, 2000 - 01:47 pm:

Neal, Blurb coming, check again in a minute! Thanks, Ross.

/Erwin

By [Bill MArCy](#) on Monday, February 21, 2000 - 01:48 pm:

Now that is an oversight!

By [Neal Bridges \(Nbridges\)](#) on Monday, February 21, 2000 - 01:49 pm:

Woohoo! Thanks Erwin.

Neal

By [Matthew Blair \(Blair\)](#) on Monday, February 21, 2000 - 02:24 pm:

Hey, I never saw that in the license! Or do you have a special discount program for developers who actively promote the Quartus Forth brand?

:^)

Congratulations, Erwin. BTW, how hard was it to "upgrade" your app to color?

Matthew

By [Neal Bridges \(Nbridges\)](#) on Monday, February 21, 2000 - 02:58 pm:

Hehehe. Well, active promotion is in the developers' best interests -- keeps the Quartus Forth platform alive and thriving.

Neal

By Erwin Schomburg on Monday, February 21, 2000 - 03:50 pm:

Just plugging in the color and colornames files, some color definitions and filling of all pieces (the word already there from displaying the active piece), hard setting of color depth and there we are. For the version that runs with about everything out there (almost there), inventing a word to check possible color depth', and a OS version check to exclude functions that are not possible prior to OS3.0. Not too hard all in all.

/Erwin

By Erwin Schomburg on Wednesday, February 23, 2000 - 12:36 pm:

Now even more beautiful (v2.50), cycling colors, runs on devices from OS3.0 upwards (only in gray of course). Sources on request, same Postcard rules as for the time-unlimited version apply.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 23, 2000 - 01:43 pm:

Pretty groovy, Erwin. You might want to change the main description of the program at PalmGear -- it says in top part that it only runs on colour devices, and in the bottom part that it runs on both.

Neal

By Erwin Schomburg on Wednesday, February 23, 2000 - 04:48 pm:

Between us, quick shot. Official statement, I don't change the main description, the enhancements may be read from the update description 8-)

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 23, 2000 - 04:49 pm:

Hehe. Well, I like to update both of the descriptions, to make sure they don't conflict -- many people don't read past the main entry.

Neal

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 23, 2000 - 04:50 pm:

By the way, I'm hearing June/July as a target for seeing IIIc devices in Canada(!). I'll have to source one elsewhere.

Neal

By Erwin Schomburg on Wednesday, February 23, 2000 - 05:20 pm:

The site uploads cost me more time than re-programming the game, I'll leave it as is.

I was promised delivery of a PIIIc around start of CeBIT fair, that would be tomorrow. We'll see.

/Erwin

By [Jim Hendricks \(Jimh\)](#) on Friday, February 25, 2000 - 09:31 am:

Neal, I am not to up on international purchases etc. so I will be showing my ignorance on this one. Why can't you order the IIIc over the internet? If you can't do it over the internet, can one of us Yanks buy one on your behalf and ship it to you? Or is that illegal?

Erwin, you are in Deutchland correct? I am really suprised that Germany can get their hands on the device so quickly while Canada must wait so long.

Neal, sounds like you either need to move to the US or Germany! Just kidding!

Jim

By [Neal Bridges \(Nbridges\)](#) on Friday, February 25, 2000 - 09:40 am:

Hehehe. I can order one via the internet, but I get whacked for customs and duty as it crosses the border. I also greatly prefer to buy something only after I have turned it over in my hands to see it isn't damaged in some way. With mail-order, I don't have that option.

Neal

By Erwin Schomburg on Friday, February 25, 2000 - 11:36 am:

My supplier mailed me that he has them definitely in stock, but could not remember if he had instructed his P&H help to post the parcel to me before he went off to CeBIT.....

So its either tomorrow or next weekend.

Ah, and yes, I'm in Germany.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Friday, February 25, 2000 - 01:12 pm:

Lo and behold, I sourced one today here in Toronto; it's in my hands now.

Neal

By [Jim Hendricks \(Jimh\)](#) on Friday, February 25, 2000 - 06:18 pm:

Congrats Neal (Sorry you have to wait Erwin!)

Neal I understand your touch/inspect feeling with purchasing, I work for a living as a programmer and therefore everyone assumes that I would never purchase retail again what with e-retail and all...

Darn on the color unit coming out so late, I finally convinced my wife I needed the Vx for Christmas, don't think I can convince so soon on the IIIc.

BTW Erwin, I spend time occasionally in Germany on business, I will tentatively be in the Frankfurt area mid to late March if this newest contract goes through. If that's anywhere near your vicinity, maybe we could tip a few beers together (We'll make sure a few are in salute to Neal). I am looking forward to driving 240KPH again!

Jim

By [Neal Bridges \(Nbridges\)](#) on Friday, February 25, 2000 - 06:52 pm:

Thanks Jim. It's a nice device!

Neal

By [Erwin Schomburg](#) on Monday, February 28, 2000 - 04:50 pm:

Tracked down my guy on CeBIT, did not leave stand without PIIIc. Some work to be done to real machine Quintominoes, its a bit sluggish, so I need to find where I erred.

BTW: Benchmark for PIIIc with CruiseControl says 204%

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Monday, February 28, 2000 - 04:51 pm:

Fast! The screen refresh is slower on the IIIc than on the earlier monochrome devices -- this is likely the cause of the sluggishness you're seeing.

One tip -- make your bitmaps 'family' bitmaps, with a 256-colour version in each one. They will draw much faster on-screen.

Neal

By Erwin Schomburg on Sunday, March 5, 2000 - 06:42 am:

If I wasn't too stupid to overlook the obvious, or one of the others comes up with something really clever, I found its impossibly lagging if you try to drag/redraw a colored piece with the stylus, so version 2.51 just blinks out the active piece and redraws when the stylus is lifted.

Workarounds to deal with this in a more clever way most welcome.

/Erwin

By [Garth Kidd](#) on Sunday, March 5, 2000 - 08:25 am:

Howabout dragging the outline?

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 11:23 am:

Erwin, if I recall correctly, you redraw the entire screen each time a piece changes position, yes? It would be better to just 'float' the dragged piece over the screen. It's a bit tricky to write, but it'd give the smoothest result.

Neal

By Erwin Schomburg on Sunday, March 5, 2000 - 11:48 am:

Neal, tried that, no discernible improvement. Something working was to reduce color depth while dragging, restore on stylus lift, but I didn't like the overall effect. I'll try and give Garth's proposal a go, but I have little hope that *any* kind of realtime redraw in a full depth color screen environment is feasible.

Anybody here with something that already works to prove me wrong or can prove my suspicions to be correct?

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 11:58 am:

I'd need to know more about what sequence of steps you're using do to the redraw. I haven't played with it much, but there may be some way to speed it up.

Neal

By Erwin Schomburg on Sunday, March 5, 2000 - 01:07 pm:

Need to shake out the fluff in the code. A quick and dirty mixture of float over and only outlining the floated over areas during drag-time brought significant speedup. I have some more optimizations in mind, so I think I can bring it up to make a smooth impression again.

One is for sure, the days of careless "its so fast, don't care about redundant redraws" are over when working the PalmIIIc.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 01:10 pm:

For sure -- the 8-bit display takes several times longer to draw.

Neal

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 01:41 pm:

By the way Erwin -- on comp.lang.forth yesterday there was code posted that shows all the solutions for the Pentominoes puzzle. Thought you might be interested.

Neal

By Erwin Schomburg on Sunday, March 5, 2000 - 04:51 pm:

Thanks, its "only" all solutions for the 6by10 part of the problem so far. I'll see if I can port it to Quartus, and maybe I can make it do graphical representations of solutions in Quintominoes.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 04:57 pm:

Let me know if you need a hand. He hasn't gone to the trouble of using Standard Forth, so some of it will need revising.

Neal

By Erwin Schomburg on Sunday, March 5, 2000 - 05:06 pm:

Yes, I've seen DEFER and others from olden days. Thanks, I don't think I'll have much of a problem, except the looooong lines, but I'll shout if anything unforeseen hits me.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 05:12 pm:

One thing that stood out for me was the use of

'x to specify a literal character value of 'x'.

Standard Forth would be

char x

Neal

By [Garth Kidd](#) on Sunday, March 5, 2000 - 06:28 pm:

Are there any colour modes which have a smaller bit-depth?

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 06:54 pm:

Only grayscale modes, at least as supported by the OS.

Neal

By [Erwin Schomburg](#) on Monday, March 6, 2000 - 08:27 am:

There is also Depth, where you can restrict color depth on a per-application basis, that one has color in the lower depths, but I could not find a meaningful mapping to what colors are there.

To get back to the problem, I found my error, I can now drag as fast as the stylus moves. I do not need to bother with tricky float-over schemes, I can still simply do full redraws.

I'll do some regression testing before I put it up at PalmGear. Thanks for all your suggestions, but as so often the root of the problem was between my ears....

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Monday, March 6, 2000 - 04:06 pm:

Hey, that's great, Erwin. Can you hint at what the problem was?

Neal

By [Erwin Schomburg](#) on Monday, March 6, 2000 - 04:22 pm:

When dragging, I used to have it redraw at every positional increment in the 8pix sized grid of the gameplane, even when the stylus stroke (already) was outside (further drawn) than that. That was fine with monochrome, the lag behind barely if at all noticeable. Now I redraw (only) where the stylus actually is when the event loop comes around next time while dragging a piece.

Have you had a look? Increase in performance is barely noticeable on the monochrome devices, on a color device the enhancement is just short of spectacular, I'd say.

Another one for the theory that too much processing power spoils programming style. 8-)

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Monday, March 6, 2000 - 10:40 pm:

That's interesting -- thanks for sharing!

Neal

By Erwin Schomburg on Tuesday, March 14, 2000 - 07:07 am:

Feedback on Pentominoes Solver: I managed to have a run through of the revised version (the one *not* using suspended compilation in a :NONAME) with only minor modifications to make Quartus eat it. However, since this thing is a student's exercise in obfuscated Forth, using self generating code (therefore only running in the Quartus environment and not a self contained .prc) it only runs the 3*20 and 4*15 series, before it blows out at Quartus' code space limit on an OS3.5/8MB machine. However, I might pick some of the ideas in there and try to develop it further.

/Erwin

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Where are serControl & serSendFlush?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Where are serControl & serSendFlush?

By [John Oliver](#) on Sunday, February 20, 2000 - 01:40 pm:

I can not find serControl and serSendFlush in serial.txt ... are they hiding somewhere else? serControl would provide several functions I would like to have, esp. BREAK

Also: I have searched the archives and find only a couple of examples of serial I/O ... neither really works well when I try them. Can anyone offer a snippet which would display received chars and send entered chars ... I don't need the setup & inits, just the actual send/receive loop.

Thanks

By [Neal Bridges \(Nbridges\)](#) on Monday, February 21, 2000 - 01:29 pm:

The SDK header files list serControl as:

```
Err SerControl(UInt refNum, Word op, VoidPtr valueP, WordPtr valueLenP)
SYS_TRAP(sysLibTrapCustom+17);
```

sysLibTrapCustom is (hex) a805, or 43013; 43013+17=43030.

So (untested):

needs serial

```
: serControl ( &valueLenP. &valueP. op -- err )
  43030 serSysTrap 4drop drop d0 drop ;
```

\ and likewise:

```
: serSendFlush ( -- )
  43020 serSysTrap d0 drop ;
```

As to the send/receive example -- is there really nothing in the archives? I remember such a thing in one or more incarnations. If nobody has anything to offer, I'll put a small send/receive example together.

Neal

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Palm VII Internet Library Support

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Palm VII Internet Library Support](#)

By [Ed Mittelstedt](#) on Wednesday, February 16, 2000 - 04:40 pm:

Does support for the following exist?

The InetLib* systraps such as:
InetLibGetEvent

The keyDownEvent key codes such as:
vchrHardAntenna
vchrRadioCoverageOK

I'm interested in using QForth to create some wireless apps for the Palm VII.

Thanks,

-Ed

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 16, 2000 - 04:47 pm:

You can access any library (including INetLib) from Quartus Forth. You'll need to draw the actual library trap numbers out of the SDK headers, as was done in *serial.txt*. Let me know if you need help with this.

The extra events are also directly available.

Neal

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Problems with LstSetListChoices

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Problems with LstSetListChoices

By [Wade Carlson](#) on Tuesday, February 15, 2000 - 11:54 pm:

I am try to add items to a List on my form. Has anyone messed around with this? LstSetListChoices doesn't seem to be giving me the expected results, and it seems to be pulling 7 items off the stack instead of the expected 6. Here is some sample code recreating the problem.

Within ResourceEdit Create a new database:

Name: TestList

Creator: Test

Type: rsrc

Resource DB: checked

Open it, then add a new Form (ID should be 1000)

top 0, width 160, left 0, height 160

Modal: checked, Usable: checked

Then, to the Form add a new List

top 20, width 80, left 20, height 80

Font: standard, Usable: checked

ID 4000

Then, enter the following code into a memo file and run it:

```
\ TestList
needs forms
needs resources
needs ids
needs zstrings

(id) Test (id) rsrc use-resources
1000 constant MainForm
4000 constant ListID

variable x

: go
l x !
MainForm ShowForm
x @ z" 1st Item" drop >abs
```

```

SysFormPointerArrayToStrings ( stringCount &c. -- VoidHand. )
MemHandleLock 2dup
x >abs 2swap ListID GetObjectPtr
.s about
LstSetListChoices ( &numItems. &itemsText. &list. -- )
.s about
begin ekey drop again ;

```

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 16, 2000 - 12:02 am:

Aha, a bug. The description is wrong in the manual. I'll fix it. It should be:

```

LstSetListChoices ( numItems &ItemsText. &list. -- )

```

It's also cleaning up too many items from the stack (7 cells, it should be 5 cells). Here's a fix that should work (please test it), and I'll repair it in the kernel in the next update:

```

: LstSetListChoices ( numItems &ItemsText. &list. -- )
  >r >r >r >r >r 0 0 r> r> r> r> r>
  LstSetListChoices ;

```

Neal

By [Wade Carlson](#) on Wednesday, February 16, 2000 - 12:25 am:

It gives me the expected stack results, but still doesn't work (i.e. it doesn't add the item to the list).

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 16, 2000 - 12:42 am:

I believe you have to call LstDrawList to re-draw the list after changing its contents.

Neal

By [Wade Carlson](#) on Wednesday, February 16, 2000 - 12:58 am:

Actually, I tried that, and it just Resets my device. Anyways, I am not so sure that is what is needed to be done anyways from reading the Palm OS docs. It sounds like LstDrawList just makes the List Object visible (if it's not set to visible already)

Anyways, here is my current updated code with your suggestions:

```

\ TestList
needs forms
needs resources
needs ids
needs zstrings

```

```
(id) Test (id) rsrc use-resources
1000 constant MainForm
4000 constant ListID

variable x

: LstSetListChoices ( numItems &itemsText. &list. -- )
>r >r >r >r >r 0 0 r> r> r> r> r>
LstSetListChoices ;

: go
l x !
MainForm ShowForm
x @ z" 1st Item" drop >abs
SysFormPointerArrayToStrings ( stringCount &c. -- VoidHand. )
MemHandleLock 2dup
x @ 2swap ListID GetObjectPtr
.s about
LstSetListChoices ( numItems &itemsText. &list. -- )
.s about
ListID GetObjectPtr
LstDrawList
begin ekey drop again ;
```

By [Wade Carlson](#) on Wednesday, February 16, 2000 - 01:02 am:

**Ahh! Nevermind, I found my mistake!!!
the line
x @ 2swap ListID GetObjectPtr should now be
x @ rot rot ListID GetObjectPrt**

Thanks for the help, It works!!!

By [Wade Carlson](#) on Wednesday, February 16, 2000 - 01:03 am:

Oops, another mistake, (GetObjectPtr, not Prt)

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 16, 2000 - 01:05 am:

Terrific! Glad it's working.

Neal

By [Jim Hendricks \(Jimh\)](#) on Wednesday, February 16, 2000 - 09:55 am:

Previously on this forum was the following help which allowed me to use LstSetListChoices, use this stack diagram for LstSetListChoices:

```
LstSetListChoices( 0 0 numItems &ItemsTextArray. &list. -- )
```

I guess based on Neal's description that it is cleaning too many items off the stack, the 0 0 can be anything.

By [Trevor Steele](#) on Wednesday, February 16, 2000 - 11:34 am:

Yes Jim I remember giving you that stack diagram. However Neal's correction is rather more elegant as it allows the proper arguments to be put on the stack which will allow easier conversion when the problem is corrected.

Best regards

Trevor

By [Jim Hendricks \(Jimh\)](#) on Wednesday, February 16, 2000 - 11:55 am:

Thanks Trevor, you didn't give the solution to me but to someone else. I happened to have the problem a few weeks later and found the thread through a keyword search (there we go again, keyword search is your friend!). Still though, thanks for the solution.

I see your point about conversion though and where Neal's solution leaves us open for the correction. For ultimate conversion flexibility, this overlaid word should be put into one of the libs so that later when the newer version comes out you only have to make the change in 1 place, and not in every application you may make this call. (Assuming you have many irons in the fire like I usually do!)

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Displaying bitmaps from an external resource/database

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
Displaying bitmaps from an external resource/database

By **Jim Meadows** on Tuesday, February 15, 2000 - 11:37 pm:

I need to have several sets of bitmaps but do not want them internal to my application. Two questions:

- 1) Can I reference an external resource containing the bitmaps or should they be in a custom database (or does it matter)?
- 2) How do I "get" to an external resource? I am currently using the following to display bitmaps from the application's own resources ...

```
: showbmp ( # y x -- )
2>r
[ID] Tbmp DmGetResource
2dup MemHandleLock
2r> 2Swap WinDrawBitmap
MemHandleUnlock throw
;
```

- Jim

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 15, 2000 - 11:43 pm:

You can use resources from any external resource database -- you just have to make sure your application opens that database (with **OpenResDB** from *resources*) before it tries to use them.

Neal

By **Jim Meadows** on Wednesday, February 16, 2000 - 12:26 am:

I took a closer look at resources & now understand how to access different resources during runtime using OpenResDB.

Thanks - Jim

By **Jim Meadows** on Tuesday, February 22, 2000 - 03:41 pm:

Neal,

I understand there is a size limitation to Quartus applications, so here are two questions:

1. Is the limitation affected by resources you copy into your application (e.g. bit maps)?

2. Is the limitation affected by variable size, especially if you use large arrays?

If either of these limit the program size, I plan to:

1. Use a separate resource to hold my bit map images and open & close it during execution
2. Write to databases rather than use arrays to accumulate data

Suggestions?

- Jim

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 22, 2000 - 03:52 pm:

Resources added to your application do not in any way affect the size of your application. If you use inline bitmaps, though, using the *bitmap* library, those are allocated in the 32K dataspace region. If you have a lot of large bitmaps, make them resources instead, and you'll be fine.

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 22, 2000 - 05:45 pm:

That was poorly worded on my part. Resources added to your application do not take away from the available codespace. Of course they make the resulting PRC larger.

Neal

By [Jim Meadows](#) on Tuesday, February 22, 2000 - 11:39 pm:

Thanks for the info. I assume that arrays do take up part of the 32K dataspace & I would be better accumulating information into a database rather than a large array variable.

Jim

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 22, 2000 - 11:43 pm:

If it's information you're only reading, yes. Keep it in a resource.

Neal

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 23, 2000 - 01:48 pm:

Further to that -- you can of course use resources for writing also (via **DmWrite**); they're just not as speedy for writes as an array stored in dynamic memory.

Neal

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Memory footprint of a Quartus standalone application..

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
Memory footprint of a Quartus standalone application..

By [Rick Flower](#) on Monday, February 14, 2000 - 04:42 pm:

Hi everyone.. I finally splurged and registered my Quartus eval copy.. (-> Anyway, I was playing around with the HelloWorld tutorial in the file area by Steve Donahue and am able to create a standalone version of the "Hello-B" application. So, I was curious about the resources the application that was created by Quartus was made of.. I fired up RsrcEdit on my Palm III and started checking out "Hello".. Here is what I found :

Resource Name ----->	Size
code 0 ----->	8
data 0 ----->	44
p4ap 1 ----->	716
DATA 1 ----->	570
tver 1 ----->	2
code 1 ----->	374
pref 1 ----->	10
tFRM 1000 ----->	124
tAIB 1000 ----->	144
tFRM 1001 ----->	136
tAIB 1001 ----->	34
tFRM 1002 ----->	134
MBAR 2000 ----->	92
Talt 3000 ----->	84
tSTR 3001 ----->	77

Now, I can understand most of what I see. The thing that I don't understand is where the other resources get used (tFRM 1000 consisting of Field1103, and GraffitiState along with tAIB 1001 which isn't used by the tutorial code, and tFRM 1002 consisting of a Title and Field1103, again not used by the tutorial code).. Are these truly used by Quartus behind the scenes? I know that I'm talking about a whopping 292 bytes, but I'm more curious than anything at this point in time..

Any comments are appreciated!

-- Rick

By [Neal Bridges \(Nbridges\)](#) on Monday, February 14, 2000 - 04:49 pm:

Those tFRM resources are there by default in all generated apps. You can safely kill off any parts of that 292 bytes that you're not using with **delrsrc**.

tAIB 1001 is the small icon for the App Launcher.

Neal

By [Rick Flower](#) on Monday, February 14, 2000 - 07:42 pm:

Neal,

Thanks for the info! I kind of thought that might be the case.. Thanks for the prompt reply!

-- Rick

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Getting return strokes from fields

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Getting return strokes from fields

By [Trevor Steele](#) on Monday, February 14, 2000 - 07:57 am:

Hi

Does anyone know of a simple way of determining when a graffiti return stroke is entered whilst inputting text into a field. I would like to be able to detect this and then process the text in the field at that point with `field>string`.

Thanks in anticipation

Trevor

By [Matthew Blair \(Blair\)](#) on Monday, February 14, 2000 - 08:37 am:

Hi Trevor,

I think that you want to do something like the following:

```
10 constant ReturnChar
: catch-return ( -- )
begin
  ekey
  penUpEvent = if
    ekey>char ReturnChar = if
      ProcessFieldTextOrSomethingElse
    then
  then
again ;
```

Matthew

By [Neal Bridges \(Nbridges\)](#) on Monday, February 14, 2000 - 09:41 am:

Match on `keyDownEvent` rather than `penUpEvent`, and you're almost there with Matthew's example, plus-or-minus a bit of stack juggling. This (pseduo-code) should give you an idea:

```
: go
begin
  ekey
```

```
dup keyDownEvent = if
  ekey>char if
    ReturnChar = if drop EndOfLine exit then
    else HandleNonReturnChar
    then
  else
    HandleNonCharEvent
  then
again ;
```

An alternative -- use ACCEPT, it does just what you want.

Neal

By [Trevor Steele](#) on Monday, February 14, 2000 - 12:41 pm:

Many thanks Neal and Matthew I'll give the above a try.

Trevor

By [Trevor Steele](#) on Monday, February 14, 2000 - 01:11 pm:

Hmmmm

The code has a similar problem to my own attempts. It works fine until the user taps the field to input text, then the code stops responding, no matter what is input in the Graffiti area. Any suggestions something silly I'm overlooking?

Best regards

Trevor

By [Neal Bridges \(Nbridges\)](#) on Monday, February 14, 2000 - 01:30 pm:

It's hard to know in the absence of the code. Can you post or mail something small?

Neal

By [Matthew Blair \(Blair\)](#) on Monday, February 14, 2000 - 01:37 pm:

Trevor,

I know this is a really basic suggestion, but have you made sure that you drop the char in the HandleNonReturnChar portion of Neal's code snippet? I.e. ekey>char returns both a flag and a char.

Matthew

By [Trevor Steele](#) on Monday, February 14, 2000 - 02:52 pm:

Here is a snippet of code I've been using for testing the pickup of a return character from a field:

```

10 constant ReturnChar
1001 constant MainForm
6001 constant MainField
Create fldChars 6 allot

: go
  MainForm showform
  begin
    ekey dup keyDownEvent = if
      ekey>char if
        ReturnChar = if
          fldChars MainField field>string
          fldChars swap 0 0 at type
        then
      else drop
    then
  else drop
  then
again ;

```

**MainForm contains a field of 5 chars max set
 Editable
 Usable
 Underline
 Single Line**

I look forward to any suggestions :)

Best regards

Trevor

By [Matthew Blair \(Blair\)](#) on Monday, February 14, 2000 - 03:23 pm:

Hi Trevor,

I think the problem is that once the Field has the focus, the `keyDownEvents` are being caught by the Field Manager, and are only passed along if the pen stroke is a non-character (like the lower-diagonal to upper-diagonal command stroke). To see this, change the line after `begin to`

```
ekey dup . dup keyDownEvent = if
```

and run your program. I think that you'll see the following sequence of events:

nilEvent, nilEvent, ..., penDownEvent, fldEnterEvent, penUpEvent, nilEvent, nilEvent, ...

and you will keep getting nilEvents until you exit the Field.

I'm not sure how you can fix this...

Matthew

By [Neal Bridges \(Nbridges\)](#) on Monday, February 14, 2000 - 04:30 pm:

Ah quite so Matthew. The character events are in fact being eaten by the Field handler internally. My mistake, Trevor. You need to test the events before the Field routines in the ROM have a chance to steal them away. Try:

```
: go
  MainForm showform
begin
  500. event >abs EvtGetEvent
  event @ dup keyDownEvent = if
    ekey>char if
      ReturnChar = if
        fldChars MainField field>string
        fldChars swap 0 0 at type
      then
    else drop
  then
  else drop
  then
  HandleEvent
again ;
```

Neal

By [Trevor Steele](#) on Monday, February 14, 2000 - 05:08 pm:

Thanks Neal and Matthew

That has sorted things and saved me many hours of grief no doubt :)

Trevor

By [Matthew Blair \(Blair\)](#) on Tuesday, February 15, 2000 - 08:53 am:

Neal,

Doesn't Trevor also need to pass the event onto the Field after handling, via **FieldHandleEvent**? Just checking...

Matthew

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 15, 2000 - 08:55 am:

HandleEvent takes care of passing the event by all the required system routines.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 15, 2000 - 09:06 am:

Ahh, my mistake. But is **HandleEvent** a QF-specific word? I couldn't find it in the manual...

Matthew

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 15, 2000 - 09:16 am:

It's a specific word, yes -- and what do you know, it's not in the manual. Hmm. I'll fix that.

HandleEvent (--)

Passes the event stored at **event** by all the required system event handlers.

Neal

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Pedit and pedit32 for Quartus on the palm

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Pedit and pedit32 for Quartus on the palm

By **[Paul Nevai](#)** on Thursday, February 10, 2000 - 10:48 am:

Hi Guys:

Will you kill me if I plug my pedit and pedit32?

I'll be very short. Please visit

<http://www.math.ohio-state.edu/~nevai/palm/>,

and you life on the palm will never be the same.

Best regards, Paul

By **[Neal Bridges \(Nbridges\)](#)** on Thursday, February 10, 2000 - 10:50 am:

Ok, Paul, but try not to plug it in every topic in the forum. :)

Neal

By **[Barry Ekstrand](#)** on Friday, February 18, 2000 - 01:50 pm:

I thought it would be worth posting that Paul's latest version of pedit has the capability of launching Quartus directly from the editor. Just tap the ">>" button, choose Quartus and you are there.

Barry Ekstrand

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Getting Started

Quartus Handheld Software: Discussion Forum: Quartus Forth (PalmOS version): Getting Started

By [Tim Casey](#) on Thursday, February 10, 2000 - 10:15 am:

Hi. I've been using a Palm III for less than a year, yet I am captivated with its simplicity and its interface. I've been working with computers for 15 years, but my only programming experience was long ago with a program called LOGO for the Apple II and some beginning BASIC.

You can consider me a non-programmer. I would like to develop a checkbook application for the palm and I am impressed with Forth's ability to program directly on the palm itself. I have downloaded several checkbook programs but they are not to my liking. I don't think it would be terribly complex, but I would appreciate some guidance.

I saw the recommended books on Quartus' web site, but wonder which of them (or others) would be useful to -quicky- get me up to speed.

By [Joel Ricker](#) on Thursday, February 10, 2000 - 10:35 am:

Same here. I'm just getting started with Forth. I've worked my way through some of the tutorials that I found through links on the Quartus site but they tend to peter out after you learn some of the basics. Are there any more Intermediate to Advanced tutorials on Forth on the web anywhere?

Joel

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 10, 2000 - 01:21 pm:

I'm working on Forth educational materials. In the meantime, after completing the basics, I'd suggest you look at some of the sample applications -- Year, Duco, Swatch, PhoneDecode, etc. There are two tasks at hand -- learning Forth, and also learning about the Palm OS. The SDK docs available from 3Com are a handy reference.

Neal

By [Joel Ricker](#) on Thursday, February 10, 2000 - 09:37 pm:

I flipped through the ANS Standard but wished it was written in english :)

A couple of things I could use some help with. First of all the best tutorial out of the few I found was the one at http://www.softsynth.com/pforth/pf_tut.htm . It had this to say on Text Strings and Manipulation:

You can easily input a string using the word ACCEPT. (You may want to put these upcoming examples in a file since they are very handy.) The word ACCEPT receives characters from the keyboard and places them at any specified address. ACCEPT takes input characters until a maximum is reached or an end of line character is entered. ACCEPT returns the number of

characters entered. You can write a word for entering text. Enter:

```
<PRE>
: INPUT$ ( -- $addr )
PAD 1+ ( leave room for byte count )
127 ACCEPT ( recieve a maximum of 127 chars )
PAD C! ( set byte count )
PAD ( return address of string )
;
INPUT$ COUNT TYPE

</PRE>
```

Now I tried PAD but it doesn't work and still not sure how it works. The tutorial was a little weak at the end especially at this point dealing with Strings and such.

So my problem is how do I do strings and manipulation and especially when it comes to storing them in variables and using them. Also I'm intrested in learning how to do Arrays and using Floating Points.

I know this is alot for a discussion forum. If someone could point me to a good online resource that would be great (eventually I'll get a book on this stuff but it looks like I'm going to have to order one -- the bookstores around here are kind of lacking).

Thanks.
Joel

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 10, 2000 - 09:42 pm:

Let's tackle one thing at a time. PAD is a Standard word, easily implemented:

```
create pad 80 chars allot
```

It's really just a scratch-pad area, hence the name.

This discussion forum is a great place for this sort of thing -- keep asking questions! If you want to branch out, the UseNet group comp.lang.forth has a lot of clever people on it.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 10, 2000 - 11:38 pm:

Let me amend that --

```
create pad 128 chars allot
```

would be more suitable for the INPUT\$ example you posted earlier.

Neal

By [Gary Wiese](#) on Sunday, February 13, 2000 - 12:47 am:

I have a good newbie question. I've been studying Leo Brodies book Starting Forth and have a question on the word `.R`, it doesn't work when I try using it.

It is for right justifying a string on the screen. I seen there is a library item on this, but it doesn't mention anything about `.R` . Is there a word `.R` in this version of Quartus Forth?

By [Neal Bridges \(Nbridges\)](#) on Sunday, February 13, 2000 - 10:02 am:

Yes, `.R` is in *core-ext*.

needs core-ext

```
123 5 .r
```

Note that with proportional fonts, it doesn't line things up quite as you might expect.

Neal

By [Joel Ricker](#) on Sunday, February 13, 2000 - 10:12 pm:

Ok, could somone explain how to do floating points in 50 words or less?

Thanks

Joel

By [Neal Bridges \(Nbridges\)](#) on Sunday, February 13, 2000 - 10:20 pm:

Floats are entered like this:

```
[whole][.part]e[[-]exponent]
```

These go on a special float stack. Special operators manipulate these values and the float stack itself. Here's an example (`-(324*1.46)`):

needs float-ext

```
324e0 1.46e0 f* fdup f. -> 473.04
fnegate f. -> -473.04
```

Look at the ANS Standard FLOAT wordset docs for more information.

Neal

By [Alan J. Ying](#) on Saturday, February 26, 2000 - 11:48 pm:

I'm a Surgery resident at Duke Medical Center. I'm developing a Palm OS medical information

mgmt system accessing all patient data and syncing it to Palm OS devices. We have the data, we have ODBC compliant back end conduits in the hospital databases, we have a mockup of our Palm interface using Puma Satellite Forms getting the data from MS Access. We need help from someone who can streamline things in code that can't be done on Satellite Forms and Access. This is to be the tool that runs the medical center, but it's on shoestring resources until we demonstrate proof of concept. Then we'll likely hook up with one of two venture capital firms interested and bring it in as an outsourced app development contract. Please email ASAP, deadline is July 1.

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Network HotSync with the Palm OS Emulator

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Network HotSync with the Palm OS Emulator](#)

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 10, 2000 - 09:25 am:

I just got to the stage where I wanted to set up HotSyncing with the Palm OS Emulator, and it turned out to be surprisingly easy. If anyone is interested, I can post the required steps.

Neal

By [Dan Poirier](#) on Thursday, February 10, 2000 - 10:33 am:

Please do! I tried the instructions from the palmemu mailing list a week or two ago, but had no luck.

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 10, 2000 - 12:44 pm:

These instructions are for Win9x. They work for me.

Right-click the desktop HotSync icon (in the system tray). Select "Network".
A dialog appears: "...Please select a user from the Network tab within Setup." Ignore it. Click OK.

Start a new or existing POSE session.

Right-click on the emulator; select Settings->Properties. Switch on "Redirect NetLib calls to host TCP/IP".

From the application launcher in the emulator, start the HotSync app.

From the menu, select Modem Sync Preferences.

Choose "Network".

From the menu, select "Primary PC Setup". Enter the Primary PC Address as "127.0.0.1". Leave the other fields blank.

From the HotSync panel, select "Modem".

Tap on "Select Service".

From the menu, "New Service".

Title it something like "Network HotSync".

Tap "Done".

That's it. Now tap on the HotSync icon in the middle of the screen, and you should be off to the races. Select New when it asks you which Desktop account to use.

Neal

By [Dan Poirier](#) on Thursday, February 10, 2000 - 04:40 pm:

What Palm OS version are these instructions for?

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 10, 2000 - 04:49 pm:

I tried them with OS3.3, but I think they'll work for any version OS3 or later.

Neal

By [Erwin Schomburg](#) on Friday, February 11, 2000 - 06:02 am:

For international versions and versions prior to OS3.3 english you need to install the network hotsync add on from 3COM. Also you need to install said network hotsync facilities to the desktop or download/install the latest desktop from 3COM to get the Network Hotsync option selectable from the Hotsync icon in Taskbar. In the Hotsync application on (emulated) Palm you should set Modem Sync Preferences to Network.

Be aware that you can also set up POSE by drag/dropping the files from your backup directory to the open POSE window without fighting for making the Network Hotsync work.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Friday, February 11, 2000 - 08:44 am:

Right on both counts, Erwin. Thanks. I need the HotSync to make it easy to synch memos with the emulated device.

Neal

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Open Firmware and OS-less Forth

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Open Firmware and OS-less Forth](#)

By [Douglas Atique](#) on Wednesday, February 9, 2000 - 02:10 pm:

Neal,

I have looked at Open Firmware and its implementation on my iMac and found it amazing as a pre-boot hardware interface. Have you ever thought about making Quartus Forth into an Open Firmware-compliant Forth implementation to be installed on the Palm in place of Palm OS?

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 9, 2000 - 02:41 pm:

Think of Quartus Forth as a post-boot hardware interface, and you're there already. :)

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 10, 2000 - 12:02 am:

Consider also that Open Firmware is not an OS, but rather a pre-boot system for bringing up peripherals and launching the OS proper.

The other problem, and perhaps the most major, is that trying to write an OS for another company's hardware -- without their cooperation -- would be a struggle. Hardware specs are hard to pin down, specifications change, new devices appear, and so on.

From the standpoint of the language, I agree -- an optimizing native-code Forth would be a wonderful environment for developing an OS. And all the functions in the OS would then be available to drivers and apps.

Neal

By [Ron Hochsprung](#) on Friday, February 11, 2000 - 01:46 pm:

As the architect and prime implementor of Apple's Open Firmware, I'd like to comment on this thread.

As Neal states, the primary goal of Open Firmware is to provide a flexible interface for booting, including supplying I/O drivers that can be used by an OS to load its own drivers, etc., thereby solving the chicken-and-egg problem. And, IMHO, it does a very good job at that. In that sense, it is an "operating system".

However, it takes a LOT of work to do just that piece. What makes a Mac a Mac is the "middleware" above the basic OS, the services of which are

invoked by applications. Even if you had the equivalent of Open Firmware, to develop this middleware would be an incredible amount of work.

So, while Open Firmware is a wonderful tool for hacking (and, I should know;)) of hardware, it is a long way from being useful to an application writer.

What Neal has done is to provide access to the PalmOS middleware for Forth developers. This is really what I want, anyway. Having done a lot of work on 68K systems, I could "port" Open Firmware to a Palm fairly easily. But, then what? Who's going to provide all of that middleware that has to be there to do anything remotely interesting?

IMHO, Quartus Forth falls between a "scripting" language and a "programming" language, depending on how much non-trivial code is necessary for an application. I'm anxious to play games with the serial port, etc, but I still want the PDA/PMI functionality for which I bought the Palm in the first place. Neal's package gives me exactly what I want.

BTW Neal, I'm considering getting a Visor for its expandab

By [Neal Bridges \(Nbridges\)](#) on Friday, February 11, 2000 - 01:58 pm:

...you got cut off at 'expanab' -- I presume you're talking about the Springboard interface. Good news -- I'm adding the Visor system calls to Quartus Forth as built-ins.

Neal

By [Neal Bridges \(Nbridges\)](#) on Friday, February 11, 2000 - 03:12 pm:

By the way, it's great to hear from such a noteworthy Forther!

Neal

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New file: colornames.txt

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

New file: colornames.txt

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 05:41 pm:

I've posted *colornames.txt* in the Contrib file area. It's all the Netscape colors as names useable with the *color.txt* library file, on the new OS3.5 color ROMs.

Example:

```
needs color
needs colornames
```

```
crimson background
yellow foreground
```

Neal

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Conditional If

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Conditional If

By [Jim Hendricks \(Jimh\)](#) on Tuesday, February 8, 2000 - 04:59 pm:

Various other languages when evaluating an expression joined by and will not process the second half of the expression if the first half evaluates to false, and when joined by or, doesn't evaluate the second half if the first half evaluates to true.

In forth it seems common practice is to eval your 2 expressions then use and/or to concat the flags to 1 flag, then eval with if. This doesn't allow for the aforementioned behavior. Is there a way in Forth to get this behavior of skipping the second half of the eval?

TIA, Jim

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 05:16 pm:

Try this:

```
: & s" if else exit then" evaluate ; immediate
& will cause a definition to exit if a false condition is encountered.
```

Pseudo-code example:

```
: go condition1 & condition2 & condition3 & do-thing ;
```

Neal

By [Jim Hendricks \(Jimh\)](#) on Tuesday, February 8, 2000 - 06:25 pm:

OK, I don't have my Ansi guide handy at the moment (yes, I am without my Palm!) but I think I understand this, condition1 leaves a flag on the stack, & executes the code in the string which has the effect of issuing an exit if a false flag is on the stack. Exit is what I am not sure of considering how it is executed. If I am correct Exit exits the current definition but isn't the & the current definition? I assume that exit will actually exit the go word so I need to know how the execution through evaluate causes this behavior.

Nice example though, I should be able then to create the | (or) that would work with the opposite condition.

I have an idea though since there is no ANSI def for this kind of word. ALSOIF used within the true condition of an IF. ALSOIF would need the same forward ref to an ELSE or THEN as the IF. Since I don't know compiler design so I don't know if this would then require a modified ELSE and THEN for the proper reference resolution. (the reference resolution would need to accomodate potential multiple ALSOIF conditionals). Hopefully you get the idea. The only reason I toy with this idea is for the potential few cells/cpu cycles saved by handling this

directly through a single control statement instead of the multiple control statements that your example would create. I perceive also that your stated example would perform a little slower since the evaluate would cause the interpreter to run for each conditional.

Wait a minute, I missed the immediate, let me think now...

So, the immediate causes & to execute during the compilation of GO... We compile the string, then evaluate it... But wait, our conditional hasn't been evaluated yet so what is on the stack for the if else then to act on?... Oh wait a minute, since if else then is not compiled, the evaluate will cause the if else then to resolve it's references and embed themselves into go... but then is exit also only compiled as a reference?... I think I understand this approach now, I will have to mull over it further and see. I also see how my statements above don't apply except the possibility of consuming a few more cells this way over a custom control statement. Hmm, thanks Neal, you've given me a challenge to think about.

Jim

By [Jim Hendricks \(Jimh\)](#) on Tuesday, February 8, 2000 - 06:27 pm:

By the way, I hope you don't mind my posting my thought process on this one, hopefully my verbose thinking may help someone else to learn as I am learning.

Thanks, Jim

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 06:52 pm:

The whole thing is much simpler -- it's just a macro. Saves you typing. It's equivalent to this:

```
: &
  postpone if
  postpone else
  postpone exit
  postpone then
; immediate
```

It is just as though you typed

if else exit then

wherever the & appears.

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 07:51 pm:

And no -- don't mind at all. Ask any questions at any time!

Neal

By [Jim Hendricks \(Jimh\)](#) on Wednesday, February 9, 2000 - 10:06 am:

OK, I understand why the code works, since EVALUATE doesn't change the state (compile/execute) and go puts us into compile executing & during compile because it is immediate, the EVALUATE in & interprets the string in compile state therefore each of the words within the string execute their compiler state symantics (cause their all immediate). Am I right so far?

If I am correct, this macro will take 5 cells.

I have to go to a meeting right now, business calls, I will come back to this to state why I brought up this subject to begin with (aside from the learning).

Jim

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 9, 2000 - 10:28 am:

&, being an IMMEDIATE definition, is executed during compilation. So the string

S" if else exit then"

is EVALUATED at compile-time, just as though you typed it in yourself. A macro.

As for the 5 cells -- actually "if else exit then" presently compiles into 16 bytes of code. What do you mean by 5 cells?

Neal

By [Jim Hendricks \(Jimh\)](#) on Wednesday, February 9, 2000 - 01:26 pm:

Cells, as in 16bit values, I would have used 5 words but I didn't want to confuse that with "Forth Words".

Now here's why I started this thread to begin with. I am playing around with some code and stealing the event processing from Erwin's Quintominoes App (Sorry Erwin, I didn't ask but I don't plan on distributing this app anyway). I need to process HardKey presses and I wanted to use the EvtGetEvent followed by masking out my desired events and passing all others through handleevent. Erwin's approach is to set a flag if his word detects one of the hard keys of interest and then handleevent is skipped if the hardkek flag is set. I wanted to simplify this into the following pseudo code:

```
getEvent ( my own wrapper on EVTGetEvent ) ( -- evt# )
keyDownEvent = if
handlekey ( my own word to mask desired keys and handle, returns flag if handled )
invert if
handleevent
then
else
```

**handleevent
then**

Now what I really want is to eliminate the double use of handleevent, in that case I would code:

```
keydownevent = handlekey and if  
\ ability to do something else here...  
else  
handleevent  
then
```

But I want it so that handlekey is not called if the keydownevent = fails. This simplifies the code but can't be done with standard flag flag and if. Now for my specific purpose, I can use your & word since I only need to handle the false conditions and not when both are true. With my coding experience though I can see how the ability to handle the true true condition as well as the false or false condition could be useful and I don't think the & word fills the bill. I was also thinking that with the & word taking up 16 bytes having more than 2 conditions leads to more code consumption.

I assumed the if else exit then macro to consume 5 cells(10 bytes) based on my limited knowledge of how it would be in compiled form:

```
if 5 jmp 6 exit ...
```

where if is cell1, 5 is a forward ref to the else condition for handling the false condition, there is no code associated with the true condition so we go right into the compiled else code which is cell3 and 4 which skip over the false condition to ... which is the rest of the code (then), and then finally cell5 being the false condition of exit. Since you state this takes 16 bytes vice the 10 I speculated, I assume either my understanding of how if else then compiles, or there are extra bytes since Quartus is native code not ITC/DTC. But based on my speculation, could a control structure be created like follows:

```
IF ( compile branch & reserve space for false forward reference ) ie. no changes  
ALSOIF ( compiles indirect branch where following word contains the location of the branch  
address, the actual address put in this following word is the address of the IF's false forward  
reference taken from the return stack but not consumed )  
ELSE ... no changes  
THEN ... no changes
```

This would effectively give me multiple conditions only evaluating those conditions that continue to be true while also allowing for a shared else then branching. This I think would also only consume 2 cells per ALSOIF rather than the 10 cells I forecast with the &.

Questions are, "is this a doable solution?", "is it a word others would want?", "is this actually

more efficient in code use then your &? "

Once again, this is only for my learning, if it takes away from real production, it is not important.

Thanks, Jim

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 9, 2000 - 02:44 pm:

Most simply:

```
keydown = if
  handlekey if
    dosomething
  then
else
  dosomethingelse
then
```

The extra bytes are as you say, because Quartus Forth is a native-code compiler, and not a threaded implementation.

Neal

By [Jim Hendricks \(Jimh\)](#) on Wednesday, February 9, 2000 - 04:17 pm:

what I am looking for though is the ability to share the else so that I can collapse something like this:

```
keydown = if
handlekey if
dosomething
anothercondition if
anothersomething
else
dosomethingelse
then
else
dosomethingelse
then
else
dosomethingelse
then
```

I would want all the dosomethingelse to colapse into 1 else statement that could be shared by all the conditions, what I proposed above would allow collapse of all the else statements, as well as potentially save a few bytes from the nested if conditionals. So the question remains is my suggestion something others would want and is it doable? If it is doable, I would be willing

to tackle it, just don't know how succesful I would be since it probably requires some asm for the indirect branching, and it most definitely requires an understanding of the compiler and control loops which I am not so certian I have a full grasp of.

Thanks, Jim

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 9, 2000 - 05:02 pm:

Hmm, if I understand what you want (I went through and wrote out your conditional structure there and indented it myself) -- it seems to me you're going to great lengths to avoid calling the default action from more than one place. I think the answer is not to create a new control structure to express it -- it'll never be pretty. Here's a simpler approach:

```
: go
  test1 if
    test2 if first
      test3 if second else default then
    else default then
  else default then
;
```

Creating a new special construct just to avoid calling 'default' from three places will not save you any time or any significant code-space; calls are only four bytes each anyway.

Neal

By [Jim Hendricks \(Jimh\)](#) on Wednesday, February 9, 2000 - 09:07 pm:

yes, I am trying to avoid the duplication of calling default from three places. If I were working in say java, this would be simply

```
if ( test1 && test2 && test3 ) {
    dosomething() ;
} else {
    dosomethingelse() ;
}
```

This is because in java if test1 fails, test2 and 3 are not tested, if test2 fails, then test3 is not tested. This then allows for simple failure behavior if any one of your tests fail with only 1 branch, it also allows for simplifying calls to code that hinges on the success of a previous condition, ie each test can be a function call that does some kind of process and returns a boolean, function2 & 3 are then dependant on function1's success. I find this leads to cleaner code that is easier to follow, as well as leads to less lines of code to debug when the sh** hits the fan. Yes, this same code can be done through nested if's but then you need to duplicate the else condition for each condition. Not only does it lead to less readable code, it leads to

more code to read through during debug. I am also looking at what I think is more than just a few bytes worth of saving if you have more than 2 conditions to test, you are not only saving not having to call the default condition multiple times but also saving the overhead of each nested if else then, with my idea of an alsoif that would work within the framework of the existing if else then construct, instead of each nested if else then consuming 4 doublebytes plus the 2 bytes for the default call (10 bytes in all), the alsoif would only consume 2 doublebytes and no additional overhead for the default call since only the outer if else then contains the default call. This is a savings of 8 bytes per condition. Even more if your talking a native threaded ForthVM like quartus. If you are only talking 2 conditions, 8 bytes is no big deal but if we are talking 10 conditions, then 80 bytes is a little more to consider. I bring this up only in the real spirit of Forth programming (or at least what I have gleaned from reading the various histories of the language) that being if you can squeeze more space/performance, then do it. This being very opposite of the conventions of the day stating instead if you have the space & CPU cycles use them. This philosophy of squeeze till it won't squeeze no more and then squeeze some more makes Forth a perfect fit for a resource/CPU challenged device like the Palm. Well, I will get off my stump now and get back to hacking away, hopefully though I have left a few things out there along the way to keep people thinking about the best approach to some problems rather than the easiest.

Jim

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 9, 2000 - 09:18 pm:

Your Java:

```
if ( test1 && test2 && test3 ) {
    dosomething() ;
} else {
    dosomethingelse() ;
}
```

is a bit different (and simpler) than the code you posted earlier. If you just want the early && termination, there's straightforward way to do that in Forth -- and I think you'll like this syntax:

needs condthens

```
: go
  cond
    test1 if test2 if test3 if  dosomething exit
  thens
  dosomethingelse ;
```

Neal

By [Jim Hendricks \(Jimh\)](#) on Thursday, February 10, 2000 - 11:50 am:

OK, I will have to experiment with cond thens, not familure with the words but from what I can tell by their context, this allows multiple if's to terminate with the same then. You are

simulating the shared else just by exiting this word after processing the true condition.

I'm looking back at my forth example that I gave and I can see how my intent was not clear, I'm glad I posted the java code then to make it obvious what I am trying to attempt in forth. From what I can tell from your example that uses cond thens, most of the codespace advantages if not all that I perceived with my idea of an alsoif is addressed. There is no repeating of the default condition, and no repeating of the else portion of the if else then (no repeating of the then as well which is not a codespace issue, rather a readability issue), the codespace consumed by the repeating if's are the same as my proposed alsoif. My guess is the only extra codespace consumed by this example over my alsoif idea is whatever is consumed by cond thens which I am sure is so minimal as to not even consider. Thanks Neal, I will review this, learn by it, and most definitely use it! Now my challenge for myself (please, no hints until I ask) is to code the forth equivalent of this java code:

```
if( test1 || test2 || test3 ) {
    handleanytrue() ;
} else {
    handleallfalse() ;
}
```

Don't think that will be too hard now that I have the code to do the fallthrough &&.

I will post whatever I come up with if anyone else is interested.

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 10, 2000 - 11:54 am:

COND/THENS doesn't consume any codespace, it's just a helper to wrap up a bunch of THENS.

Without condthens, the code would look like this:

```
: go
  test1 if test2 if test3 if dosomething exit
  then then then
  dosomethingelse ;
```

Neal

By [Jim Hendricks \(Jimh\)](#) on Friday, February 11, 2000 - 09:44 am:

Had the chance to look at the source to COND/THENS from what I gather, COND just puts a zero on the stack at compile time.

THENS loops while top of stack is not zero compiling then for each item found on the stack (assuming items on the stack are addresses for if forward refs). This is also all done at compile time so I see how condthens allows for nested if's without having to close them all down. This also means that this approach provides the same memory savings my alsoif concept would have. Now, I haven't tested this on my palm yet (been busy with life, how dare life get in the

way of palm programming, how rude!) but here is my fallthrough ||

needs condthens

```
: not ( f -- !f )
  invert ;

: go
  cond test1 not if test2 not if test3 not if
    doallfalse exit
  thens
  doonetrue ;
```

I use not instead of invert because my programming background rebels against invert.

Just an efficiency thought, there would be an additional savings if I were to come up with a NOTIF word, and at least with my programming style that would be a well used word...

hmm...

well, time for more thinking...

Jim

By [Neal Bridges \(Nbridges\)](#) on Friday, February 11, 2000 - 11:56 am:

```
: not 0= ;
```

is a better definition for not -- it will convert any true flag (well-formed or not) to false, and any false flag to true.

Here's my || solution:

```
: go
  cond
    test1 if else test2 if else test3 if else dosomethingelse exit
  thens
  dosomething
;
```

Neal

By [Jim Hendricks \(Jimh\)](#) on Friday, February 11, 2000 - 01:17 pm:

Which || solution is smaller?

My solution consumes 2 bytes per condition for the not, your solution consumes 4 bytes per condition for the jmp offset generated by else. These bytes based on indirect threading.

I like your NOT, mine assumes a well-formed true flag. I will change my lib's NOT to use your 0=.

Thanks, Jim

By [Neal Bridges \(Nbridges\)](#) on Friday, February 11, 2000 - 03:14 pm:

I suspect my || solution runs a bit faster, and since the whole point of the exercise is to avoid unnecessary conditional tests in the name of speed, it might be the one to use.

Neal

By [Jim Hendricks \(Jimh\)](#) on Friday, February 11, 2000 - 04:41 pm:

Actually my point in the exercise was to bar execution of the extra conditions because the conditions require a success from the previous condition (ie. the 2nd and 3rd conditions would choke if the 1st condition failed), although this same conditional testing is a plus also to gain speed!

From a codespace perspective though, I am assuming based on my guesses as to how your native compiles work that both solutions would be the same codespace (ie. indirect thread consumes 2 bytes for my solution, native consumes 4 bytes, whereas I am assuming that the native byte consumption for else is 4 bytes (asmbranch & offset) so your solution compiled native consumes the same as my solution compiled native)

In summary, in QF, your method is faster while maintaining the same code footprint.

Jim

Add a Message

Accessing databases from Flash

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Accessing databases from Flash

By [Matthew Blair \(Blair\)](#) on Tuesday, February 8, 2000 - 12:19 pm:

Hi,

I put my source code (docs) in the Flash area and tried to compile the code from within QF. No dice - fatal exception (story of my life lately :^). I thought that being able to compile docs located in the Flash area might be a nice feature, so I downloaded the FlashPro SDK to see how to do this. It appears to be easy enough, but I just wanted to make sure this is the way to go. So, this is going to turn into a general question about accessing databases in Flash memory.

Basically, if I want to access databases in Flash memory, do I need to make calls via the Flash API, or is there another way?

If the Flash API is the way to go, I'll probably produce a library file that can be used by other interested members of this forum...

Thanks,
Matt

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 12:21 pm:

I haven't tried it, but I suspect accessing Flash databases means specifying a different card number.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 8, 2000 - 12:41 pm:

I just tried it. I have Quartus in Flash, so I did a `DmFindDatabase` with parameters: name: "Quartus\0"
cardnum: 0

Got back a nonzero Local ID. Did a `DmOpenDatabase` with the Local ID, and no errors. Hmm, this is interesting.

Think I'll poke around and see why Quartus (at least on my Palm) can't access databases in flash...

Matthew

By [Erwin Schomburg](#) on Tuesday, February 8, 2000 - 01:33 pm:

Databases packed away using FlashPro reside in card 0 for sure, can't say how JackFlash works. Matthew, your poking might turn up that you tried to open in read/write mode, but flashed databases are all marked read only (naturally) by FlashPro processing them.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 01:39 pm:

Right. I'm thinking of the Visor flash -- that's card 1.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 8, 2000 - 01:51 pm:

You guys are one step ahead of me (as usual). My poking has turned up what Erwin has already pointed out; I'll state what I did anyway just FYI.

Basically, I took my application, which reads/writes from a database, and tried to run it with the database in Flash and in "normal" memory. The program crashed when the database was in Flash and was fine otherwise.

My program crashed on startup, which means it either crashed on a read or crashed because it opened the db in read/write mode.

I guess this means that there would be some utility to porting the FlashPro SDK to QF.

Erwin, can databases in Flash be read without a problem? The question that sparked this thread arose from an attempt to compile doc files that were in flash. Hence, I used the *docinc* module, which appears to open the database in readonly mode...

Matthew

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 01:54 pm:

You'll never be able to open a database residing in flash in read/write mode. You'd need to modify your app to notice when it failed to open the app in read/write mode, and then open it in read-only mode and not attempt any writes. I don't think Flash SDK routines would help you there.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 8, 2000 - 02:00 pm:

Will it even work in read-only mode? I assume that the reason Quartus failed on a `docneeds FuelMain` is due to the *docinc* module accessing a database (FuelMain) in Flash. Perusing the *docinc* module shows that it opens the database in read-only mode, and surely it's not attempting any writes...

Matthew

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 02:03 pm:

It should work fine in read-only mode. What error are you getting?

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 8, 2000 - 02:09 pm:

Just a flat out fatal exception. I put the doc file *FuelMain* in Flash. This file includes all of the other files necessary to run my application from within the QF console. Typing `docneeds FuelMain` from the console generates a fatal exception, no descriptive messages.

Matthew

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 02:22 pm:

Ok. I'm not running FlashPro, or I'd try a few things. If you'd like to track it down, put some breakpoints into the *docinc* memo, see exactly what step in the process causes the failure.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 8, 2000 - 02:45 pm:

OK. Here it is. The problem appears to be in the *doc* module, in the **GetRecord** word:

```
\ Get a record from the current open
\ Doc file and decompress to a fixed
\ buffer.
: GetRecord ( index -- addr u )
  dup docDBR 2@ DmQueryRecord
  2dup MemHandleSize drop >r
  MemHandleLock
    2dup r> Decompress >r 2>r
  MemPtrUnlock throw
  false swap docDBR 2@
\ Fatal Exception upon DmReleaseRecord
  DmReleaseRecord throw 2r> r> ;
```

HTH

Matt

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 03:20 pm:

Try replacing the "DmReleaseRecord throw" with "2drop 2drop".

Neal

By [Erwin Schomburg](#) on Tuesday, February 8, 2000 - 03:24 pm:

There is no apparent fault in doc or docinc, I just put an entire project in a docfile into flash and it compiled without a blink. Precede your docinc statement with the sequence

1 echo drop

1 more drop

to let you kind of line step through your compilation to isolate the point of failure.

/Erwin

<Shameless Plug>

Another one out of the bottomless bag of my useful tricks

<\Shameless Plug>

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 03:32 pm:

Hehehe. Thanks Erwin. I'm still curious about what happens when he removes the DmReleaseRecord call.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 8, 2000 - 03:45 pm:

That did it. But why? And omitting the `DmReleaseRecord` seems to portend dreadful things...

Explanation please, maestro!

Matthew

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 03:50 pm:

DmQuery isn't supposed to require a matching DmReleaseRecord. I found I had some difficulties on the earliest Palms if I didn't do it, though. Not sure if those difficulties still exist; try that modified *doc* with Doc files in normal memory, see what happens. Particularly, load the same Doc file repeatedly -- more than 16 times, let me know if it works for you.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 8, 2000 - 03:55 pm:

I assume that you mean to load the same Doc file repeatedly within the same session. If so, then I've loaded it 20 times from normal memory using `docinclude` and no problems.

I wonder why Erwin experienced no problems?

Matthew

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 03:57 pm:

Hard to say. What version of Palm and OS are you running?

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 8, 2000 - 03:58 pm:

Since my application will be reading from and writing to a database, can I just detect if it is in flash by trying to open in read/write mode? I assume that I can **CATCH** that error.

Will I need to go through the Flash API to write to the database (i.e., copy from Flash to normal, modify, and put back?)

Matthew

By [Matthew Blair \(Blair\)](#) on Tuesday, February 8, 2000 - 03:59 pm:

I've got a Palm III with OS 3.3 loaded.

Matthew

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 04:03 pm:

You can **CATCH** an open failure, yes.

I strongly suggest you don't try to write an app that modifies flash databases in any way. Is there some reason to suspect your users will be keeping your application's database in flash memory?

Neal

By [Erwin Schomburg](#) on Tuesday, February 8, 2000 - 04:07 pm:

Can the debugging approach please come back to systematic, as in following logic? If Matthew's compile fails in dragging in the doc and docinc his system is FUBARed, no need to look further into the sources. If on the other hand something happens within the doc-ed source any error report will jump into the last processed memo, and its reasonable to assume that that was doc, called from docinc. Leave the library modules alone for now, to find the real point of failure please initiate the single line step mode and roll on using the scroll-down button.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 04:07 pm:

Also, databases in normal memory can also be set read-only; determining that a database is read-only does not necessarily mean it's in flash.

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 04:13 pm:

Erwin -- I agree, something must be different about Matt's system. He isn't failing when

loading *doc*, though, but rather it seems he's failing on the very first GetRecord call, which means he isn't ever getting to the point where source will be interpreted from his Doc file -- the crash is happening right on the first DmReleaseRecord.

I'm curious as to what might cause that to happen. Under normal circumstances, DmReleaseRecord shouldn't try writing to the database, but it seems that is what is happening here. This might be due to the specific version of FlashPro, a HackMaster hack, or another interaction in his system. I'd like to know a bit more about Matt's system configuration to try and get to the root of it.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 8, 2000 - 04:14 pm:

Erwin,

I tried the single line step mode you mentioned, and received a fatal exception before any output was produced. The failure is not in dragging in doc and docinc (I have needs docinc in my startup.quartus memo, and I can get to the initial prompt every time).

Matthew

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 04:22 pm:

My only other thought about it right now is that maybe the records in the Doc file are flagged as 'dirty' before it's copied into flash, and so the DmReleaseRecord is trying to clear that flag, and failing.

Can you try a 'clean' Doc file in flash, Matt, and see what comes of it?

Neal

By [Erwin Schomburg](#) on Tuesday, February 8, 2000 - 04:33 pm:

Very unlikely, I tried my testproject compressed, uncompressed, in edit mode, closed for edit, always going straight from open file to FlashPro via SwitchHack stroke to move the file, always got a successful compile. There must either be a rogue Hack or a corrupted chunk confusing Datamanager. However, I leave you to it for now, its 10:30pm here and I have a 4:30am start tomorrow. Sorry, just started to get interesting here 8-)

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 04:38 pm:

If there's any truth to my guess, it may depend on the editor used to create the Doc file.

Neal

By [Matthew Blair \(Blair\)](#) on Wednesday, February 9, 2000 - 08:32 am:

Looks like I have a few things to answer for... Let's see if I can address all the points.

My system: Palm III with OS 3.3, Hackmaster 0.9, {SwitchHack, SelectHack, FindIgnoreHack} active, ShiftHack inactive (sorry Neal!), SmartDoc 2.01, FlashPro 1.06, Datebk3, HanDBase, HandyShop, RsrcEdit 1.007. I think that's all.

Q: Do I expect that my target users will keep databases in Flash?

A: I guess I was thinking about HanDBase, and how I was able to modify databases that were in Flash memory. Seemed like a neat feature, but upon thinking about it some more, I'm not sure it's all that important. Yet. I should just focus on getting all the functionality in!

I'm not sure what a 'clean' DOC file is...

BTW, Neal, if this excursion is taking time away from other things, feel free to drop it. I was really just pursuing this as a way to learn more about how databases in Flash work. If, however, you are driven by the same relentless curiosity that caused this thread, then by all means, let's figure it out!

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 9, 2000 - 08:44 am:

A clean Doc file would be one from a download site written by somebody else, that you haven't opened with a Doc editor.

You might also try it with your hacks disabled, just to be sure there's no conflict.

There aren't too many avenues to explore here, but I am curious about it. It's not eating up too many cycles. :)

Neal

By Erwin Schomburg on Wednesday, February 9, 2000 - 04:25 pm:

Just back from my trip and nosy as hell too, especially since it works so flawlessly with a real project (my Quntominoes) put to flash.

/Erwin

BTW: I'll have another 20h power trip tomorrow, but I try to follow this.

By Douglas Atique on Thursday, February 17, 2000 - 08:04 pm:

Matt,

Just passing around this thread, it occurred to me that little warning of FlashPro: uninstall all your HackMaster hacks before moving databases between Flash and RAM.

I don't know exactly why that is so, but I have sticked with it and wouldn't know how to recover from a damage in the contents of my ROM...

**Regards,
Douglas**

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Tester module changes base to hex

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Tester module changes base to hex

By [Dan Poirier](#) on Sunday, February 6, 2000 - 08:14 pm:

I was pulling my hair out for a few hours this evening as I tried to use the tester module for the first time, and it kept claiming that things I *knew* worked were giving the wrong results.

Finally I discovered that loading the tester module changes the base to hexadecimal, so all of the numeric input and results in my tests were being interpreted, unbeknownst to me, as hexadecimal.

Loading a module shouldn't change your base, should it?

By [Neal Bridges \(Nbridges\)](#) on Sunday, February 6, 2000 - 08:19 pm:

Sorry about that. You're right, modules should be more polite than that. My only excuse here is that I didn't write *tester.txt* myself. I'll amend it in the update.

Neal

By [Dan Poirier](#) on Monday, February 7, 2000 - 08:07 am:

Thanks. For now I just added 'decimal' after 'needs tester' in my own code.

By [Erwin Schomburg](#) on Monday, February 7, 2000 - 09:05 am:

Not to be anal about it, but a clean way would be

```
BASE @
needs tester
BASE !
```

Or even better would be, if all library files were enclosing their code in

```
BASE @
BASE !
and use BASE alteration as needed in between if they need to rely on a specific BASE value,
alternatively one could postulate a rule that all library modules expect BASE to be decimal on
entry *and* exit. I think all Neal-originated modules follow the second model.
```

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 09:19 am:

Yes, that's my approach -- expecting the base to be decimal and leaving it that way on exit. *tester.txt* is an exception.

Neal

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FieldSetText - help please

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

FieldSetText - help please

By [Mark Lawson](#) on Sunday, February 6, 2000 - 06:41 pm:

Hi, I'm trying to get edit-in-place to work and it works fine if I use the whole record with "getrec". Now I want to only use part of the record; from 10 bytes on and I'm completely stuck as to why "getpartrec" doesn't work. I don't know what it is but it needs a hard reset to recover from :-)

Any help would be appreciated.

Mark

```
\ db handle
2variable _hdb
: hdb _hdb 2@ ;

\ field pointer
2variable _fldPtr
: fldPtr _fldPtr 2@ ;

\ record
variable index 0 index !

\ open db
: opendb dmModeReadWrite wiki DATA DmOpenDatabaseByTypeCreator
2dup or 0= throw _hdb 2! ;

\ get field pointer from id
: fldhandle fldInput FrmGetActiveForm 2dup 2>r
FrmGetObjectIndex
2r> FrmGetObjectPtr
2dup or 0= throw _fldPtr 2! ;

: getrec index @ hdb DmGetRecord
fldPtr FldSetTextHandle
fldPtr FldDrawField ;

\ get the size of the record
: getsze index @ hdb DmQueryRecord
2dup 2>r MemHandleLock StrLen
2r> MemHandleFree drop ;

\ offset my record by 10 bytes
: getpartrec fldhandle getsze 10 index @ hdb DmGetRecord fldPtr FldSetText
fldPtr FldDrawField ;
```

By [Neal Bridges \(Nbridges\)](#) on Sunday, February 6, 2000 - 09:22 pm:

I find your code a bit hard to follow because it lacks stack diagrams for each word. However, I'm guessing the problem is right at the FldSetText call. Here's what the SDK docs say:

FldSetText

Purpose

Set the text value of the field, update the word-wrapping information, and place the insertion pointer after the last visible character.

Prototype

***FldSetText (FieldPtr fld,
Handle textHandle,
int offset,
int size)***

Parameters

fld - Pointer to a field object (FieldType data structure).

textHandle - Handle of a block containing a null-terminated text string.

offset - Offset from start of block to start of the text string.

size - Desired size of text string, not the string length.

Return Value - None.

Remarks - The pointer passed is stored in the field's structure; in other words, this function doesn't copy the string passed. If a size of zero is passed, the size is computed as the block size, minus the offset passed. If more text is set than there is room for in memory, an error occurs.

Note the "not the string length" comment for the size parameter, and also the warning that "if more text is set than there is room for in memory, an error occurs". Hope that helps -- if all else fails, mail me your code and I'll see what I can do.

Neal

By [Mark Lawson](#) on Tuesday, February 8, 2000 - 06:31 am:

Just what I thought so if (all things being equal)

```

: getgoodrec ( -- ) index @ hdb DmGetRecord
fldInput GetObjectPtr FldSetTextHandle
fldInput GetObjectPtr FldDrawField ;

```

works fine then the following should show the same record; only starting 10 bytes in - but doesn't

```
: getbadrec ( --bang!! ) 0 10 index @ hdb DmGetRecord  
fldInput GetObjectPtr FldSetText  
fldInput GetObjectPtr FldDrawField ;
```

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 08:38 am:

They're not equal though -- FldSetTextHandle and FldSetText take different arguments.

Neal

By [Mark Lawson](#) on Tuesday, February 8, 2000 - 09:50 am:

Can you please read what I've written before replying with trite one-liners :-

```
/ Use FldSetTextHandle ( textHandle. &fld. -- )  
: getgoodrec ( -- ) index @ hdb DmGetRecord  
fldInput GetObjectPtr FldSetTextHandle  
fldInput GetObjectPtr FldDrawField ;
```

That works ... so the index, database handle and field pointer are working as expected. Now add two args 0 and 10 and try it with FldSetText; 0 should set the size param to the block size - minus the offset param 10.

```
/ Use FldSetText ( size offset textHandle. &fld. -- )  
: getbadrec ( --bang!! ) 0 10 index @ hdb DmGetRecord  
fldInput GetObjectPtr FldSetText  
fldInput GetObjectPtr FldDrawField ;
```

This doesn't work - why?

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 10:33 am:

There was nothing trite about my one-liner, Mark. Your assertion that if one system call works, then therefore so should another is only reasonable if the two calls use identical mechanisms for achieving their goals. In this case, they don't.

In the absence of your actual code and resources, it's difficult for me to recreate your problem here. This is why I suggested you mail or post your code, or at least a subset thereof that reproduces the problem. At that point it should be easy to find the trouble.

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 11:49 am:

I cobbled together an example of my own. Can't make it crash, but I have discovered some unusual things so far. As a length, 0 doesn't work; neither does the size of the record. What does work is, say, 5, so long as the position+5 doesn't exceed the size of the record.

It looks like -- too early to say for certain from my testing, but it looks like -- the size paramter is meant to be the size of a particular 'sub-record' in the record, and that the string at that position of the record must be zero-terminated.

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 12:27 pm:

Ok, I can confirm that. I haven't been able to make 0 work as a size parameter at all. However, if you specify an offset, say, 10, and at that offset in your records you keep a zero-delimited string of a maximum length of 20, you'd do

```
21 10 recordhandle fieldptr FldSetText
```

Note the 21 -- one extra is needed for the zero-byte delimiter.

I've tried this and it works -- allows for in-place editing of a sub-record of a record. If your data doesn't have zero-delimited sub-records, I suggest you copy out the relevant part of the record, place it in a field, allow it to be edited and then write it back into the record at the right offset.

Hope that helps.

Neal

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Docs on serial port support?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Docs on serial port support?

By [John Oliver](#) on Sunday, February 6, 2000 - 11:11 am:

A colleague wants to use a Visor as part of a custom system with use of both the Springboard slot and the serial connector. He is interested in Quartus Forth for this app. After looking around on these pages, we can find a serial library (serial.txt) but no documentation. Can some suggest what we should download to try out serial port manipulation with the Visor?

And what about the Springboard slot support?

By [Neal Bridges \(Nbridges\)](#) on Sunday, February 6, 2000 - 11:34 am:

There are some simple send/receive serial examples in the Forum archives, and I'll be adding Visor OS calls (springboard support, etc.) to the kernel in the next update! If you wish to use the Visor calls in the meantime, you'd have to address each one by its number, using **systrap**. Wait a few days, though, and you'll have them as built-ins.

Neal

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Missing events with OS 3.3

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Missing events with OS 3.3

By [Michael Rowe](#) on Sunday, February 6, 2000 - 05:41 am:

I have some code which works ok on OS 3.0 and 3.1, but not on 3.3. When I select an item from a list/popup/popup trigger via 3.0 or 3.1, I get the following sequence of events:

9 ctlSel
6 winExitEvent
5 winEnterEvent
14 popSel
2 penUp

However the same action on 3.3 results in the above sequence, but without events 9 and 14. I assume that I must make some changes for OS 3.3, but have no idea what they might be.

Is there a list somewhere which shows OS differences and program changes required?

By [nbridges](#) on Sunday, February 6, 2000 - 08:21 am:

I have updated Quartus Forth to compensate for this. I'll be releasing the update soon.

Neal

By [Matthew Blair \(Blair\)](#) on Wednesday, February 9, 2000 - 08:37 am:

Neal,

I think I may be experiencing the same problem. I've got a popup list of Categories (the next step!), and I'm having some problems with it. Could you post details on what specific problem QF had to compensate for? Also, will the update be another interim release, or are you planning on holding off until 2.0?

Thanks,

Matthew

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 9, 2000 - 09:01 am:

It'll be an interim release, end of this week. Sorry for the inconvenience. If you can't live until then, write me an email and I'll send you the latest.

Neal

By [Matthew Blair \(Blair\)](#) on Wednesday, February 9, 2000 - 09:22 am:

I think I can handle it until then. Maybe. :^)

I've got some clean up I want to do anyway before I continue. In particular, I want to implement **THROW** and **CATCH** where I would normally return an error code, I want to optimize my database structure (I've got about 7 bytes of extra fat on each record :^), and some other things. If I take care of all those things in my copious free time before the end of this week, I'll be knocking at your (virtual) door :)

However, it would still be interesting to know the nature of the problem that you had to compensate for.

Matthew

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 9, 2000 - 09:49 am:

OS3.3 differs a bit from OS3.0. It now reports certain events as 'handled' whereas before, it handled them but didn't report it.

EKEY is coded to return any event not handled by the system, and also various others that are of use to the developer but are flagged as handled by the OS. `ctlSelectEvent` and a few others now fall into the latter category, so EKEY has been changed.

Neal

By [Michael Rowe](#) on Friday, February 25, 2000 - 07:10 am:

I noticed that another Quartus app (NeXTrain) also exhibits a problem with selection from drop-down boxes with OS 3.3, so I sent Marc Furrer an email regarding the problem.

He indicated that Neal sent him a new compiler which had a fix for the problem, but which did not fully fix the problem, but which Marc could then fix on his own.

So, I thought that I would enquire as to current status regarding this issue.

regards, mrr

By [Neal Bridges \(Nbridges\)](#) on Friday, February 25, 2000 - 08:53 am:

The fix as it presently stands will go out with the next update. I'll write Marc -- or are you reading this Marc? What still needs fixing for you?

Neal

By [Michael Rowe](#) on Friday, February 25, 2000 - 10:06 am:

Do you know if this problem is also in OS 3.5? It is difficult to believe that such a change to the behavior of the event stream would not be regarded by Palm as a bug. I mentioned the problem to technical staff from 3Com at Palm Source in Munich in December, and was told that nothing significant in the OS was changed regarding the manner in which events are posted.

regards, mrr

By [Neal Bridges \(Nbridges\)](#) on Friday, February 25, 2000 - 10:19 am:

Well, sadly that's not the case. They did in fact change whether certain events were reported as handled, or not, by their respective handlers. They may not deem this "significant" -- in fact Bob Ebert didn't think the change to the sort-order tables was significant, either; yet both of these changes have impacted Quartus Forth slightly.

Neal

By [Neal Bridges \(Nbridges\)](#) on Friday, February 25, 2000 - 10:23 am:

... they didn't change the way events were "posted", per se -- just the way certain events are reported as handled.

Neal

By [Marc](#) on Monday, February 28, 2000 - 06:38 pm:

Hi Neal,

yes I am listening, although not as often as I would like.

Anyhow, I released a version of Next Train compiled with the released you had provided me. Users reported that it still did not work. I moved to use LstGetSelection (also LstSetSelection and LstGetSelectionText).

I guess one should rely on those calls instead of watching the events. However this was not clear from the documentation.

(my Quartus is 1.2.6R but this is an intermediate release I guess).

Oh, I still have no PalmOS3.3 thus I did not really do much more testing having find a workaround.

Marc.

By [Neal Bridges \(Nbridges\)](#) on Monday, February 28, 2000 - 07:46 pm:

Ah, I understand. Good. I'll check the list events against OS3.3 and see what's what. Thanks!

Neal

By [Michael Rowe](#) on Tuesday, February 29, 2000 - 09:07 am:

Hello Marc,

your updated version seems to work ok on my palm Vx / OS 3.3.

regards, mrr

By [Marc](#) on Friday, March 3, 2000 - 05:10 pm:

Neal,

my apologies I should have keep you updated on that. Sorry.

Marc.

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Question about the manual

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Question about the manual

By [Matthew Blair \(Blair\)](#) on Friday, February 4, 2000 - 12:14 pm:

Neal,

In the **Documentation for Words Specific to Quartus Forth** section of the manual, the `>byte` word is listed as having the following stack diagram (*char -- char<<8*).

Is that right? Seems that an `8 LSHIFT` on a `char` would produce the value zero.

Matt

By [Neal Bridges \(Nbridges\)](#) on Friday, February 4, 2000 - 12:31 pm:

In a 16-bit cell, an `8 LSHIFT` moves the `char` to the upper 8 bits.

Neal

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Quartus libraries / doc-format version?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Quartus libraries / doc-format version?

By [Barry Ekstrand](#) on Thursday, February 3, 2000 - 08:57 am:

I seem to recall some discussion about doc-format versions of the Quartus library files. I seem to continually bump the governor on memory, and am considering moving the library files on my machine to doc format to save a bit of memory. Two questions on this:

- 1) Is there any downside to this at all? I am guessing there is some loss of compilation speed due to compression - is this right and if so, how significant is it?
- 2) Is there a doc-format version of the full library already available somewhere? I didn't find one in the files section and I would like to avoid re-inventing the wheel if someone else has already done the job.

Barry

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 3, 2000 - 09:00 am:

I haven't converted each of the memos to DOC format -- you wouldn't want one big DOC, but a series of little ones. They will be slower to load, but not much.

Neal

By [Jim Hendricks \(Jimh\)](#) on Thursday, February 3, 2000 - 09:42 am:

As an additional thought, there was discussion elsewhere on this board about the code space consumed by the libs in the interpreter. Since Include/Needs compiles all the words in a lib, there will be words compiled that are not used and are consuming code space. This is only a concern on a large project. To remedy this situation right now, one must copy the used words into one's own lib so only the used words are compiled. The suggestion was for a tool that could scan for used words. My suggestion would be for a form of include/needs that could specify lib/word(s). While this approach requires more planning on the inclusion, it then puts the control in the hand of the developer what is being compiled. This then would also allow for improved load time when loading Qlibs from DOCs. Just a thought, anyone wish to add to the idea?

Jim

By [Jim N. Deakin \(Jndeakin\)](#) on Thursday, February 3, 2000 - 09:53 am:

My understanding was that only words used in an application were compiled into the stand-alone prc. Is that correct Neal? I wondered about callbacks, but of course they're referenced in setup words, so they'd also be included.

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 3, 2000 - 10:19 am:

Quite right, Jim D. Jim H. is suggesting an 'include' that will only pull in certain words, but that's quite tricky.

Neal

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Another question about databases

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Another question about databases

By [Matthew Blair \(Blair\)](#) on Thursday, February 3, 2000 - 08:43 am:

In the application I'm working on, whenever I open the database (e.g., to read a record for display), I close the database before user input can occur. I've done this under the assumption that this would somehow be safer than just leaving the database open until my application exits.

Is my assumption incorrect? If I can just leave it open until the application exits, I could probably save a few bytes for all those `OpenDB` calls I make. Is there a way to capture the application exit so that the db can be closed? What happens to an open DB when the Palm is reset?

Thanks,
Matt

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 3, 2000 - 09:01 am:

Have a look at the 'byeThrow' example in the manual -- you can trap application exit quite simply, and close the database at that time.

At Palm reset, all databases are closed.

Neal

By [Matthew Blair \(Blair\)](#) on Thursday, February 3, 2000 - 09:53 am:

Thanks Neal. I take it, then, that leaving the database open is OK. (Any idea what "accepted" practice is?)

Questions about the *byeThrow* example (reproduced below):

I assume that I would want to replace

```
[ ' ] key catch
```

with:

```
[ ' ] ekey catch
```

Also, (and this reflects my total confusion about throw and catch), this will be part of my application event loop. I assume what I have to do is make the modification above, and then branch based on the **caught** code. What happens when there are no **thrown** codes? I know I'm not phrasing this right, but I hope you understand what I'm asking... :^)

**Thanks,
Matt**

```
-257 constant byeThrow

: go ( -- )
MainForm
." Go ahead, start another app." cr
begin
['] key catch
byeThrow = if
." Exiting in 5 seconds!"
500. SysTaskDelay
(bye)
then drop
again ;
```

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 3, 2000 - 10:21 am:

It would be more like

```
: go
  MainForm
  ['] MyApplication catch
  dup byeThrow = if
    CloseMyDatabases
    (bye)
  then
  throw
;
```

MyApplication would be the entry point for your app, and **CloseMyDatabases** would take care of cleaning up.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 3, 2000 - 10:26 am:

As to your other question -- on application exit, a byeThrow is always **THROWn**. If there's nobody to **CATCH** it, it is ignored.

Neal

By [Matthew Blair \(Blair\)](#) on Thursday, February 3, 2000 - 10:39 am:

Thanks. I sort of understand, but **THROW** and her evil sister **CATCH** are still confusing. Do

you know where I could find out more about **THROW and **CATCH** -- what they do, how they do it, how to use it?**

Matt

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 3, 2000 - 11:43 am:

CATCH is just like an EXECUTE that returns an error code.

From the command line,

' words catch .

and

' words execute

do much the same thing -- but the CATCH line returns a value, usually 0. If at any time WORDS (or whatever function you call) does a non-zero THROW, CATCH will return that value instead.

Neal

By [Matthew Blair \(Blair\)](#) on Thursday, February 3, 2000 - 12:42 pm:

Ok! Your statement about CATCH usually returning 0 is what I wanted to know!

I now understand the code that you put out which closes databases on application exit. But, just so I can be sure that I understand it, would the following code be equivalent?

```
: go
MainForm
begin ['] ekey byeThrow = if
CloseMyDatabases (bye)
else MyEventHandler then
again ;
```

I guess this would be slightly inefficient since this version puts the *xt* on the stack at every iteration, but again...is this code equivalent?

Thanks,

Matt

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 3, 2000 - 02:34 pm:

No, your example doesn't have CATCH or THROW in it at all, so it will never catch a byeThrow.

Go back to my earlier example and build from that.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 3, 2000 - 04:53 pm:

Looking at your code, I think perhaps you just left out CATCH when you were typing it in. But still, with a CATCH after EKEY, your routine is checking for a byeThrow after each EKEY; this isn't necessary. This is cleaner and more efficient:

```
: mainloop
  begin ekey MyEventHandler again ;

: go
  ['] mainloop catch
  dup byeThrow = if CleanUp (bye) then
  throw
;
```

Neal

By [Matthew Blair \(Blair\)](#) on Thursday, February 3, 2000 - 07:27 pm:

That is what I meant (a little too hasty in my typing!) But I think I get the drift on **catch and **throw** now. Thanks!**

Matt

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 3, 2000 - 07:30 pm:

They're a useful mechanism for error reporting. THROW will send a message up through a chain of CATCH handlers; if there are no handlers, the throw code is handled by Quartus Forth itself, and reported as an exception, with a text message if available.

Neal

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Category help

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Category help](#)

By [Matthew Blair \(Blair\)](#) on Thursday, February 3, 2000 - 07:45 am:

I want to implement categories within my application, but all of my attempts to use the API calls end up in resets. I've looked in the OS reference but have not found any detailed explanation of Category support. For example, when a database is created, does it already have a default category? Or do I need to add categories to a database before reading categories? I don't know, I'm so confused.... :^) Any pointers appreciated.

Thanks,

Matthew

By [Dan Poirier](#) on Thursday, February 3, 2000 - 08:16 am:

All I've done so far is locate existing categories (in the memopad), but here's the code I use for that. It needs the newmemo library, and the memo database should be open.

```
:findCategory ( z-addr -- cat )
  >abs MemoDBR CategoryFind
;
```

e.g. (this bit not tested)

```
z" CategoryName" drop findCategory
dup 255 = if abort" category not found"
then
```

If the category exists, you'll get back a small integer that you can use as input to the other memo functions. Be sure to look at the newmemo code for examples of setting the category on records.

By [Matthew Blair \(Blair\)](#) on Sunday, February 6, 2000 - 08:41 pm:

Hello again,

After some research into the source code for the sample applications, I believe that I've discovered the cause of my problems: failure to initialize the categories via **CategoryInitialize** before attempting to access categories.

The **CategoryIntialize** command has the following stack diagram: (localizedAppInfoStrID &appInfoP.
--)

I have created a resource of type 'tAIS' which is, I believe, the AppInfoStr resource which contains the zero-delimited category names. By the way, for those who have not tried this before, the resource can be made by creating a generic resource in RsrcEdit. The size of the resource is the size in bytes of each of the category names plus 16 zero bytes. You must hex edit the resource to add the category names.

At any rate, when I call **CategoryInitialize** with the pointer to the application info ID (retrieved from a **DmDatabaseInfo** call), the program crashes with a "DataMgr.c...DmWriteCheck something or other.

I assume that the localizedAppInfoStrID parameter is the resource ID of the tAIS resource. Is that correct? Anybody have any ideas why I can't get this to work?

By the way, the code I'm using is essentially lifted from the MemoPad source code.

Thanks,

Matthew

By [Neal Bridges \(Nbridges\)](#) on Sunday, February 6, 2000 - 09:08 pm:

Can you provide a code snippet -- the DmDatabaseInfo call followed by the CategoryInitialize call?

Neal

By [Matthew Blair \(Blair\)](#) on Monday, February 7, 2000 - 07:44 am:

Sure thing. Thanks for taking a look at it.

P.S. Is there a way to post code so that it retains indentation?

```
2variable appInfoID
variable curCategory

: FuelDBInit ( -- )
\ CreateFuelDB ( -- err )
CreateFuelDB drop
\ FuelDB? ( -- localid. flag )
FuelDB? drop 2>r
\ Set up DmDatabaseInfo call
0. 0. 0. appInfoID
>abs 0. 0. 0. 0. 0. 0. 0. 2r>
cardnum @ DmDatabaseInfo drop
appInfoID 2@ or 0= if
\ Initialize appinfo block
2. OpenFuelDB FuelDBR
DmNewHandle
MemHandleToLocalID appInfoID 2!
0. 0. 0. appInfoID >abs 0. 0. 0. 0. 0.
0. 0. FuelDB? drop cardnum @
DmSetDatabaseInfo drop
then
cardnum @ appInfoID 2@
MemLocalIDToLockedPtr 2dup 2dup
2>r 2>r 2>r 0 2. 0. 2r> DmSet drop
LocalizedAppInfoStrID 2r>
CategoryInitialize 2r>
MemPtrUnlock CloseFuelDB drop ;
```

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 08:24 am:

Yes, click on "Topics" to the left, and read the bottom section on the use of `\pre{`.

Neal

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 08:40 am:

I'll wait for you to repost with indentation :) BUt at first glance, I see you're **dropping** all the error-code returns from the system calls that return errors. I suggest you **THROW** them instead, so you can see if each system call you're doing is successful or not.

Are you copying the sequence of system calls from existing code? Also, is it the **CategoryInitialize** that fails, and not, say, the **DmSet**?

Neal

By [Matthew Blair \(Blair\)](#) on Monday, February 7, 2000 - 08:48 am:

Okay, once again, with feeling :)

I've added in some of the extra words that were referenced before.

Now, in response to your other questions:

(1) Yes, I am copying the sequence of system calls from existing code. The code in question is from **MemoDB.c**, part of the source code for the MemoPad application (included with the SDK downloadable from the Palm site).

(2) It is certainly **CategoryInitialize** that fails, and not **DmSet**. At least, the program fails after the **CategoryInitialize** call.

Oh shoot. We're back to the **THROW** issue again. What effect would a **THROW** have if I did not **CATCH**?

Also, if you like, I can post the relevant 'C' code...

Thanks,

Matt

```
ID DATA ID MaTt
```

```
needs resources
```

```
(ID) p4ap (ID) Fuel use-resources
```

```
2variable _FuelDBR
```

```
: FuelDBR _FuelDBR 2@ ;
```

```
: FuelDB? ( -- localid. flag )
```

```
\ returns true if db exists
```

```
z" FuelTrackDB" drop
```

```
>abs cardnum @ DmFindDatabase
```

```
2dup or 0= 0= ;
```

```
: CreateFuelDB ( -- err )
```

```
false DATA MaTt
```

```
z" FuelTrackDB" drop >abs
```

```
cardnum @ DmCreateDatabase ;
```

```
: OpenFuelDB ( -- )
```

```
dmModeReadWrite
```

```
MaTt DATA
```

```
DmOpenDatabaseByTypeCreator
```

```
_FuelDBR 2! ;
```

```
: CloseFuelDB ( -- err )
```

```
FuelDBR DmCloseDatabase ;
```

```
: FuelDBInit ( -- )
```

```

CreateFuelDB drop
FuelDB? drop 2>r 0. 0. 0. appInfoID
>abs 0. 0. 0. 0. 0. 0. 2r>
cardnum @ DmDatabaseInfo drop
appInfoID 2@ or 0= if
    2. OpenFuelDB FuelDBR
    DmNewHandle
    MemHandleToLocalID appInfoID 2!
    0. 0. 0. appInfoID >abs 0. 0. 0. 0. 0.
    0. 0. FuelDB? drop cardnum @
    DmSetDatabaseInfo drop
    then
cardnum @ appInfoID 2@
MemLocalIDToLockedPtr 2dup 2dup
2>r 2>r 2>r 0 2. 0. 2r> DmSet drop
LocalizedAppInfoStrID 2r>
CategoryInitialize 2r>
MemPtrUnlock CloseFuelDB drop ;

```

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 08:57 am:

If you don't CATCH, THROW generates on-screen error messages. Give it a try. One of your earlier calls may be failing.

Neal

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 09:08 am:

Oh and yes -- I'd like to see the original source you're porting from. It'll help me figure things out, as I've never used CategoryIntialize myself.

Neal

By [Matthew Blair \(Blair\)](#) on Monday, February 7, 2000 - 09:43 am:

Darn it! I really need a connection from my brain to my Palm so that things I think of will get automatically recorded as ToDos :^)

What I meant to add on my last post was that I had stepped through the code interactively within the QF environment (a lot of Graffiti there!), and all of the OS calls did succeed (Err == 0).

I'll add the THROWS anyway and report what happens. The 'C' code will be in the next post.

Matt

By [Matthew Blair \(Blair\)](#) on Monday, February 7, 2000 - 09:47 am:

```

/*****
*
*   FUNCTION: MemoAppInfoInit
*
*   DESCRIPTION: Create an app info chunk if missing.  Set
*                 the strings to a default.
*
*   PARAMETERS: database pointer
*
*   RETURNS: 0 if successful, errorcode if not

```

```
*
*   CREATED: 1/3/95
*
*   BY: Roger Flores
*
*****/
```

```
Err MemoAppInfoInit(DmOpenRef dbP)
{
    UInt                cardNo;
    VoidHand            h;
    LocalID             dbID;
    LocalID             appInfoID;
    MemoAppInfoPtr     nilP = 0;
    MemoAppInfoPtr     appInfoP;

    if (DmOpenDatabaseInfo(dbP, &dbID, NULL, NULL, &cardNo, NULL))
        return dmErrInvalidParam;
    if (DmDatabaseInfo(cardNo, dbID, NULL, NULL, NULL, NULL, NULL,
        NULL, NULL, &appInfoID, NULL, NULL, NULL))
        return dmErrInvalidParam;

    if (appInfoID == NULL)
    {
        h = DmNewHandle (dbP, sizeof (MemoAppInfoType));
        if (! h) return dmErrMemError;

        appInfoID = MemHandleToLocalID (h);
        DmSetDatabaseInfo(cardNo, dbID, NULL, NULL, NULL, NULL, NULL, NULL,
        &appInfoID, NULL, NULL, NULL);
    }

    appInfoP = MemLocalIDToLockedPtr(appInfoID, cardNo);

    // Clear the app info block.
    DmSet (appInfoP, 0, sizeof(MemoAppInfoType), 0);

    // Initialize the categories.
    CategoryInitialize ((AppInfoPtr) appInfoP, LocalizedAppInfoStr);

    // Initialize the sort order.
    DmSet (appInfoP, (ULong)&nilP->sortOrder, sizeof(appInfoP->sortOrder),
        soAlphabetic);

    MemPtrUnlock(appInfoP);

    // The conduit ignores dmHdrAttrAppInfoDirty
    return 0;
}
```

By [Matthew Blair \(Blair\)](#) on Monday, February 7, 2000 - 09:52 am:

OK. I added the THROWS in, and received no error messages. Also, the exact fatal error I'm receiving is:

```
DataMgr.c, Line:6294
DmWrite: DmWriteCheck
failed
```

**Thanks,
Matthew**

By [Matthew Blair \(Blair\)](#) on Monday, February 7, 2000 - 09:57 am:

One other thing: if you want a 'tAIS' resource to test with this code, you can simply copy the one from MemoPad (ID 1000) into a resource db.

Alternatively, I could mail you my resource db.

Matt

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 12:29 pm:

Just ran your code. Good news, maybe -- ran fine the first time through, created your database and no crashes. The second time, when the database already exists, I get errors. I'll try and see why.

Neal

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 01:06 pm:

Ok, here it's running fine, with a tiny mod. It looks like the system is happier running DmDatabaseInfo on a database that's already open.

```
\ matt

needs ids
needs zstrings
needs core-ext
needs tools-ext
2variable appinfoid
2variable LocalizedAppInfoStrID

ID DATA ID MaTt

needs resources
(ID) p4ap (ID) Fuel use-resources

2variable _FuelDBR
: FuelDBR _FuelDBR 2@ ;

: FuelDB? ( -- localid. flag )
\ returns true if db exists
z" FuelTrackDB" drop
>abs cardnum @ DmFindDatabase
2dup or 0= 0= ;

: CreateFuelDB ( -- err )
false DATA MaTt
```

```
z" FuelTrackDB" drop >abs
cardnum @ DmCreateDatabase ;

: OpenFuelDB ( -- )
  dmModeReadWrite
  MaTt DATA
  DmOpenDatabaseByTypeCreator
  _FuelDBR 2! ;

: CloseFuelDB ( -- err )
  FuelDBR DmCloseDatabase ;

: FuelDBInit ( -- )
  CreateFuelDB drop OpenFuelDB
  FuelDB? drop 2>r 0. 0. 0. appInfoID
  >abs 0. 0. 0. 0. 0. 0. 2r>
  cardnum @ DmDatabaseInfo drop
  appInfoID 2@ or 0= if
    2. FuelDBR
    DmNewHandle
    MemHandleToLocalID appInfoID 2!
    0. 0. 0. appInfoID >abs 0. 0. 0. 0. 0.
    0. 0. FuelDB? drop cardnum @
    DmSetDatabaseInfo drop
  then
  cardnum @ appInfoID 2@
  MemLocalIDToLockedPtr 2dup 2dup
  2>r 2>r 2>r 0 2. 0. 2r> DmSet drop
  LocalizedAppInfoStrID 2r>
  CategoryInitialize 2r>
  MemPtrUnlock
  CloseFuelDB drop ;
```

Testing:

```
include matt
FuelDBInit
FuelDBInit
FuelDBInit
```

Neal

By [Matthew Blair \(Blair\)](#) on Monday, February 7, 2000 - 01:17 pm:

That's interesting. I deleted the database using RsrcEdit, and was never able to get it to run through without crashing at the **CategoryInitialize** step.

When you say it ran fine, were you able to query the database for a category name using **CategoryGetName (&name. index db.)?**

Matt

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 01:18 pm:

I'll try that. Have you tried my modified code?

Neal

By [Matthew Blair \(Blair\)](#) on Monday, February 7, 2000 - 01:36 pm:

Just did. I assume the only modification made is to use `OpenFuelDB` at the beginning. Is that correct?

Also, I note that you have the `LocalizedAppInfoStringID` in a `2variable`. I had simply stored the resource ID (5000) as a constant of the same name. Does that make a difference?

At any rate, when I run your modified code, I get an alert that says "Exception 537 raised." and a button that says, "hmmm". That's if the database already exists.

If I run the code when the database has been deleted beforehand, I receive the fatal error as before.

Thanks,
Matthew

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 01:40 pm:

Matthew, what's your Palm OS version? I'm testing under 3.3.

Neal

By [Matthew Blair \(Blair\)](#) on Monday, February 7, 2000 - 01:42 pm:

Same here.

Matthew

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 01:54 pm:

My error Matt -- `LocalizedAppInfoStringID` shouldn't be a variable, but rather a constant. Ok, now I'm working with the same problem you're getting.

Neal

By [Matthew Blair \(Blair\)](#) on Monday, February 7, 2000 - 01:59 pm:

Too bad. My hopes had risen when I saw that the program didn't crash (hard, anyway) :^)

Interesting, though, that passing the address of `LocalizedAppInfoStringID` instead of the constant should cause the OS to react that way.

Matthew

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 02:17 pm:

Send your hopes back up. The problem is simple: the size of the handle you're creating and initializing should be 280, not 2. Here's working source:

```
\ matt  
  
needs ids  
needs zstrings  
needs core-ext  
needs tools-ext  
2variable appinoid  
1000 constant LocalizedAppInfoStrID  
  
ID DATA ID MaTt
```

```

needs resources
(ID) p4ap (ID) Fuel use-resources

2variable _FuelDBR
: FuelDBR _FuelDBR 2@ ;

: FuelDB? ( -- localid. flag )
\ returns true if db exists
z" FuelTrackDB" drop
>abs cardnum @ DmFindDatabase
2dup or 0= 0= ;

: CreateFuelDB ( -- err )
false DATA MaTt
z" FuelTrackDB" drop >abs
cardnum @ DmCreateDatabase ;

: OpenFuelDB ( -- )
dmModeReadWrite
MaTt DATA
DmOpenDatabaseByTypeCreator
_FuelDBR 2! ;

: CloseFuelDB ( -- err )
FuelDBR DmCloseDatabase ;

: FuelDBInit ( -- )
CreateFuelDB drop OpenFuelDB
FuelDB? drop 2>r 0. 0. 0. appInfoID
>abs 0. 0. 0. 0. 0. 0. 2r>
cardnum @ DmDatabaseInfo throw
appInfoID 2@ or 0= if
  280. FuelDBR
  DmNewHandle
  MemHandleToLocalID appInfoID 2!
  0. 0. 0. appInfoID >abs 0. 0. 0. 0. 0.
  0. 0. FuelDB? drop cardnum @
  DmSetDatabaseInfo throw
  then
cardnum @ appInfoID 2@
MemLocalIDToLockedPtr 2dup 2dup
2>r 2>r 2>r 0 280. 0. 2r> DmSet throw
LocalizedAppInfoStrID 2r> CategoryInitialize
2r> MemPtrUnlock
CloseFuelDB drop ;

FuelDBInit

OpenFuelDB

create name
name >abs 1 FuelDBR
CategoryGetName

name dup >abs StrLen type

```

CloseFuelDB

Neal

By [Matthew Blair \(Blair\)](#) on Monday, February 7, 2000 - 02:51 pm:

Perfect! It works great!

But how did you discern that I needed the value 280, and not 2? If you look at the 'C' code, it passes a `sizeof(MemoAppInfoType)` which is a structure containing x number of bytes. My original intent was to just test this out with a simple two-byte index into the last selected category.

I guess what I'm driving at is, is this 280 a constant number or what does it depend on?

Thanks for your help!

Matthew

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 03:05 pm:

Here's the struct in question:

```
typedef struct {
    Word renamedCategories;
    Char categoryLabels [dmRecNumCategories] [dmCategoryLength];
    Byte categoryUniqIDs[dmRecNumCategories];
    Byte lastUniqID;
} AppInfoType;
```

dmRecNumCategories and **dmCategoryLength** are both 16, so:

2 (Word)
 $16 * 16 = 256$ (Char [][])
 16 (Byte [])
 2 (Byte)

$2 + 256 + 16 + 2 = 276$

so actually 280 is four bytes bigger, which is definitely the direction in which to err.

The AppInfo chunk actually holds copies of all the category names, and has to be big enough to hold as many as 16 of them.

Neal

By [Matthew Blair \(Blair\)](#) on Monday, February 7, 2000 - 03:13 pm:

I guess what I'm wondering is, if I only wanted to support N categories, $N \leq 16$, could I make the AppInfo chunk smaller? I'm not actually considering doing this, I'm just wondering if the size of the AppInfo chunk is set in stone. Or silicon, as the case may be.

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 03:14 pm:

You can't. You have to allow space for the maximum number of categories a user might add -- the Palm limit is 16.

Neal

By [Matthew Blair \(Blair\)](#) on Monday, February 7, 2000 - 03:27 pm:

Okay! My heartfelt thanks for coming to the rescue! It would have been a long while before I would have thought to check the size of AppInfo block, mainly because I did not know that the AppInfo block was where the categories were stored. I only regret that I have detained you from QF v2!

Just a last question on **THROWing** and **CATCHING**. If I put a **THROW** after all OS calls that return an `Err` code, will the `Err` code be consumed? Regardless of whether or not there is a **CATCH** in place?

Thanks again!

Matthew

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 04:09 pm:

It will indeed. If the error code is zero, **THROW** is effectively **DROP**.

Neal

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 05:06 pm:

Addendum: if the error code is non-zero, **THROW** will either

- a) in an app run from the Quartus Forth console, display an "Exception #" alert
- b) in a stand-alone app, the app will terminate.

So what you want to do is a **CATCH** around your main routine, and do any required cleanup or error-handling there, as we discussed previously.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 8, 2000 - 07:45 am:

Thanks again Neal!

By the way, when I was trying to compile my application last night, I had a statement in my *make-fuel* source as follows:

```
LocalizedAppInfoStrID (ID) tAIS CopyRsrc
```

QF complains that `tAIS` is an unknown word. Is this missing from the dictionary, or have I goofed again?

Thanks,
Matthew

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 09:06 am:

Inside a definition, you must use `[ID]` rather than `(ID)`.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 8, 2000 - 09:27 am:

Neal,

This is my *make-fuel* source:

```
\ make-fuel
```

```
docneeds FuelIDs
docneeds FuelMain

' go (ID) MaTt MakePRC Fuel

FuelMainFrm (ID) tFRM CopyRsrc
StatForm (ID) tFRM CopyRsrc

:noname
  MaxTbmp 1+ MinTbmp do
  i [ID] Tbmp CopyRsrc
  loop
; execute

MainMenu (ID) MBAR CopyRsrc

LocalizedAppInfoStrID (ID)
  tAIS CopyRsrc

BlankFormID (ID) tFRM DelRsrc drop
MainFormID (ID) tFRM DelRsrc drop
TitledFormID (ID) tFRM DelRsrc drop
```

I think that the use of (ID) is correct in this case. However, looking back at the source, I wondered if the fact that I split the statement up over two lines was the problem. Checked it -- turns out it was.

Sorry about that!

Matthew

By [Erwin Schomburg](#) on Tuesday, February 8, 2000 - 09:43 am:

Generic tip, related to the "hard to find bugs" thread: Anything that parses from input, like (ID) does, must be followed on the very same input line by the tokens to be parsed before the line break. Parsing goes through up to a specified delimiter character or a line break, whatever comes first

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 09:44 am:

Ah quite right, yes. The line break was the problem.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 8, 2000 - 10:42 am:

Erwin, how does SmartDoc interpret a line that is wrapped? Does it insert a newline character or leave it as is?

Matt (a happy SmartDoc user since I visited Erwin's web page) :^)

By [Erwin Schomburg](#) on Tuesday, February 8, 2000 - 01:11 pm:

Like Memo application, it just wraps. But here comes another caveat then: The docinc module's line length limit is 120.

/Erwin

By [Garth T Kidd \(Garth\)](#) on Monday, March 6, 2000 - 03:08 am:

Could someone deconstruct the definition of FuelDBInit? I'm slowly getting this, but need a few more kicks. :)

By [Matthew Blair \(Blair\)](#) on Monday, March 6, 2000 - 08:10 am:

Well, since I defined it, I better take responsibility for it... :^)

Here goes.

First, the database is created and opened

```
: FuelDBInit ( -- )
  CreateFuelDB drop OpenFuelDB
```

Next, I am setting up the stack for a call to DmDatabaseInfo. FuelDB? checks for the existence of the db and returns the localID, a parameter in the DmDatabaseInfo call.

```
FuelDB? drop 2>r 0. 0. 0. appInfoID
>abs 0. 0. 0. 0. 0. 0. 2r>
cardnum @ DmDatabaseInfo throw
```

DmDatabaseInfo puts the application info ID in the appInfoID variable (it will do other things as well, but I passed NULL for all the other parameters it can return info about). Here, we check to see if appInfoID is null. If so, then we need to set that information.

```
appInfoID 2@ or 0= if
  280. FuelDBR
  DmNewHandle
  MemHandleToLocalID appInfoID 2!
  0. 0. 0. appInfoID >abs 0. 0. 0. 0. 0.
  0. 0. FuelDB? drop cardnum @
  DmSetDatabaseInfo throw
then
```

Now, we clear the application information block with DmSet

```
cardnum @ appInfoID 2@
MemLocalIDToLockedPtr 2dup 2dup
2>r 2>r 2>r 0 280. 0. 2r> DmSet throw
```

Finally, we use the PalmOS call CategoryInitialize to set up the initial category information. This is stored in a resource of type tAIS.

```
LocalizedAppInfoStrID 2r> CategoryInitialize
2r> MemPtrUnlock
CloseFuelDB drop ;
```

Hope this helps,

Matthew

By [Garth T Kidd \(Garth\)](#) on Monday, March 6, 2000 - 09:12 pm:

Uh, I think I'm not going to be able to grok that quickly enough to be able to code database apps on the plane. :)

By [Garth T Kidd \(Garth\)](#) on Monday, March 6, 2000 - 09:12 pm:

[... but it looks VERY handy for later. Thanks!]

By [H Nordstrom](#) on Tuesday, March 7, 2000 - 03:34 pm:

Garth,
why not downloading the answer you've got. Bring it along on your trip and you can study when not snoozing.
That's how Palm's are supposed to be used :-)

By [Garth T Kidd \(Garth\)](#) on Sunday, March 12, 2000 - 03:55 pm:

I didn't even have enough time to copy and paste the bugger -- the forum code fills the PRE with BR tags, which for some reason are eliminated when copying and pasting from IE to Notepad.

I'm back home now, so I'll be back on it in all my Copious Spare Time.

In the mean time, I'll try dissecting one of the chunks of code:

```
\ if appInfoID is null, we need to set that information
appInfoID 2@ or 0= if
    280. FuelDBR DmNewHandle MemHandleToLocalID
    appInfoID 2!
    0. 0. 0. appInfoID >abs 0. 0. 0. 0. 0.
    0. 0. FuelDB? drop cardnum @
    DmSetDatabaseInfo throw
then
```

If we can't find the appInfoID, we allocate a new chunk in the same database as we've already opened. Is that how all new records are created?

We convert the new handle to a LocalID. I'm not sure why that is -- memory efficiency? We stash that in our appInfoID variable for later. Finally, we set up the call to DmSetDatabaseInfo and execute it.

One thing I haven't quite yet figured is why we're doing all this. The SDK docs (iSilo is great!) tell me that the application info block is an "optional field that the database may use to store application-specific information". What they don't tell me is whether that makes it identical to the "resource of the type appInfoStringsRsc" that CategoryInitialize wants. Anyone care to untangle that one for me?

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

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PalmGear registration delay

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): PalmGear registration delay](#)

By **[Neal Bridges \(Nbridges\)](#)** on Wednesday, February 2, 2000 - 01:50 pm:

I've just now received a sales report for the period since Jan 31. -- it was apparently delayed for technical reasons. I'll send the registrations out today.

Neal

By **[Neal Bridges \(Nbridges\)](#)** on Wednesday, February 2, 2000 - 11:47 pm:

Speaking of delays -- I'm still working through a 12-day mail backlog as the result of my vacation. If you've been waiting for a reply, it should be soon.

Thanks for your patience!

Neal

By **[Neal Bridges \(Nbridges\)](#)** on Thursday, February 3, 2000 - 11:25 pm:

Ok, I think I'm up to date on replying to mail. If you read this and think "what about me?" please drop me a note and I'll remedy the situation.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

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Pedit - new editor for Palm

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Pedit - new editor for Palm

By **Yaakov** on **Wednesday, February 2, 2000 - 06:28 am:**

Has anyone tried it yet? I have and found it to be quite a nice replacement to the standard MemoPad app., especially because it works with MemoDB database without changing its format. It adds among other features, search within the current memo, search/replace, monospaced font (courier) and backup of a single memo. It doesn't eliminate the MemoPad 4k limit on the records size though.

So it can be a perfect tool for editing Quartus sources. My question is: how I can tell Quartus to launch pedit on the "go to error" command?

TIA

By **John CLARKE** on **Wednesday, February 2, 2000 - 08:15 am:**

Where can I get it?

By **[Neal Bridges \(Nbridges\)](#)** on **Wednesday, February 2, 2000 - 08:45 am:**

<http://www.math.ohio-state.edu/~nevai/palm/>

I'll see if it can be launched by 'Go To Error'.

Neal

By **[Barry Ekstrand](#)** on **Thursday, February 3, 2000 - 01:26 pm:**

A note of update on pedit: I exchanged a couple of e-mails with the developer of pedit, Paul Nevai, and I learned the next version will have buttons to launch PocketC and OnBoard C in the next version. I put a bug in his ear about Quartus Forth and he indicates he'll put this same capability in the next version of pedit for QF as well.

pedit looks pretty good to me so far, and the response from Paul to inquiries has certainly been excellent. Anyone currently using Memopad for their editor ought to take a look.

Barry

By **[Winchell Chung](#)** on **Friday, February 4, 2000 - 11:56 am:**

And now for the obligatory stupid newbie question: "Where can I find documentation on the 'Go To Error' function?"

I cannot seem to find it in the Quartus docs. Is it in the PalmOS docs or the POSE docs?

By **[Neal Bridges \(Nbridges\)](#)** on **Friday, February 4, 2000 - 12:35 pm:**

It's actually called "Last Error" -- it's a Quartus Forth menu item.

<http://www.quartus.net/products/forth/manual/console.htm>

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

DmInsertionSort callback

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): DmInsertionSort callback](#)

By [John Clarke](#) on Wednesday, February 2, 2000 - 05:02 am:

I'm trying to call DmInsertionSort, and I'd like the comparison function to be written in Forth.

Given that 'myComparison' is a Forth word expecting two record pointers and the 'other' value on the stack, I guess it isn't as simple as

```
0 \ 'other' value
['] myComparison xt>abs \ '&compar.' value
myDBHandle 2@ MemHandleLock \ 'dbR.' value
DmInsertionSort
?dup if ...
```

I guess the OS will expect the '&compar.' value to be pointing at executable code that observes C calling conventions. But 'myComparison' will expect Forth to be all set up, won't it?

Anywhere I can read about this? Thanks

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 2, 2000 - 08:41 am:

If you do a keyword search on 'DmQuickSort' you'll turn up some hits. There's a problem using the Dm*Sort routines right now, I'm working on it.

Neal

By [John CLARKE](#) on Tuesday, February 8, 2000 - 11:30 am:

Let me know when you've sorted it out! Thanks...

By [Matthew Blair \(Blair\)](#) on Friday, March 3, 2000 - 03:49 pm:

Hi Neal,

Just wondering about the status of the Dm*Sort routines. Is this a fix that will be in the next update?

Thanks,

Matthew

By [Neal Bridges \(Nbridges\)](#) on Friday, March 3, 2000 - 04:04 pm:

Hope so Matthew; I'm testing solutions now.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Difficult Gremlin's bugs resolved!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Difficult Gremlin's bugs resolved!

By [Wade Carlson](#) on Wednesday, February 2, 2000 - 12:58 am:

I think we should start a thread to share bugs that we have tackled that took considerable time to resolve (one's that may be common to other users). For example, Barry mentioned a glitch when not setting the font when using a label in RsrcEdit. Here's some of mine:

1. When using PopupForm, you must always use FrmReturnToForm instead of ShowForm to get back to the original calling form. While it appears to work, after about 50 or so times of PopupForm, ShowForm, PopupForm, ShowForm, etc, it will crash. (This one took me about 3 weeks to figure out when I couldn't figure out why Gremlins kept crashing!)
2. I started using SmartDoc to do my editing. Supposedly DocNeeds is supposed to ignore bookmarks (which it does). So I thought it would be neat to have SmartDoc set a bookmark for every ':' within my program. For some reason, with that many bookmarks (or when SmartDoc scans for them) DocNeeds will just lock up your Palm (took me about 3 hours to figure this one out!)

By [Erwin Schomburg](#) on Wednesday, February 2, 2000 - 04:04 am:

Can you please elaborate on your point 2, (too many) Bookmarks in doc-formatted source files?

/Erwin

By [Wade Carlson](#) on Wednesday, February 2, 2000 - 08:23 pm:

Well, I couldn't really figure out if it was too many bookmarks, or if it was from bookmarks that were made by 'Scan'ing for 'Custom' bookmarks. For example, open up one of your programs in SmartDoc. Then go to Edit Bookmarks, then Scan Custom and in the Search For line put ':' (colon space). Whenever I did this they would not load into Quartus.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 2, 2000 - 11:11 pm:

I have recently browsed an online document describing DOC format in greater detail; I think the bookmark handling of *doc.txt* should be revised accordingly.

Neal

By [Ron Doerfler](#) on Thursday, February 3, 2000 - 06:49 pm:

On the original subject of bugs that took awhile to find, I would have to include:

- 1) Using the Duplicate Database menu function in RsrcEdit to back up a database that contained a record that was being manipulated by my program. I figured that if I corrupted the records in the database, I could just copy it back and try it again. Although my program would

append data correctly to a record in my database, it refused to remove the record. Turns out that if you make such a duplicate, you have to manually change the creator or type of the duplicate so it's different, or the Palm gets confused in places trying to find the right database, and in this case it was deleting the record from the duplicate database. Took a while to figure that one out. 8^)

2) A certain semi-popular program hides its registration info in a database called "MemoDB " (note the space at the end which is not visible in the RsrcEdit listing) with creator "memo" and type "data". The real MemoPad uses "MemoDB", "memo" and "DATA". And of course deleting this program doesn't delete this database, as the creator ID and type are different. So if you've ever installed it, it leaves a essentially identical database to the MemoPad lying around. I had problems with my ActiveKey app if that faux (a carefully chosen word) database existed on a Palm, while I didn't have problems if it wasn't on a Palm! The amazing Erwin found this one. I will try to resurrect how this happened, but I know that to fix it I eventually changed the OpenMemoDB routine in newmemo.txt to:

```
: memodbid@ ( -- dbID. | 0. )
\ Gets LocalID of MemoDB.
\ Assumes it's on card 0.
z" MemoDB" drop >abs 0
DmFindDatabase ;

: OpenMemoDB ( -- )
\ Assumes card 0.
dmModeReadWrite memodbid@ 0
DmOpenDatabase _MemoDBR 2! ;
```

and it fixed the confusion. Although I deleted the app, I always keep that database on my Palm to test (and mutter an occasional curse) against.

Ron

By [Wade Carlson](#) on Thursday, February 3, 2000 - 11:19 pm:

hmm.... I have this extra MemoDB on my palm. Care to share with us what app uses it so that I know if I can safely delete it or not? If you'd rather not post it, you could email me.

By [Erwin Schomburg](#) on Friday, February 4, 2000 - 12:38 am:

He he, don't know if Ron or I should answer this, because I found it when it gave Ron some headaches making his ActiveKey. Its a kind of shadow database ISComplete IR related stuff uses for registration information. Throw it away when you do not have such applications or have them deleted, but don't dare to even smile at it if you have and want to use them further.

/Erwin

By [Jim Hendricks \(Jimh\)](#) on Friday, February 4, 2000 - 09:21 am:

Thanks, discovered I had it too but I deleted the eval of OmniRemote months ago.

I fully understand the need for developers to come up with schemes to protect their property when providing eval versions but I hate when they leave stuff behind, to me that's called stealing my memory!

Thanks for the tip!

Jim

By [Trevor Steele](#) on Monday, February 14, 2000 - 07:48 am:

Hi everyone

I've been doing some testing with gremlins and I have just had the following error from several gremlins runs. Has anyone encountered this before and if so what is the message telling me?

4882.929 (78309): === ERROR: "Scorebook" 1 reports "Find.c, Line:818, Error launching app for Find". If this is the latest version of "Scorebook", please report this to the application author.

4882.929 (78309): === ERROR:

4886.210 (78309): === ERROR: Gremlin #0 terminated in error at event #78308

In the Quartus manual it gives the following definition for generate symbols:

generate-symbols (flag --)

true generate-symbols will cause MakePRC to generate symbolic debugging information in the stand-alone PRC. These debugging symbols allow for Palm OS Emulator profiling and debugging; Forth words will be listed by name in the output. Must be used before MakePRC.

Any chance of an idiots guide as to how you can extract the Forth words from the output. I think this would be very useful for debugging but I'm not sure how to go about it.

Best regards

Trevor

By [Neal Bridges \(Nbridges\)](#) on Monday, February 14, 2000 - 11:25 am:

That error might mean you're out of dynamic memory. The Gremlin logs should be helpful too.

To make use of the symbols generated by generate-symbols, you need to be running a debugger under the emulator. I use "Debuffer" -- it's a good one, and Forth-based. Give it a try.

Neal

By [Trevor Steele](#) on Monday, February 14, 2000 - 01:07 pm:

Thanks Neal

I have tried Debuffer under the emulator(excellent piece of kit).

The best I can get are the last few API calls using a backtrace. Is there something I'm missing?

The above message was actually taken from the log file, I must confess it can be difficult at times to make sense of the files although combined with Debuffer I've been able to remove several bugs to date.

Best regards

Trevor

By [Neal Bridges \(Nbridges\)](#) on Monday, February 14, 2000 - 01:31 pm:

The most illuminating part of the log would be the few events leading up to "Error launching app".

Neal

By [Trevor Steele](#) on Monday, February 14, 2000 - 03:00 pm:

Below are the last few lines before the error message

```
4882.915 (78309):      --- System Call 0xA04E: DmGetLastErr.
4882.915 (78309):      --- System Call 0xA33C: SysGetAppInfo.
4882.915 (78309):      --- System Call 0xA012: MemChunkFree.
4882.929 (78309): --- System Call 0xA03C: MemSemaphoreReserve.
4882.929 (78309):      --- System Call 0xA03D: MemSemaphoreRelease.
4882.929 (78309):      --- System Call 0xA084: ErrDisplayFileLineMsg.
4882.929 (78309):      --- System Call 0xA0C5: StrCopy.
4882.929 (78309):      --- System Call 0xA0C6: StrCat.
4882.929 (78309):      --- System Call 0xA0C7: StrLen.
4882.929 (78309):      --- System Call 0xA0C9: StrIToA.
4882.929 (78309):      --- System Call 0xA0C6: StrCat.
4882.929 (78309):      --- System Call 0xA0C7: StrLen.
4882.929 (78309):      --- System Call 0xA0C6: StrCat.
4882.929 (78309):      --- System Call 0xA0C7: StrLen.
4882.929 (78309):      --- System Call 0xA0C6: StrCat.
4882.929 (78309):      --- System Call 0xA0C7: StrLen.
4882.929 (78309):      --- System Call 0xA0AD: SysFatalAlert.
4882.929 (78309):      === ERROR: Gremlin #0 Event 78308
4882.929 (78309):      === ERROR:
```

4882.929 (78309): === ERROR: "Scorebook" 1 reports "Find.c, Line:818, Error launching app for Find".
If this is the latest version of "Scorebook", please report this to the application author.

I believe the DmGetLastError is preceded by a DmOpenDatabase as the last data manager call. I assume that is where the problem arises. Quite why it fails I've yet to determine. Am I on the right track :-)

Best regards

Trevor

By [Neal Bridges \(Nbridges\)](#) on Monday, February 14, 2000 - 06:13 pm:

You'd need to go back a bit further -- what you've got there is the sequence of actions involved in displaying the "Error launching app" message itself.

Neal

By [Trevor Steele](#) on Tuesday, February 15, 2000 - 05:11 am:

Dear Neal

You confirmed my suspicions that I would have to look further up in the file. Checking for the last Data Manager call which the DmGetLastError might refer to gives me the following with many calls to HwrIRQ4Handler as noted below.

```

4881.940 (78309):      --- System Call 0xA08E: SysAppLaunch.
4881.940 (78309): --- System Call 0xA33C: SysGetAppInfo.
4881.940 (78309):      --- System Call 0xA011: MemChunkNew.
4881.940 (78309): --- System Call 0xA03C: MemSemaphoreReserve.
4881.954 (78309): --- System Call 0xA00A: MemHeapPtr.
4881.954 (78309): --- System Call 0xA254: HwrIRQ4Handler.
4881.954 (78309): --- System Call 0xA03D: MemSemaphoreRelease.
4881.967 (78309): --- System Call 0xA027: MemSet.
4881.967 (78309): --- System Call 0xA09E: cjtkid.
4881.967 (78309): --- System Call 0xA049: DmOpenDatabase.
4881.967 (78309): --- System Call 0xA03C: MemSemaphoreReserve.
4881.967 (78309): --- System Call 0xA33C: SysGetAppInfo.
4881.967 (78309):      --- System Call 0xA09E: cjtkid.
4881.967 (78309):      --- System Call 0xA011: MemChunkNew.
4881.967 (78309): --- System Call 0xA03C: MemSemaphoreReserve.
4881.967 (78309): --- System Call 0xA00A: MemHeapPtr.

```

```
4881.967 (78309): --- System Call 0xA254: HwrIRQ4Handler.  
4881.967 (78309): --- System Call 0xA03D: MemSemaphoreRelease.  
4881.982 (78309): --- System Call 0xA011: MemChunkNew.  
4881.982 (78309): --- System Call 0xA03C: MemSemaphoreReserve.  
4881.982 (78309): --- System Call 0xA00A: MemHeapPtr.  
4881.982 (78309): --- System Call 0xA254: HwrIRQ4Handler.  
4881.982 (78309): --- System Call 0xA03D: MemSemaphoreRelease.  
4881.995 (78309): --- System Call 0xA027: MemSet.  
4881.995 (78309): --- System Call 0xA024: MemLocalIDKind.  
4881.995 (78309): --- System Call 0xA023: MemLocalIDToGlobal.  
4881.995 (78309): --- System Call 0xA011: MemChunkNew.  
4881.995 (78309): --- System Call 0xA03C: MemSemaphoreReserve.  
4881.995 (78309): --- System Call 0xA00A: MemHeapPtr.  
4881.995 (78309): --- System Call 0xA254: HwrIRQ4Handler.
```

This is followed by about 240 calls to HwrIRQ4Handler and then the calls in my last posting.

If I'm being a pain with this please let me know, but I've rather hit a brick wall with this particular problem and would appreciate any advice.

Best regards

Trevor

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 15, 2000 - 08:52 am:

HwrIRQ4Handler is part of the AMX kernel inside the Palm OS -- very low level. I've never seen an app fail quite like that; it must be a side-effect of something else the app is doing.

I suggest you divide-and-conquer. Temporarily disable half of your app's functionality, recompile, and Gremlin-test that; see if it fails. If it doesn't, switch halves and test again. If it does fail, divide it in half again and re-test. You should be able to find the offending section of code fairly quickly.

Neal

By [Trevor Steele](#) on Wednesday, February 16, 2000 - 07:39 am:

Thanks for the advice Neal. In fact the results were after a series of divide and conquer tests which reduced the number of gremlins to failure from 190,000 to 78,000. I will look at the code which is still failing and do some more digging :)

Best regards

Trevor

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 16, 2000 - 08:59 am:

You might try to find a Gremlin sequence that causes the failure sooner. Also, be sure your stack is remaining balanced while your app runs. One way to do that is to put

0 0 at .s

at the top of your event handling loop, so you can watch it. (*at* is in *graphics*).

Neal

By [Trevor Steele](#) on Wednesday, February 16, 2000 - 11:38 am:

Thanks Neal

I'm a great fan of the 0 0 at .s when developing apps. It has let me correct many stupid faults before and during testing.

In this case the stack appears to be balanced. However I' working on your suggestion of a Gremlins sequence for earlier failure.

Trevor

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 16, 2000 - 01:03 pm:

Ok Trevor. Sorry if some of my advice is hitting you at too low a level -- just making sure the bases are all covered.

If you're stumped, mail me your sources and I'll take a peek. Sometimes a second set of eyes is helpful.

Neal

By [Trevor Steele](#) on Thursday, February 17, 2000 - 05:22 am:

No offence taken Neal. I'll always welcome any suggestions! Quite often it is the low level ones which are overlooked and which can often solve the problems.

I have found a few problems with some dynamic memory allocation which I'm going to rework and see if that helps. Thanks again for all your help.

Trevor

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Catching Up/Down Arrow keys

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Catching Up/Down Arrow keys

By [Matthew Blair \(Blair\)](#) on Tuesday, February 1, 2000 - 12:23 pm:

I'm trying to capture the keypress of the up/down arrow key (hardkeys). Testing it interactively from the console, I do the following:

```
ekey (press up or down arrow key quickly)
```

```
event 8 + @ ( supposed to return chr )  
.s 10 ok
```

My understanding, from previous threads, is that `event 8 + @` should return a different value depending on whether or not the up or down arrow was pressed. However, I get the value 10 returned either way. I've searched the bytes around the address returned by `event`, but have not found anything to indicate that one or the other was pressed.

Thanks,
Matthew

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 1, 2000 - 01:31 pm:

KEY returns the up/down buttons, 11 for up, 12 for down.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 1, 2000 - 01:55 pm:

Hmmm. Okay. Tried it, it works as advertised.

Now, if I want to catch the up/down buttons from within my event loop (`keyDownEvent` instead of interactively from the console, do I need to move from an `ekey`-based handler to a `key`-based handler?

Matt

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 1, 2000 - 02:01 pm:

No, not at all. EKEY returns a '4' for the PgUp/PgDown keys. This can be converted to a character with `EKEY>CHAR`.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 1, 2000 - 03:16 pm:

Neal,

Curiously (at least to the novice), this only appears to work from within a colon definition. When I do the {ekey, press button, ekey>char } sequence interactively from the console, I come up with the same result as mentioned at the beginning of the post.

Could you explain why this is? I enjoy using the interactive mode to test out features without building a colon definition, and I should probably know when such a technique will fail.

Thanks,
Matt

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 1, 2000 - 03:20 pm:

Oh! I see. I wasn't aware you were working these commands one line at a time from the console. The event buffer used by KEY and EKEY is the same one used by the event handler in ACCEPT, which is what the console uses to take your input. You're seeing '10' because "Linefeed" was the last thing you entered.

Neal

By [Ron Doerfler](#) on Tuesday, February 1, 2000 - 03:25 pm:

Or to see it work in the original way you asked, try:

```
: test
begin
  ekey event 4 cells + @ .
again ;
```

and you'll see 11 or 12 when you press the up/down hardkeys, mixed with a 10 for the timed-out EKEY events when you don't press them (I didn't bother to check to see if it's a keyDownEvent or nilEvent). So your original proposal (which is how I do it) works in a loop in a definition, but apparently not outside of it.

Ron

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 1, 2000 - 04:07 pm:

Also the single line:

```
ekey event 4 cells + @ .
```

when entered at the console, will return 11 or 12 for the up and down keys, if you press them within a half-second or so.

Neal

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Memo.txt problem (a novice asking)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Memo.txt problem (a novice asking)

By **[Yaakov](#)** on Tuesday, February 1, 2000 - 12:12 pm:

Hi all,

I am trying to play a little bit with memo.txt
(<http://www.quartus.net/files/PalmOS/Forth/Library/memo.txt>).

The word DIR there is supposed to list the table of contents of the MemoPad database - the length and first 40 chars of each memo (the title). I get fatal error each time I run the word. The problem is that, although I have 103 memos (both privat and "public"), DmNumRecords returns 105. DmQueryRecord, when called with 103, returns NULL. Why is that? Are there any hidden records in the MemoPad database which are reported by DmNumRecords but are skipped by DmQueryRecord?

Thanks,
Yaakov.

By **[Yaakov](#)** on Tuesday, February 1, 2000 - 01:12 pm:

It looks like I had some records in MemoDB marked as "deleted" ("save archive copy on PC") and since I was using the UNIX pilot-link package to backup the entire Palm memory, they always remained hidden in the Palm memory and even survived hard resets :). Having all of them purged has cured the problem.

So in case you have deleted records with archive attribute set, memo.txt is going to crash.

Here is what documentation says about DmQueryRecord:

May display a fatal error message if the specified index is out of range or the record at the specified index has been deleted.

I believe that memo.txt should first check the record attribute or something before taking its address from DmQueryRecord?

Also the title of the memo.txt doesn't have the usual timestamp and NAB initials. Neal, could you add them into it?

By **[Neal Bridges \(Nbridges\)](#)** on Tuesday, February 1, 2000 - 02:21 pm:

I can do. Thanks for pointing that out.

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 1, 2000 - 03:11 pm:

Also -- *memo.txt* was intended as a general sketch of how you might access the MemoPad, not as bedrock upon which to build. Especially *dir* -- I wrote that quickly as a demonstration routine for the code above.

A better source is *newmemo.txt*, by Allen Chen. It's in the Library file area. His code covers categories and adds some other nice features.

Neal

By Yaakov on Wednesday, February 2, 2000 - 06:08 am:

Thanks, Neal. I'll look into *newmemo.txt*. Does it mean I can safely delete *memo.txt* from the Palm (no other library file needs it?)

In case anyone is interested, it looks like MemoPad doesn't really delete any record from the database until the next hotsync. If you tell it to keep the record in the archive on PC, it just sets the "deleted" attribute. Otherwise, it both adds the attribute **and** resizes the record to the length 0.

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 3, 2000 - 12:00 am:

I suspect you can delete *memo* if you wish, yes -- nothing depends on it.

Neal

By [Edin Hodzic](#) on Tuesday, February 15, 2000 - 03:20 am:

Hello QFers,

I have problem related to memo files and my application compilation, and thought it might fit this topic.

I have a program of about ten or so memo files. From time to time I get error that QF couldn't open a memo. Sometimes it is my memo, other times it is a QF library memo file it complains about.

The problem goes away if I open the problematic memo file and try again. So, I have this simple workaround, but the problem is still annoying and leaves a bad impression of the whole environment.

This problem may have started happening after I got a replacement implementation of roll from Neal. I doubt it is the cause though.

Any ideas?

Thanks.

Edin Hodzic

P.S. Don't get me wrong, I am still quite impressed with QF.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 15, 2000 - 08:21 am:

Edin, are you perhaps entering graffiti on the screen while your program is loading into Quartus Forth? That can sometimes trip it up.

Neal

By [Edin Hodzic](#) on Tuesday, February 15, 2000 - 01:37 pm:

I may type ahead, while QF is loading, but not after I give the compilation command. Could type ahead during QF loading cause problems?

Thanks.

Edin Hodzic

By [Ron Doerfler](#) on Tuesday, February 15, 2000 - 02:23 pm:

Hi Edin,

Are you opening the memo database during the course of running your program, but not closing it on exit? If you leave the memo database locked, Quartus will sometimes complain about loading a memo the next time, or give an error that it doesn't recognize some strange string in the memo. The easiest way to clear that is indeed to open the supposedly offending memo, add a character and delete it, and then exit the memo, which seems to unlock the memo database.

**Ron
(who's done that)**

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 15, 2000 - 02:24 pm:

Edin, yes typing-ahead while QF is loading your app will occasionally cause problems... it'll claim it can't find a given memo. I've always meant to track down exactly why, but it's a low-priority item at this point.

Neal

By [Edin Hodzic](#) on Tuesday, February 15, 2000 - 05:26 pm:

Ron, the problem is during compilation, I don't open memo from the program.

Neal, I will see if avoiding type-ahead solves the annoyance.

Thanks.

Edin Hodzic

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A table for OS 3.3?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): A table for OS 3.3?](#)

By [Trevor Steele](#) on Tuesday, February 1, 2000 - 08:01 am:

Hi All

Having got fed up with my table not working under OS 3.3 when using the callback to draw the table, I've re-written the code to avoid the use of the callback and the table resource! A table entirely in Quartus in fact. This produces much of the functionality of the Palm table and uses a similar amount of memory (in one of my apps it actually saves some space!)

The example is a repeat of my previous one with the addition that a grid is drawn around each cell. This is not the most efficient way to draw cell boundaries but it is flexible when changing row heights and column widths and can easily be removed if not required.

To try the example you will need to create the following resource using RsrcEdit or Pilrc

Database

Title: TableRsrc

Creator: p4ap

Type: ABCD (or any other suitable type but don't forget to alter the table memo accordingly)

ResourceDB: checked

The database contains tFRM 1100

ID: 1100

Type: tFRM

top: 0

width: 160

left: 0

height: 160

usable: checked

All other properties are set to 0

The form contains

ScrollBar2001

top: 26

width: 7 (all scrollbars should be set to 7)

ID: 2001

left: 152

height: 108

Usable: checked

Set Value Min Value etc to 0

If anyone has any questions on the example I'll be happy to try and answer them.

```
\ newtable 00.01.28 16:55 TS
\ Draws a table and puts the row
\ and column number in each cell
\ Table is scrollable
```

```
needs toolkit
needs events
needs resources
needs forms
needs condthens
needs graphics
```

```
1100 constant tableform
2001 constant scrollbar
26 constant tbltop
10 constant tblleft
108 constant tblheight
135 constant tblwidth
12 constant rowheight
17 constant numrows
3 constant numcols
9 constant visiblerows
```

```
variable row
variable col
variable currentrow
variable currentcol
variable toprow
2variable _scrollptr
```

```
3 array colwidth
```

```
create buffer 15 allot
```

```
0 currentrow !
0 currentcol !
0 toprow !
\ set column widths
45 0 colwidth !
45 1 colwidth !
```

```
45 2 colwidth !
```

```
: getcellcoords ( col row -- y x )
  toprow @ - rowheight * tbltop +
  tblleft rot 0 ?do
    i colwidth @ +
  loop ;

: drawcell
  ( col row -- )
\ fetch y and x values
  2dup row ! col ! getcellcoords
\ determine the row and col, convert \ to text and draw cell contents
  2dup 1+ buffer 0 s" r " append row
  @ 0 <# #s #> append s" , c "
  append col @ 0 <# #s #> append
  swap >abs WinDrawChars
\ draw cell grid
  rowheight 1- col @ colwidth @ 1-
  2swap sp@ 1
  WinDrawGrayRectangleFrame
  2drop 2drop ;

: invert-bitmap ( height width y x --)
  sp@ 0 rot rot WinInvertRectangle
  2drop 2drop ;

: SelectCell ( col row -- )
  over colwidth @ rowheight swap
  2swap getcellcoords invert-bitmap ;

: HighlightTblItem ( -- )
\ check if the highlighted cell is in
\ the visible range. If so then
\ highlight.
  currentrow @ toprow @ -
  dup visiblerows < swap -1 > and if
    currentcol @ currentrow @
    SelectCell
  then ;

: EraseTable ( -- )
  tblheight tblwidth tbltop tblleft
  erase-rectangle ;

: DrawTable ( -- )
```

```

EraseTable toprw @ dup
visiblerows + swap ?do
  numcols 0 ?do
    i j drawcell
  loop
loop
HighlightTblItem ;

```

```
: scrollptr ( -- ptr. ) _scrollptr 2@ ;
```

```

variable sclpage
variable sclmax
variable sclmin
variable sclval
0 sclmin !
0 sclval !

```

```

: initialise-scrollbar ( -- )
\ Set scrollbar variables based on
\ the total number of rows and
\ visible rows
scrollbar GetObjectPtr _scrollptr 2!
numrows visiblerows - dup
sclmax ! visiblerows min sclpage !
sclpage @ sclmax @ sclmin @ sclval
@ scrollptr SclSetScrollbar scrollptr
SclDrawScrollBar ;

```

```

: GetCol ( x -- )
  numcols 1+ 1 ?do
    dup tblleft dup i 0 ?do
      i colwidth @ +
    loop
  within if
    i 1- currentcol ! unloop drop exit
  then
loop drop ;

```

```

: GetRow ( y -- )
visiblerows 0 ?do
  dup tbltop dup rowheight i 1+ * +
  within if
    i toprw @ + currentrow ! unloop
    drop exit
  then
loop drop ;

```

```

: do-table ( y x -- )
\ get table column and row and store
HighlightTblItem GetCol GetRow
currentcol @ currentrow @
SelectCell ;

: do-pen ( -- )
FrmGetActiveFormID tableform = if
\ check coords are inside table,
  coords@ over tbltop dup tblheight
  + within over tblleft dup tblwidth
  + within and if
    do-table
  else 2drop
  then
then ;

: do-scroll ( -- )
\ Get the sclval and set = toprow
sclpage >abs sclmax >abs sclmin
>abs sclval >abs scrollptr
SclGetScrollbar sclval @ toprow !
DrawTable ;

: do-event ( ekey -- )
cond dup penDownEvent = if
  do-pen
else dup sclExitEvent = if
  do-scroll
thens drop ;

(ID) p4ap (ID) ABCD use-resources

: go
tableform showform
initialise-scrollbar DrawTable
begin
  ekey do-event
again ;

```

Best regards

Trevor

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 1, 2000 - 08:16 am:

Trevor, that's really good stuff. I'm impressed.

Neal

By [Trevor Steele](#) on Tuesday, February 1, 2000 - 10:24 am:

Thanks Neal

I hope this is useful for someone out there :)

Best regards

Trevor

By [martian](#) on Wednesday, February 16, 2000 - 03:29 pm:

That's really useful. Just what I was looking for. Now what I want to know is how to push those resource records into the Palm DB, so that you don't even need to start up RsrcEdit.

If anyone's done this and has a sample to post, I'd be grateful, otherwise a pointer to useful info would be good.

Just playing around, learning Forth and the Palm at the same time.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 16, 2000 - 03:43 pm:

What do you mean, push the resource records?

Neal

By [martian](#) on Wednesday, February 16, 2000 - 09:04 pm:

When RsrcEdit shows you the resources for an app, do they live in a DB somewhere? I notice that with the demo apps you have to load up an 'empty' .prc that just has the resources in, no code, then run the code in Quartus (unregged - I'll reg when I can do something useful :-).

When I use RsrcEdit I can build the resources without having to load up an empty .prc.

What I'm looking for is a way to avoid the RsrcEdit step, to embed a textual representation of what RsrcEdit does into my Forth prog and therefore have my forms encoded in source.

Basically I'm looking for compile-time form creation. (Guess I should have said that at the top!)

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 16, 2000 - 09:13 pm:

So you're looking to move the functionality of PilRC on the desktop into Forth. I considered that at one point, but RsrcEdit came along -- it fits the bill nicely. And PilRC is still around for use on

the desktop as required.

For an idea of the size and annoyance of the problem of duplicating PilRC on the Palm, download the PilRC source and give it a read.

Neal

By [Wade Carlson](#) on Wednesday, February 16, 2000 - 11:16 pm:

One point that I would like to add is that compiled apps ARE compiled all into one prc file (resources included). You don't need a separate resource file when you compile your program (using the registered version of Quartus) because they are added to the compiled prc file that is generated. It creates a TRUE stand alone program.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 16, 2000 - 11:20 pm:

Correct -- the registered version has **CopyRsrc** to allow you to copy resources right into the target stand-alone app.

Neal

By [martian](#) on Thursday, February 17, 2000 - 01:01 pm:

Fine, I said compiletime. I meant runtime :-o Mea culpa.

From another angle...

RsrcEdit knows how to read and write program resources, but does it through a groovy interface. At some point it actually writes the resource (into where? Can't be a program file in cases where I have started from scratch.) Subsequently my app can then refer to the resources I've created once I've done the '(ID) p4ap (ID)' bit (I'm guessing that's what that line does...) by referring to their ID.

I can't see any reason why a Forth app couldn't do this. Bear with me for a sec, as a beginner I've not ever written any forth code of my own, but I hope this example makes sense (syntactical and otherwise)

I define a word MAKE-MENU (menuId -- menuId). (There's probably a word somewhere called ADD-TO-MENU which is not featured here!), a word MAKE-FORM (formId -- formId) and a word ADD-TO-FORM (eId formId --)

1000 constant FormId
2000 constant MenuId

\ The following line should create my form at
\ run-time...

MenuId MAKE-MENU FormId MAKE-FORM ADD-TO-FORM

[if that's totally bizarre - remember I'm a total newbie]

I guess it's more of a case of looking at the Palm SDK to find out how to define those words. I just hoped someone might have done it already

By [Jim Hendricks \(Jimh\)](#) on Thursday, February 17, 2000 - 01:11 pm:

If I am correct, you are looking for dynamic resource creation, or if static, resources created from code.

I believe the latest OS's allow for dynamic resource creation for many resources, I don't think all resources are covered though.

Neal's bitmap lib shows how bitmap resources can be created from code, hence also the ability to create dynamic. You can take this the next step and store the dynamic created resource into a resource database (all palm exe's are resource databases) for static access from the same program, or from others since it is now saved.

If you are coming from the Windows programming background, or even Java, the concepts of resources are foreign, resources are a native concept of Mac's. (The palm borrows heavily from the Mac world) Since I am from a Windows background, my first reaction to resources was that I didn't want them, I am too used to coding everything, now I think they are beginning to grow on me.

Hope this helps, Jim

By [martian](#) on Thursday, February 17, 2000 - 02:43 pm:

Cheers, I'll try having a go at the bitmap code

By [Jamie](#) on Thursday, March 2, 2000 - 02:15 pm:

Neal / Trevor;

Neat way of doing a table, but just so I can try to understand just what the advantages are, is there a sample app with the "normal" Palm-style implementation of tables ?

I'm rather new to this whole "stack" thing, (I'm an RPG programmer on an IBM box) but from playing - cutting/pasting apps together - I've been able to muddle through some of the basics...(really basic :^))

By [Trevor Steele](#) on Saturday, March 4, 2000 - 08:01 am:

Hi Jamie

Yes there is an example of a standard table if you follow the thread "Help with tables" (23 January 2000). This shows how a normal table resource is used. However if you attempt to use this version under OS 3.3 it will not work. There appears to be a problem using the callback in this situation.

The code above was written to overcome this problem. If you compare the two sets of code you will see many similarities. I would not like to claim that the code offers any advantages over using the normal table resource other than the fact it runs under OS 3.3. If you have any further questions let me know.

Best regards

Trevor

By [Matthew Blair \(Blair\)](#) on Saturday, March 4, 2000 - 02:45 pm:

Hi Trevor,

Have you or Neal figured out why the tables are having a problem under OS 3.3? Is this a problem specific to QF, or just a problem in general with tables in OS 3.3?

I think that your code does offer advantages over using the "normal" calls in that it appears to be more easily understood :^)

Matthew

By [Trevor Steele](#) on Monday, March 6, 2000 - 12:25 pm:

Hi Matthew

I'm not quite sure why there is a problem under OS 3.3. The problem would appear only to manifest itself when using an item style of customTableItem, which requires the use of a callback to implement it. If an alternative item style is used then the table will work but you have little or no control over how the items are drawn in the cells.

Sorry I can't be more helpful.

Trevor

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Interfacing to C?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Interfacing to C?

By [Kevin Goodman](#) on Monday, January 31, 2000 - 10:45 pm:

Hi -

I'm looking into building a plugin for MagicText (www.synsolutions.com). The C code for this is extremely simple but I'd like to use Forth. I need to create a prc file with a C callable entry point defined as:

```
Err pluginEntryPoint( Word cmd, PluginContextParamsType* pContext );
```

This function cannot use any static variables (presumably because the normal crt0 won't be called to set them up).

Also, I have to compile the code into a CODE resource of type "pCOD" and id "1000", the final PRC needs type "PLUG", creator "SSTa". I figured I could just edit the PRC created by Quartus to get the right type and creator.

When I look at a Quartus generated PRC it seems to produce a bunch of code resources... code 0, data 0, code 1, pref 1, the actual ID given to MakePRC.

What does each of these do?

By [Neal Bridges \(Nbridges\)](#) on Monday, January 31, 2000 - 10:49 pm:

In a stand-alone PRC, the actual app is in the 'p4ap' resource. Code 0 and 1 launch it.

In order to avoid using any static variables, it would be best to create your code resource using the asm68k assembler, the way it's done in the TickHack example sources (in the file area).

Neal

By [Kevin Goodman](#) on Tuesday, February 1, 2000 - 12:33 pm:

Ok - the TickHack example seems to address my resource questions.

What about the Forth to other language interfacing? For example, what if you had wanted your tackHack to be (mostly) written in Forth, with an assembler wrapper?

I.E. What is the calling convention for having assembler set up the Forth environment and call into a Forth function?

Kevin

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 1, 2000 - 01:37 pm:

Hmm. Hacks are a special case, different from the general problem of other-language interfacing.

Forth requires a stack (other than the system stack) and a handful of bytes of dataspace at runtime. In version 2, I'm allowing for launch codes to be handled; that will allow for other-language interfacing. The logic for that *should* be directly applicable to writing hacks, etc. in Forth. I haven't considered that particular special case much yet, though, as I feel that to be as conservative and cautious as possible, HackMaster hacks should be written in assembler. That way, you know exactly how much machine time you're consuming, and what resources you're using.

I'll give it some thought.

Neal

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Maximum code?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Maximum code?

By [Dan Poirier](#) on Monday, January 31, 2000 - 02:18 pm:

I've been happily learning Forth using Quartus by building up an application. Today I find that I can no longer load (compile) the entire thing without getting a Fatal Exception. If I rearrange the order of loading, it seems to fail in different places, but possibly at about the same amount of compiled code? (not sure).

I'm loading a half-dozen libraries plus 4 or 5 memos-worth of my own code by using 'needs' from startup.quartus.

Is there some limit on the amount of compiled code that will fit? Is a Fatal Exception the symptom? Or should I be looking for some other problem?

I'm using a Workpad 20X (Palm-III equivalent) and Quartus 1.2.1U.

Thanks,
--dan p.

By [Neal Bridges \(Nbridges\)](#) on Monday, January 31, 2000 - 02:36 pm:

Hmm, it's unlikely that you've filled the memory. Even if you did, you shouldn't get a fatal exception. You can check it with

```
csunused u.
```

Try doing 'include safe' before loading your code, you may get a more reasonable error message. If it persists, please forward me the code and I'll test it in the lab. Perhaps there's an opportunity to catch the condition and report it.

Neal

By [Dan Poirier](#) on Monday, January 31, 2000 - 02:48 pm:

Ah-ha. After posting my message, I started browsing the older discussion archives and found a similar problem someone else had. Sure enough, 'include safe' pointed out a control structure problem. Though the actual fatal exception didn't occur until some more code was compiled.

What I was doing was

```
begin
  <test one condition> while
  <test another condition> while
  <more code>
```

repeat

which I guess isn't kosher.

By [Neal Bridges \(Nbridges\)](#) on Monday, January 31, 2000 - 04:29 pm:

Correct -- BEGIN/WHILE/REPEAT loops are only allowed one WHILE. You could expand it if you were so inclined, but in that case you'd likely want to just move to cond/thens, or to a CASE/OF/ENDOF structure.

Neal

By [Dave Ruske](#) on Tuesday, February 1, 2000 - 06:39 pm:

Hello. I've been involved in Windows CE application development for the past year or so, and my product team is seeing some opportunities for some products on the Palm platforms. We know that it's a restrictive platform, even compared to CE... and, having some background with Forth, I thought it sounded like a great fit. I'm glad to see someone else did as well!

I do have a concern, however, about using a Forth with a 16-bit dictionary. The last commercial product I wrote using Forth was a Windows 3.1 DDE server using LMI's WinForth. It sounded like a simple enough proposition, but by the time some alternate (and complex) clipboard formats were added, the application grew beyond what WinForth's limited dictionary could handle... even after some tricks with overlays. The experience ended up being quite painful in the end, and when we needed to move to a 32-bit version 32-bit WinForth still hadn't materialized, so the whole thing was rewritten in C++.

Since that time, I've used Forth for the odd in-house troubleshooting job, but have pretty much stuck to C++ for "real" work.

So, since Quartus Forth is 16-bit, I need to ask what my options would be if I hit a wall at some point. Forth may well fit the needs of the day, but what happens tomorrow when the app is expanded and outgrows the dictionary?

I'd love to work with Forth again, and I'm sure I'll be purchasing a copy for those "quick-and-dirty" jobs... but I need to learn a bit more before I'll feel comfortable committing to it for anything substantial.

Any 32-bit on the horizon, or good workarounds for an outgrown dictionary? Other thoughts?

Thanks,
Dave

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 1, 2000 - 06:46 pm:

Quartus Forth is 16-bit, but that isn't a factor in the code-size limit. At present, code size can be as much as one segment (64K); although that would represent a sizeable application, the

plan is to expand to allow multi-segment apps in future versions.

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 1, 2000 - 06:48 pm:

Also, version 2 will support application launch codes, so an alternative would be to split a very large app into several PRCs, and call them as subroutines.

Neal

By [Jim Hendricks \(Jimh\)](#) on Wednesday, February 2, 2000 - 09:06 am:

IMHO, with the limited environment you have on the palm, I rather doubt that outgrowing the dictionary is a concern. If you are outgrowing the dictionary, you are probably developing an app that is more resource intense than the average palm user is willing to give up. Granted, the palm is moving up on resource availability, but I can attest to Neal's diligence in takling each new Palm environment so that those of us on the frontier of the newest Palm devices can leverage the newer resources. Once again IMHO, the space savings of a 16bit dictionary far outweighs the need for expanding into the new devices. This will only change when Palm's routinely come with 32M or more of Ram or possibly other storage options (sub HDD's?). Based on Neal's responses to each new version of the Palm, I feel confident that when the Palm moves up enough in resources to make 16-bit a concern, there will be an alternative.

Jim

By [Dave Ruske](#) on Wednesday, February 2, 2000 - 10:39 am:

Thanks Neal. I really appreciate your quick support on this forum; that alone boosts the value of your development software.

Just a couple more questions. First, since you're compiling to native code, does that mean that primitives get laid down inline and the user's colon definitions get implemented as JSRs? I'm curious here about the degree of inlining and how it affects code size.

Second, are the headers kept in their own segment, or do they share the data segment with variables and such?

Jim, don't get me wrong; I appreciate the advantages of a small, 16-bit Forth. One of the things I'm looking to do, though, is cram more functionality than one would expect into a very limited space. The application is industrial, and if our code monopolized the platform it wouldn't be an issue --- the "average palm user" is not our market. If the application might become constricted by the tool rather than the platform, we must consider whether an alternate tool might be more appropriate.

In programming, as in woodworking, every tool has its appropriate use. Attempt to build furniture using just a hammer, or just a saw, and one quickly becomes frustrated. I don't question the value of QF in my toolbox, I'm just trying to understand whether it makes sense

for this one, admittedly atypical project.

Thanks for the replies!

Dave

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 2, 2000 - 11:06 am:

Some primitives are inlined, some are not; it depends on the size and nature of the primitive. Constants and variable are inlined. Colon definitions are not inlined unless you flag them with `INLINE`.

One simple way to make a very large app with the current version of Quartus Forth is to do as I suggested -- write multiple smaller apps and have them launch one another at the appropriate times. By changing the type of the sub-apps from 'appl' to something else, they can all co-exist together and won't list as individual entities in the Info panel.

Neal

By [Ron Doerfler](#) on Wednesday, February 2, 2000 - 11:27 am:

The only thing about the size limitation of Quartus apps is that unless you are compiling the code to a stand-alone app, every definition in every library memo that you include is compiled. So even if your app uses a fraction of the definitions in the library memos that are included, you can ultimately get codespace-limited when you are developing it unless you create a stand-alone app every time you compile. While you can create new library files with just the definitions you need, it is time-consuming to weed out just what isn't being used (is there a Quartus tool waiting to be written here?). On the other hand, I haven't had any problem since Neal increased the available codespace (which isn't 64K, but about 40K). Oh, and not including `safe.txt` will decrease the size at some loss of error-checking.

I wasn't aware that you could launch sub-apps--this is interesting!

Ron

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 2, 2000 - 11:39 am:

42.5K free codespace, actually -- but of course Quartus Forth functions themselves become part of your stand-alone app, so the codespace is effectively larger.

It *might* be possible to write something to squeeze codespace and eliminate definitions not referenced. I'll think about it.

You can definitely launch sub-apps-- `SysUIAppSwitch` is what you want to dig into. It's a tiny bit tricky to figure out, so I should post an example.

Oh and Dave -- I missed one of your questions. Quartus Forth headers are kept in codespace, not dataspace, and are not kept in a stand-alone app.

Neal

By [Ron Doerfler](#) on Wednesday, February 2, 2000 - 11:55 am:

Neal, if you could post any example of using SysUIAppSwitch at some future point in what must be an extremely hectic schedule, I'd really appreciate it. Meanwhile, I'll look into it as well. Thanks!

Ron

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 2, 2000 - 12:07 pm:

```
\ launchmemo
\ This is a simple script that just launches
\ the MemoPad.
```

```
needs ids
```

```
create DmSearchStateType 16 allot
variable cardnum
2variable localid
```

```
\ Find the MemoPad application:
localid >abs cardnum >abs true
(ID) memo (ID) appl
DmSearchStateType >abs true
DmGetNextDatabaseByTypeCreator throw
```

```
\ Allocate a system-owned dynamic region:
18 constant cmdPBsize
cmdPBsize s>d MemPtrNew 2constant gpt
0 gpt MemPtrSetOwner throw
```

```
\ Launch the app:
gpt 0 localid 2@ cardnum @
SysUIAppSwitch throw
```

Neal

By [Ron Doerfler](#) on Wednesday, February 2, 2000 - 12:19 pm:

WOW! Thanks for the example. I'll try it out. I really appreciate your efforts--it makes this Palm programming puzzle so much more fun and rewarding.

Ron

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 2, 2000 - 12:25 pm:

Glad to help, Ron. That's why the discussion forum is here.

Neal

By [Jim Hendricks \(Jimh\)](#) on Wednesday, February 2, 2000 - 03:09 pm:

Dave,
Thanks for clarifying your target audience, I agree my comments don't fully apply when targetting a captive audience.

I still think though that Quartus is THE development tool for the Palm (Now if we could only get 3Com to make it an official dev tool!)

Jim

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How to access a Window's BitMap

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

How to access a Window's BitMap

By [Markus Biermaier](#) on Monday, January 31, 2000 - 10:42 am:

Hello,

I try to access the bitMap of a Window to be saved in a database.

I've tried the following:

WRITE:

WinSaveBits

Access "displayAddr" of the WindowType struct.

(Info from "Window.h", "WindowNew.h")

Copy to database

READ:

WinSaveBts to create a dummy Window

Read from database to "displayAddr" of dummy Window.

WinRestoreBits

But this doesn't work.

It seems the "READ" part has no effect.

What means the comment in WindowNew.h:

`VoidPtr displayAddrV20; // use the drawing functions instead`

There is a function "WinDrawBitmap" but no function "WinGetBitmap" or so.

Any help available?

Markus Biermaier

By [Neal Bridges \(Nbridges\)](#) on Monday, January 31, 2000 - 01:38 pm:

I've done this with some success: when saving the window data, save it with a bitmap header in front of it, making sure that the length and width and compression mode are specified correctly in that header. Then you can simply re-draw it where you wish as a bitmap.

Neal

By [Markus Biermaier](#) on Monday, January 31, 2000 - 03:04 pm:

**Thanks for your fast response.
I'll try it.**

Markus Biermaier

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Newbie Question - Changing field attributes

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Newbie Question - Changing field attributes

By [Mark Lawson](#) on Monday, January 31, 2000 - 10:41 am:

Hi, I'm creeping along with QF - a very interesting system, but I've come across a problem. How do I send a FieldType structure to FldSetAttributes (a 'structure' to anything in fact). What I'm trying to do is turn the underlines on/off in an edit field.

Appreciate the help :-)

Mark

By [Neal Bridges \(Nbridges\)](#) on Monday, January 31, 2000 - 01:36 pm:

To pass a structure, you need to pass the 32-bit address of an area of memory. Here's a FldSetAttributes example that simply gets and sets the attributes of a field without making changes:

```
needs fields
```

```
variable attr
```

```
attr >abs somefieldid GetObjectPtr FldGetAttributes
```

```
attr >abs somefieldid GetObjectPtr FldSetAttributes
```

Neal

By [Erwin Schomburg](#) on Tuesday, February 1, 2000 - 03:35 am:

Just a note: PalmOS documentation says that field attributes settings only get actuated if the call to FldSetAttributes is followed by a call to FldDrawField.

/Erwin

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Enum question

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Enum question

By [Kevin Goodman](#) on Sunday, January 30, 2000 - 10:04 pm:

Can anyone explain why this code doesn't work?

```
>0 enum ETapMode
> ETapMode eNone
> ETapMode eSketch
>...etc...
>
>eNone variable tapMode
>
>: check-sanity
> tapMode eNone = if
> ." cool"
> . else
> ." barf"
> then
>;
```

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 30, 2000 - 10:16 pm:

It should be

```
eNone constant tapMode
```

or else

```
variable tapMode
```

```
eNone tapMode !
```

```
: check-sanity
```

```
  tapMode @ eNone = if
```

```
...
```

Neal

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POSE for Visor now available

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

POSE for Visor now available

By **[Winchell Chung](#)** on Sunday, January 30, 2000 - 01:32 pm:

Palm OS Emulator 3.0a4 is now available at
<http://www.palm.com/devzone/pose/seed.html>

It supports the Handspring Visor. Or it does a good job of faking it. I have it on my Windows95 machine. It downloaded my Visor's ROMS just fine, and now it is happily running Quartus Forth in emulation.

I am unsure if you have to sign up for their developer program or not. I did.

It sure is spooky seeing a large image of a blue Visor on your monitor, running your Quartus app!

By **[Bill Marcy](#)** on Sunday, January 30, 2000 - 08:49 pm:

Problem is, it does not support USB.

They are promising it soon now.

By **[John Oliver](#)** on Monday, February 7, 2000 - 04:13 pm:

So Winchell, can we get a copy of your ROM code?

By **[Neal Bridges \(Nbridges\)](#)** on Monday, February 7, 2000 - 04:28 pm:

Just so Handspring and/or 3Com's lawyers don't send me a nasty letter, it might be best not to use this forum as a medium of exchange for such controlled substances. :)

Neal

By **[John Oliver](#)** on Tuesday, February 8, 2000 - 09:44 pm:

I was afraid that was the problem ... we ordered a serial cradle today so we should be able to suck our own ROMs next week.

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Palm OS 3.5

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Palm OS 3.5](#)

By [Jim Meadows](#) on Sunday, January 30, 2000 - 01:15 am:

I am experiencing problems with Quartus and RsrcEdit when trying to use the new color Palm OS 3.5. I have tried both 3.0a3 and 3.0a4 of the emulators. RsrcEdit gets a bus error when I try to run it. Any suggestions?

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 30, 2000 - 10:38 am:

What version of RsrcEdit are you using, Jim? I've successfully tested RsrcEdit 1.007 against OS 3.5a.

Neal

By [Jim Meadows](#) on Wednesday, February 2, 2000 - 03:42 pm:

I'm using v1.007 ... any suggestions??

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 2, 2000 - 03:59 pm:

I suggest you document exactly your problem, and let Roger at Individeo know -- he'll want to fix it I'm sure.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 8, 2000 - 09:15 am:

As a point of interest -- I'm pleased to note that the new color module, *color.txt* works well with OS 3.5, you can change colors on the emulated color device with it without any difficulty.

```
needs color
```

```
228 120 3 color: mandarin_orange
mandarin_orange foreground
```

You can also use HTML-style hex strings for color:

```
needs color
```

```
(hex) E47833. 2constant mandarin_orange
mandarin_orange foreground
```

Neal

By [Douglas Atique](#) on Wednesday, February 9, 2000 - 12:43 pm:

What do you guys mean by color? Can I upgrade my Palm V to Palm OS 3.5 and get a color display?

By [Matthew Blair \(Blair\)](#) on Wednesday, February 9, 2000 - 12:57 pm:

No. You will have to buy a new Palm (the IIIc, I think) to see color. However, OS 3.5 is supposed to have a number of improvements in terms of user interface for the rest of us :^)

If you go to the development zone at www.palm.com, you may be able to find more details.

Matthew

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 02:01 pm:

I found a bug in *color.txt* -- specifically in *get-colors*. The fixed version is [here](#).

Neal

By [Jim Hendricks \(Jimh\)](#) on Wednesday, March 15, 2000 - 02:15 pm:

Neal, how's about adding

```
:grayscale16 ( -- ) 4 color-depth ;
```

Jim

By [Jim Hendricks \(Jimh\)](#) on Wednesday, March 15, 2000 - 02:16 pm:

whoops, make the word grayscale16

Jim

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 02:52 pm:

Next pass, I think. I'll also want to add color-depth? and max-color-depth.

Neal

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Testing for the existence of a database

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Testing for the existence of a database

By [Alfred Salton](#) on Friday, January 28, 2000 - 12:18 pm:

Can anyone explain how one might test for the existence of a database prior to creating a new one? The requirement is for a program initialization routine that only creates a new database (as a data repository) if one does not exist.

Can catch and throw be used for this?

By [Matthew Blair \(Blair\)](#) on Friday, January 28, 2000 - 12:34 pm:

Alfred,

You can use `DmFindDatabase` to determine if the database currently exists. If the database cannot be found, then the function returns a double-cell 0. Something like the following:

```
dbExist? ( z-addr -- flag )
\ z-addr is the address of a
\ null-terminated database name
\ See zstrings
>abs 0 ( using card number 0 )
DmFindDatabase
\ return false if not exist
or 0= 0= ;
```

Hope this helps,

Matt

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Double-cell math operators

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Double-cell math operators](#)

By [Matthew Blair \(Blair\)](#) on Friday, January 28, 2000 - 08:22 am:

Some questions have come up while trying to use fixed-point math in my application. I've adopted the convention that all numbers have 3 decimal digits precision, and are all positive. From that, I've convinced myself (wrongly, I'm sure) that I need to use double cells to represent the numbers.

First question: I've seen the operators that perform addition and subtraction of two double-cell numbers. However, I have not seen multiplication and division operators for two double-cell numbers. Do they exist?

Second question: If I wanted to implement an unsigned double-cell {addition, subtraction, multiplication, division} that acted on two double-cell numbers, how could I do that?

Thanks,

Matt

By [Neal Bridges \(Nbridges\)](#) on Friday, January 28, 2000 - 08:29 am:

If you used single-cell values and wanted three places of precision, your largest value would be 65.000. Double numbers will give you a maximum value of 4294967.000.

Have a look at *dblmath.txt* for division and multiplication of double numbers. Addition and subtraction are already available.

Neal

By [Matthew Blair \(Blair\)](#) on Friday, January 28, 2000 - 08:51 am:

Hi Neal,

For single-cell values, there are arithmetic operators that treat the cell as an unsigned value, giving as you say, a largest value of 65.000. However, for double-cells, there does not appear to be arithmetic operators that treat the double-cell as an unsigned value. So wouldn't the maximum value be half of 4294967.000?

In *dblmath.txt* I see the `ud/mod` function, but no words for multiplication. I'm probably being daft here, but how would I do the multiplication?

Thanks,

Matt

By [Neal Bridges \(Nbridges\)](#) on Friday, January 28, 2000 - 09:01 am:

A Quartus Forth user wrote a UD* some time back; I shall search for it for you.

Unsigned and signed addition and subtraction are the same operation.

Neal

By [Neal Bridges \(Nbridges\)](#) on Friday, January 28, 2000 - 09:05 am:

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

By [Matthew Blair \(Blair\)](#) on Friday, January 28, 2000 - 09:24 am:

Thanks Neal. By the way, in comparing the `d*` word from Carl and the `ud\mod` word in *dblmath.txt*, I note that the `d*` word requires fewer operations. I know that I'm comparing apples and oranges here, but is the difference in size due to the fact that the `ud\mod` is treating the double-cell as an unsigned number?

Also, I'm a little curious about how the `d*` function works.

```
>R >R 2DUP ( d1h d1l d1h d1l ) ( R: d2l d2h )
R> ( d1h d1l d1h d1l d2h ) ( R: d2l )
```

where h and l refer to high byte and low byte. Probably not the correct term, but hey, I'm still a newbie :^)

Here's where I get confused. Why is the low byte of the first double-cell and the high byte of the next double cell combined for the `M*/` operation?

Thanks,

Matt

By [Neal Bridges \(Nbridges\)](#) on Friday, January 28, 2000 - 09:53 am:

UD/MOD is a bit larger because it is performing a division, and also calculating a remainder.

As for the combination of the products, it's as though you were doing a multiplication by hand:

```

23
42
----
46
92
----
966

```

Here, our 'high-cell' and 'low-cell' are the two digits of our decimal numbers, but the principle is the same.

Neal

By [Matthew Blair \(Blair\)](#) on Friday, January 28, 2000 - 10:37 am:

After working my way through the routine, I see now the mechanics as you described above. I guess what I don't understand is why you can treat the 'high-cell' and 'low-cell' as two separate digits. Could you please explain?

Matt

By [Neal Bridges \(Nbridges\)](#) on Friday, January 28, 2000 - 10:46 am:

In the same way you can take the decimal number '23' and treat it as a high-digit '2' and a low digit '3', you can take a double-cell number:

```

hex
12345678.

```

and treat it as two 16-bit 'digits':

```

.s -> 5678 1234

```

where 1234 is the high-digit, and 5678 is the low-digit.

Neal

By [Ron Doerfler](#) on Friday, January 28, 2000 - 11:00 am:

However, it turns out that the d* routine that was given earlier will not work with negative d2 because of the bit-flipping of a negative number (i.e., when you're working with the low word, it doesn't know that the high word indicates that the whole double is the two's complement). So I wrote a different one based on that one, where the doubles are both made positive and then the result is negated after the operation if needed:

```

needs double
needs dblmath

```

```
: dd+ddsign  
(d1. d2. -- +d1. +d2. negflag )  
2over 2over d0< rot rot d0< xor >r  
2swap dabs 2swap dabs r> ;
```

```
: d* ( d1. d2. -- d1*d2. )  
dd>+ddsign >r  
>r >r 2dup  
r> dm* 2swap  
r> dm* drop 0 swap d+  
r> if dnegate then ;
```

```
: d/ (d1. d2. -- d1./d2. )  
dd>+ddsign >r  
ud/mod 2swap 2drop  
r> if dnegate then ;
```

Not very elegant, but it works.

Ron

By [Matthew Blair \(Blair\)](#) on Friday, January 28, 2000 - 11:00 am:

Got it. Thanks for the patient explanation!

Matt

By [Neal Bridges \(Nbridges\)](#) on Friday, January 28, 2000 - 11:00 am:

Ah, that was what I was searching for Ron. Thanks!

Neal

By [Ron Doerfler](#) on Friday, January 28, 2000 - 11:04 am:

Well, I quadruple-checked this code since I had to type it in by hand from my PalmPilot (I'm remote from my computer), but nonetheless I see that the first definition should be for "dd>+ddsign" rather than "dd+ddsign".

Ron

By [Neal Bridges \(Nbridges\)](#) on Friday, January 28, 2000 - 03:35 pm:

I might be inclined to call that function "extract-signs" or similar, rather than something like "dd>+ddsign".

Neal

By [Matthew Blair \(Blair\)](#) on Sunday, January 30, 2000 - 03:04 pm:

Another dumb question...

Is there another way to perform division on two fixed-point numbers than the following?

d_1 , d_2 are two double-cell fixed-point numbers with 4 decimal places precision. Then $d_1/d_2 = (d_1 * 10000)/d_2$.

It seems that this method further limits the range of precision since the multiplication operation may push d_1 out of the range of representable numbers.

Thanks for your help,

Matthew

By [Neal Bridges \(Nbridges\)](#) on Monday, January 31, 2000 - 09:22 am:

$M^*/$ produces an intermediate triple-cell result when dividing a double by a single cell.

It's possible to do the same thing with two doubles: expand $d/$ into $d^*/$ so that you multiply the first double by a given factor, producing a triple-cell value, and then divide the triple-cell value by the second double.

Neal

By [Matthew Blair \(Blair\)](#) on Monday, January 31, 2000 - 12:24 pm:

Hi Neal,

After I wrote my post, I realized the same thing -- that I was asking for a double-cell version of $M^*/$. As it turned out, however, the denominator is the difference of two double-cells, and can be very reasonably expected to fit into a single-cell with one decimal digit precision. So, I ended up using $M^*/$ anyway.

However, I did not reach this point without thinking about how to do a $d^*/$. From our earlier discussions in this thread, I know how to do the first stage, namely, multiplication of two doubles into a triple-cell value. I have no idea, though, on how to divide a triple-cell by a double-cell. I'm guessing, again from our earlier discussions, that I could do a long division treating each cell as a "digit", but this is probably a poor way to do it.

Thanks,

Matthew

By [Neal Bridges \(Nbridges\)](#) on Monday, January 31, 2000 - 07:52 pm:

Long division is one way to handle it. The other is using a shift-and-subtract algorithm, such as

is done in `ud/mod` in `dblmath.txt`.

Neal

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Numeric Fields: How To Accept Negative Numbers?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Numeric Fields: How To Accept Negative Numbers?

By [Barry Ekstrand](#) on Thursday, January 27, 2000 - 12:21 pm:

I want to allow the input of negative numbers in an app I am starting. I can't seem to get RsrcEdit to allow this - I get the error beep when using the "-" sign just as if it were a letter. What is the proper way to set up a field to be numeric only but to allow both positive and negative values to be entered in it?

Barry Ekstrand

By [Neal Bridges \(Nbridges\)](#) on Thursday, January 27, 2000 - 12:41 pm:

The 'numeric only' setting for fields is limiting, and as you say does not permit '-'. My first suggestion is to leave the field alpha-numeric, and replace all invalid characters with 0 before parsing.

My second suggestion: it's tricky, but you could set up an event loop that would watch all keystroke events for that field, and ignore those that aren't valid numeric entry characters.

Neal

By [Barry Ekstrand](#) on Thursday, January 27, 2000 - 02:00 pm:

Okay, the former suggestion sounds like it is the easiest to implement and I'll pursue that. Just to make sure I understand correctly, the situation is PalmOS-oriented rather than RsrcEdit oriented?

Barry

By [Neal Bridges \(Nbridges\)](#) on Thursday, January 27, 2000 - 02:13 pm:

Yes that's right. The 'numeric' flag was present but ignored in the earliest versions of the Palm OS; now that it is not ignored, it is somewhat limiting.

Instead of '0', you might replace non-nums with blank spaces -- you'll have to decide what suits your application better.

Neal

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Stupid one : 32 bits pointers

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Stupid one : 32 bits pointers](#)

By [Marc](#) on Wednesday, January 26, 2000 - 05:35 pm:

Just a stupid question, why does Forth uses 16 bits interger instead of 32 ? Does that make such a difference ?

Just wondering after all the discussion about allocate and (allocate), 32bits would seem a better choice.

Marc.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, January 26, 2000 - 05:55 pm:

Quartus Forth has a 16-bit-wide stack for several reasons:

- The big reason: the PalmOS ROM routines expect a mixture of 16-bit and 32-bit parameter calls; a 32-bit stack would mean many arguments would have to be massaged before making ROM calls, which would slow down ROM function access significantly
- the use of 16-bit offsets means generated code is automatically position-independant, without any need for a relocating loader
- generated code size is smaller with 16-bit literal values

Neal

By [Marc](#) on Thursday, January 27, 2000 - 05:45 am:

Thanks for the answer.

By [Neal Bridges \(Nbridges\)](#) on Thursday, January 27, 2000 - 02:15 pm:

No problem. FYI, the daVinci version of Quartus Forth is in fact 32-bit, as all ROM function arguments on the daVinci are 32 bits wide.

Neal

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Font Definition / Old OS Crash

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Font Definition / Old OS Crash

By [Barry Ekstrand](#) on Wednesday, January 26, 2000 - 04:27 pm:

I posted that I was having a problem with a program that ran fine under OS 3.0 but had a glitch with OS 2.0 and OS 1.0. When testing the app in POSE, under OS 2.0 or OS 1.0, the program would crash immediately. The gremlin report told me it happened "at 0 of 1000000", and that the program has performed an illegal operation - it has performed a "bus error".

I was unable to determine the source of my problem, and both Erwin and Neal offered to help me figure it out, with Erwin doing so in record time. I wanted to post the end result so other newbies could avoid my problem.

The glitch was this: on a couple of forms in my resource file, I had not set which font to use on a label. I actually missed this once and then replicated the error by copying the form over to the next one that I needed. Anyway, it seems that OS3.0 forgave my oversight and these machines had no trouble running the program but OS1.0 and OS2.0 systems crashed immediately. Once the font was defined for these labels and the program recompiled, it works like a charm on the old OS systems.

Special thanks to Neal and Erwin both for their continued support and assistance, without which I would still be stuck in one of many traps that I built for myself. Gentlemen, I appreciate your help very much.

Regards,

Barry Ekstrand

By [Neal Bridges \(Nbridges\)](#) on Wednesday, January 26, 2000 - 06:04 pm:

Hi Barry. Glad it's working -- I watched the saga unfold but haven't had much chance to comment. It's good to kill bugs. :)

Neal

By [Wade Carlson](#) on Wednesday, January 26, 2000 - 11:35 pm:

I am glad to see that I am not the only one who gets frustrated by Gremlins. I find it very difficult to figure out where the bug is originating. Are people typically making it to a million gremlins without problems? I know you can try to look in the log file generated, but I find them very unhelpful. I am curious as to what Erwin did to figure out your problem (other than just sitting down and going through your code by brute force). Sometimes I wonder if I was better off before I discovered the POSE emulator.....

By [Erwin Schomburg](#) on Thursday, January 27, 2000 - 12:57 am:

No brute force, no thanks, I have a life. Its always easier to debug from outside and POSE did help, it told me that it didn't come to do anything more informative. So the fault must have been very very early in the code, if not outside it. Really no big deal.

May the Forth be with you!

/Erwin

(fading Dr Jekyll, Mr Hyde now onstage)

Arrrg, no good false modesty aside: OK, I admit I'm an excellent bughunter and troubleshooter, its all intuitive and you can't learn it. But you may or may not at some time begin to read the hints your experience tries to pop into your concious brain.

8-)

By [Neal Bridges \(Nbridges\)](#) on Thursday, January 27, 2000 - 08:46 am:

Sometimes you can hit lucky with experience, but for the tough ones I still divide-and-conquer. A few iterations of dividing the code in half and re-testing will locate the origin of nearly any problem.

Neal

By [Barry Ekstrand](#) on Thursday, January 27, 2000 - 12:12 pm:

I did try that approach in this particular case, obviously without success. The big lesson learned for me was that the form itself, which looked good in OS3.0, needs to be revisited in the debugging process. I had focused solely on my code, which *ahem* was clean. :) (No comments about spaghetti allowed, Erwin!).

I suspect Erwin is mostly right about intuition and becoming a good debugger. I say mostly because even those with good intuition need to have experience to learn from, as he alludes to. So hope remains for us novices - and that was the purpose of posting this one, so we can all learn from it. Thanks again for the tips and direction.

Barry Ekstrand

By [Neal Bridges \(Nbridges\)](#) on Thursday, January 27, 2000 - 12:19 pm:

That's tricky, when the problem isn't even in the code itself. One step I'd take is to test the algorithm in isolation of the interface, and the interface in isolation of the algorithm, thereby identifying whether the problem is in your code, or outside of it.

Intuition does play a role, and you get a better feel for it with time. I'm glad the solution was found!

Neal

By [Wade Carlson](#) on Friday, January 28, 2000 - 01:11 am:

The only problem I have with 'dividing-and-conquering' my code is that it already runs to about 35,000 events, taking about 15 minutes before it will 'crash'. Therefore, with each 'dissection' taking 15-20 minutes, this soon leads up to an extraodinate amount of time!

By [Marc](#) on Friday, January 28, 2000 - 03:36 am:

I usually use more the approach of sanity check, before the divide and conquer. When debugging I am a heavy user of

0 0 at s" here" type cr .s key drop

sequence.

Another one I come to use is the throw, I create some sanity check function that I can place anywhere in the code and that will throw an exception. Then look at the exception and you know what kind of problem you are at.

Then dig dig, divide, dig, print ... but you know that one I guess :-))))

An yes I reconized that intuition is playing a big part in that. Letting the problem cool down helps also.

Marc

By [Neal Bridges \(Nbridges\)](#) on Friday, January 28, 2000 - 08:25 am:

Wade, in a situation where I had an app that passed 35000 gremlins and then failed, I'd try several things:

- 1) Try to find a gremlin sequence that failed earlier.
- 2) Generate a gremlins log to see what sort of event is causing the failure.
- 3) Compile with generate-symbols, and run the emulator with a debugger under it. (I use Debuffer). Then on failure, debug and do a stack trace to see what function is failing.

When writing a large app, another good plan is to gremlin test it each night before bed, let it run through the night. Then you're repeatedly testing as you go, and much less likely to find yourself with a large app with an hidden bug.

Neal

By [Trevor Steele](#) on Tuesday, February 1, 2000 - 05:31 am:

Neal

Thanks for the pointers about debugging. Where can one obtain Debuffer? My app currently runs to over 160,000 gremlins before crashing and it's proving somewhat troublesome to

debug as a result.

Best regards

Trevor

PS I've re-written my table code to avoid the use of a callback and it now runs under OS 3.3. I'll post the code as soon as I get a chance.

By [Neal Bridges \(Nbridges\)](#) on Friday, February 4, 2000 - 01:30 pm:

Debuffer is at <http://www.pagesz.net/~sessoms/debuffer/>

Neal

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Cool code editing hack

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Cool code editing hack](#)

By **[Kevin Goodman](#)** on Wednesday, January 26, 2000 - 12:44 am:

Check out this hack called EEdit - it does a couple things that are tres cool for code editing:

(1) really slick drag/drop move/copy

(2) multi-line, code templates, for fast entry. For example, you could keep this template:

```
>struct  
> 1 cell field x  
>end-struct xType
```

(3) a bunch of other cool stuff that's not a big deal for coding

<http://www.evscl.com/download/eedit.zip>

By **[Wade Carlson](#)** on Wednesday, January 26, 2000 - 02:06 am:

Except for one problem that I had with EVEedit.... When running compiled Forth apps with Fields in it and using the string>Field and Field>string command, it runs VERY SLOW! (?maybe has to do with FlushQueue? I'm not sure, I didn't really bother to look into it)
EVEedit also seems to crash every once in a while. Other than that, I guess it's okay...

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What's Forth's equivalent of CRT0 do?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

What's Forth's equivalent of CRT0 do?

By [goodmank](#) on Tuesday, January 25, 2000 - 08:15 am:

Alot of OS interfacing + magic must happen before my program's main gets called by Quartus Forth.

Is there docs somewhere that describe Quarus' equivalent of crt0?

For example, what happens to the PalmOS launch codes?

Kevin

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 25, 2000 - 08:27 am:

The launch codes are absorbed in version 1 apps. Version 2 will support launch code handling.

The startup sequence is documented in the manual -- "Startup and Termination Sequences".

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 25, 2000 - 08:29 am:

Hmm, thinking about it -- the manual documents the Quartus Forth startup, but not specifically the stand-alone app startup.

Stand-alone apps do a very similar startup, but don't load any specific form -- that's left up to you.

Neal

By [Kevin Goodman](#) on Tuesday, January 25, 2000 - 01:41 pm:

Yep, stand-alone start up was what I was wondering about. But ok, basically, the only thing my program can't do is check the launch code and flags.

No problemo.

The only reason I ask is that I'm working through the Palm OS Prog Companion.

BTW, have an ETA on 2.0?

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 25, 2000 - 02:05 pm:

I love ETAs, the whizzing sound they make as they go by. I'll say "soon" and leave it at that. :)

Neal

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Using the Event structure

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Using the Event structure

By [goodmank](#) on Monday, January 24, 2000 - 11:52 pm:

The "Events" library file contains the following 2 ways of accessing fields in an event structure:

```
>  
>event 2 cells + constant coords  
>: coords@ coords 2@ ; inline  
>  
>: itemid 8 m+ @a ;  
>
```

If I understand this right, coords uses 16 bit addressing (because + deals in 16 bit quantities) and itemid uses 32 bit addressing.

Come to think of it: isn't the 68k a 32-bit machine? Where are these 16 bit addresses coming from at all? As a rule of thumb, when should I expect to need to use a 32 bit versus 16 bit address?

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 25, 2000 - 12:04 am:

Addresses accessed within the Quartus Forth dataspace are relative 16-bit addresses. This allows the dataspace to be relocated anywhere by the Palm OS when your app starts, and no code changes are required; it keeps the application position-independant.

itemid was originally designed for use in callbacks (a handling method no longer required for most purposes) and thus assumed a 32-bit event address. You can easily recode it for 16-bit use as required.

Neal

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Displaying/manipulating strings in console mode

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
Displaying/manipulating strings in console mode

By [Alan Bowen](#) on Monday, January 24, 2000 - 11:10 pm:

Hi everybody! I'm a new Forth programmer trying to feed my newest addiction. I'm experimenting with the POSE trying to do some simple database stuff and I'd like to retrieve a record from a given database and then just display the record contents on the console.

Even simpler, I'd just like to:

1. store an arbitrary string in a variable
2. print the contents of variables containing strings ('type' always blows up on me so I know I'm doing something wrong) to the console

I've tried things such as:

```
create name 10 allot  
s" test" 2r> name ! type
```

Oh, I've got a few Forth books on order and I've scoured the Internet for tutorials. Thanks in advance.

By [Neal Bridges \(Nbridges\)](#) on Monday, January 24, 2000 - 11:15 pm:

For string literals, simplest is this:

```
: mystring s" This is my string" ;
```

To print it,

```
mystring type
```

Neal

By [Neal Bridges \(Nbridges\)](#) on Monday, January 24, 2000 - 11:18 pm:

Also:

```
: mystring s" This is another string" ;
```

```
2variable stringvar
```

```
mystring stringvar 2!
```

```
stringvar 2@ type
```

Neal

By [Alan Bowen](#) on Monday, January 24, 2000 - 11:34 pm:

Well, I am humbled. I can see how far off I was in my attempts. The only way to push a string pointer and length on the stack is to define a word? Or is that a difference between the interpreter and compiler?

Thinking down the road, I suppose that retrieving info from a Palm database will already push these values onto the stack and manipulating them becomes easier.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 25, 2000 - 12:06 am:

If you first do

needs file

you can then (at the console) do

s" hello" type

and it'll print 'hello'. However, the simplest way to make a named string literal is to do as I showed previously.

Neal

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Using Palm OS defined data structures

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Using Palm OS defined data structures

By [goodmank](#) on Monday, January 24, 2000 - 09:39 pm:

What is a Forth "best practice" to extract elements out of a Palm OS defined data structure (such as an Event)? The itemid function in Neal's Events library hardcodes numeric offsets into the C structs. Then there is the "struct" library in Quartus Forth - I guess I could create a struct for each of these. But I have yet to see sample code that really makes use of this.

What would you Forth experts out there do?

By [Neal Bridges \(Nbridges\)](#) on Monday, January 24, 2000 - 09:43 pm:

I've never needed more than a couple of specific offsets for any given app, so I tend to just make constants or hard-code the offsets into my apps. If you do want to go to the trouble of using structs, search for the lengthy example I posted a couple of weeks back.

Neal

By [Kevin Goodman](#) on Tuesday, January 25, 2000 - 08:18 am:

Hi Neal - thanks for the reply. I must be blind but after a search for "struct" I couldn't find the lengthy example from a couple weeks back.

Do you mind being more specific?

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 25, 2000 - 08:32 am:

Here it is:

[Message showing event struct with unions](#)

Neal

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Cool QForth/Palm documents tip

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Cool QForth/Palm documents tip](#)

By [goodmank](#) on Monday, January 24, 2000 - 09:23 pm:

Thought I'd share a cool thing I just did...

Using iSilo, I was able to convert to PDB format not only the Quartus Forth html docs but the ENTIRE html version of the PalmOS reference manual (total ~900KB).

Very handy!

p.s. AvantGo would probably do this for you too, but it wouldn't be nearly as small.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 25, 2000 - 01:23 pm:

Groovy -- good to have those on-hand.

Neal

By [Erwin Schomburg](#) on Wednesday, January 26, 2000 - 12:23 am:

Do not try this for the web version of the OS reference, you'll need to download the local web version and convert, else you might end up with all of Palm's site compressed to iSilo format (a week later...)

/Erwin

By [Kristopher Johnson](#) on Thursday, January 27, 2000 - 07:48 am:

FYI, the ANS Forth standard in iSilo format is about 315K.

- Kris

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How to do dynamic arrays?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

How to do dynamic arrays?

By [Winchell Chung](#) on Monday, January 24, 2000 - 09:14 pm:

Stupid newbie question alert...

(I should be able to figure this out, but nothing I try seems to work)

My application needs a dynamic data structure, that is, the number of instances of my struct is unknown at compile time, and may change during program execution.

If I was programming in C++, I'd make my structs as instances of some kind of object, and use "new" to manufacture them as needed. Then I'd store them in a linked list.

How to do this in Forth is non-obvious.

(if indeed this is the optimal way to solve this problem in Forth)

But anyway:

[1] How do you allocate a new "object" under program control? (that is, without having to give it a name)

[2] Can anybody point me at documentation on how to implement a linked list in forth?

thanks in advance!

By [Michael Rowe](#) on Tuesday, January 25, 2000 - 02:16 am:

I have made extensive use of linked lists in forth, allocating nodes from the heap. Thus far, I have used short pointers, for economy reasons, using the forth "allocate" routine. This has caused a minor problem, in that short pointers are not currently dependable, but it does not appear to be too difficult to fix this problem.

You can also use long pointers if you wish, via the forth "(allocate)" routine, but I find that the storage overhead and resulting awkward stack signatures when using long pointers to list nodes to be a disadvantage.

// mrr

By [Winchell Chung](#) on Tuesday, January 25, 2000 - 10:14 am:

Aha! Allocate! That's the word I was looking for.

It's my own fault. I should stop reading my ancient copy of STARTING FORTH and get something more up to date.

Like that copy of the ANSI Forth standard thoughtfully included with every copy of Quartus.

By [Marc](#) on Wednesday, January 26, 2000 - 05:20 pm:

Quick question, I understand that allocate will increase some heap pointer to allocate the memory. Thus make any allocated memory contiguous to the previous. Now

a) how do you unallocate memory

b) is this memory space really a heap or more stack, ie: can you free any chunk of memory

and make it available for the next allocate.

Side question, how can I know how much memory is available for the next allocate.

Marc

By [Neal Bridges \(Nbridges\)](#) on Wednesday, January 26, 2000 - 06:00 pm:

ALLOCATE doesn't increase a heap pointer, as such, nor are the memory regions returned guaranteed to be contiguous.

A region returned by ALLOCATE can be freed by FREE.

To determine how much memory is available, look at the Quartus Forth word MEM. If you need a lot of space, consider (allocate) rather than ALLOCATE.

Neal

By [Winchell Chung](#) on Friday, January 28, 2000 - 12:42 pm:

This is the linked list code I'm playing with, modified from a Mr. Wil Baden, from comp.lang.forth.

I'm adding my data to each node by calling new-node, then using the "comma" word to insert the data cell by cell.

```
\ linkedList 01/25/00 WDC
\ from Wil Baden
\ First cell of a node contains delta
\ Node address + delta = address
\ of next node.
```

needs toolkit

```
: NODE! ( addNode parentNode -- )
\ make parentNode point to addNode
>r
dup if r@ - then
  r> !
;

: NODE@ ( node -- nextNode )
\ fetch next node after this node
dup @
dup if + else nip then
;
```

```

: NEW-NODE ( -- addr )
  align here 0 ,
;

: LINK-NODE
( newNode parentNode -- )
\ inserts newNode after parentNode.
\ parentNode pointed at newNode.
\ newNode pointed at former child
\ of parentNode.
  2dup node@ swap node! node!
;

: ADD-NODE-AFTER-THIS
( parentNode -- )
\ create new node and add it after
\ parentNode
  NEW-NODE swap LINK-NODE
;

: PRUNE-NODES ( lo hi head -- )
\ remove nodes that are within
\ range. Range can be a single node.
\ Does not free memory from
\ deleted nodes.
  rot rot 2>r
  begin
    dup node@
    dup while
      dup 2r@ within if
        node@ over node!
      else
        nip
      then
    repeat
      2drop
      2r> 2drop
  ;

```

By [Winchell Chung](#) on Friday, January 28, 2000 - 12:57 pm:

Here is an example of use of the linked list

```

\ example of use
\ ogreCounters 01/25/00 WDC

```

```

needs linkedList
needs memory
needs struct

\ constants
0 enum TypeIndex
TypeIndex CPIndex
TypeIndex GEVIndex

\ variables
\ top of linked list
\ (empty node, no data within )
variable counterHead

struct
\ first cell MUST be a space for
\ the linked list pointer. Don't alter
\ it unless you know what you are
\ doing
1 cells field nextNode \ linked list ptr
\ The rest is the data you want to store
\ in the node.
    1 cells field unitType
    1 cells field owner
    1 cells field locX
    1 cells field locY
    1 cells field disabled?
end-struct counterNode
counterNode currentNode

\ variable init
\ create the top of the linked list
new-node counterHead !

: addCounter ( counterNode -- )
\ create a new node
    new-node swap
\ manually add the data after
\ the new node.
\ This must be exactly like the
\ struct has it.
\ There has got to be a better way to do this.
    dup unitType @ ,
    dup owner @ ,
    dup locX @ ,
    dup locY @ ,

```

```

    disabled? @ ,
\ insert the node into the
\ linked list
    counterHead @ link-node
;

\ this adds a node at compile time.
\ the currentNode struct is initialized
\ with the desire data, then
\ passed to addCounter
GEVIndex currentNode unitType !
player1 currentNode owner !
2 currentNode locX !
2 currentNode locY !
FALSE currentNode disabled? !
currentNode addCounter

CPIndex currentNode unitType !
player1 currentNode owner !
3 currentNode locX !
3 currentNode locY !
FALSE currentNode disabled? !
currentNode addCounter

=====
\ sample code that iterates through
\ the linked list
variable counterX
variable counterY
: drawCounters
    counterHead @
    begin
    node@
    dup while
\ use the field words of the
\ struct to access
\ the data in the node
    dup locX @ counterX !
    dup locY @ counterY !
    \ do something here

\ make sure you leave the
\ node on the stack to give
\ the "node@" at the beginning
\ something to work with
repeat

```

```
drop
```

```
;
```

By [Winchell Chung](#) on Friday, January 28, 2000 - 03:41 pm:

Wow! That was easy! I just added an "iterate" word to the linked list library. All you need is the magic of vectored execution. Forth is too cool, it makes light work of so many things.

When you want to examine each element of a linked list in turn, and wish to do something with each item:

[1] write a word that will take one node of the list on the stack, do whatever you wish to do, and ensure that the node is still on the stack when the word exits.

[2] Point the variable iterateCallbackPtr at the word.

If not within a colon definition do

```
' myword iterateCallbackPtr !
```

If within a colon definition, do

```
['] myword iterateCallbackPtr !
```

[3] Push the head of the list on the stack and call ITERATE-LIST

```
variable iterateCallbackPtr
: NULL-ITERATE ( node -- node )
;

' NULL-ITERATE iterateCallbackPtr !

: ITERATE-LIST ( listHead -- )
  @
  begin
    node@
    dup while
      iterateCallbackPtr @ execute
    repeat
  drop
;
```

```
=====
```

```
\ sample code:
needs linkedlist
```

```
variable counterX
variable counterY
: draw1Counter ( node -- node )
```

```
dup locX @ counterX !  
dup locY @ counterY !  
  \ do something here  
;  
  
: drawCounters  
  ['] draw1Counter @ iterateCallbackPtr !  
  counterHead  
  ITERATE-LIST  
;
```

See how streamlined this is compared to the original sample code.

By [Neal Bridges \(Nbridges\)](#) on Friday, January 28, 2000 - 06:10 pm:

Very cool. :)

Neal

By [Michael Rowe](#) on Saturday, January 29, 2000 - 03:46 am:

I am not a forth guru, so please correct me if I am wrong:

Since this list code does not use the heap, each node allocated reduces the amount of memory available from the somewhat limited forth code space. This is fine if the code + data can be contained within the space available. However, use of the heap instead would increase the amount code space available, allowing the construction of larger programs.

By [Neal Bridges \(Nbridges\)](#) on Saturday, January 29, 2000 - 07:07 am:

No -- code space and data space are separate. Data space is in fact allocated from the heap, and doesn't affect the size of an app.

Neal

By [Winchell Chung](#) on Saturday, January 29, 2000 - 08:25 am:

The code that I posted adds data to the node by using the comma operator. I'm sure this is a terribly inefficient method. It is my understanding that the comma puts the data in the code space, which means you have serious fragmentation if you start removing nodes.

Perhaps a better way would be for the nodes to have a pointer to a chunk of memory obtained with the Allocate word.

By [Neal Bridges \(Nbridges\)](#) on Saturday, January 29, 2000 - 09:19 am:

Comma puts data in dataspace, not codespace.

Neal

By [Winchell Chung](#) on Saturday, January 29, 2000 - 09:15 pm:

Comma puts data in the dataspace?! Cool!

By [Erwin Schomburg](#) on Monday, January 31, 2000 - 07:14 am:

Be aware everyone playing with this that it is impossible to add to the dataspace of a compiled, stand alone Quartus application. So if you want to get away from playing with the principles using static amounts of data and enter real life dynamic linked lists, something along using ALLOCATE or more safely, (ALLOCATE) is asked for.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Monday, January 31, 2000 - 02:42 pm:

Indeed. Code using ALLOT or , is suitable for creating static lists, but dynamic lists would require ALLOCATE or (ALLOCATE).

Neal

By [Matthew Blair \(Blair\)](#) on Friday, March 17, 2000 - 08:46 am:

Hi,

Sorry to revive an old thread, but I'm currently implementing a dynamic linked list in the manner Erwin has suggested above, using **allocate** (thinking that the little bit of extra work and stack overhead will cause me the fewest problems down the road -- is that right?)

Anyway, so I've been looking at the linked-list code above, and I see that the variable that holds the position of the next link contains an offset from some base address and not the actual memory address (16-bit relative or 32-bit absolute) of the node.

So, the question is, would this technique work with a dynamic list using 32-bit pointers? In any case, is there any advantage to using this technique? I guess I don't see any savings in data storage, and I would think that fetching a memory address is less expensive than fetching the offset and an addition operation.

Thanks for any comments,

Matthew

By [Neal Bridges \(Nbridges\)](#) on Friday, March 17, 2000 - 09:12 am:

You can certainly store a dynamic linked list using (**allocate**) or similar.

Be sure each allocated item has space in it to store a pointer to the previous allocated item (the first one has '0' in this field). Keep a variable that tracks the address of the most recent item, and then you can walk through the list.

If you need to see some code, let me know!

Neal

By [Matthew Blair \(Blair\)](#) on Friday, March 17, 2000 - 10:23 am:

Thanks for the extra bit about storing forward/backward pointers in each link -- that would be a lot more flexible!

About **(allocate)**: I guess what I was really wanting to know is, is that the safest way to use dynamic memory? Is it overkill? I'm not entirely clear on why **(allocate)** has an advantage over **allocate**, at least sufficient to offset the use of double-cell pointers.

Also, do you have any comments about storing offsets from a base address vs. storing absolute pointers?

Thanks again,

Matt

By Erwin Schomburg on Friday, March 17, 2000 - 12:24 pm:

With the emergence of new OS versions (3.3 and above), ALLOCATE becomes increasingly unreliable, i.e. you may find only a small amount of dynamic memory that falls into the same segment (hence allows 16bit or relative pointers) as the Quartus data area.

/Erwin

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Address Book Up/Down arrows?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Address Book Up/Down arrows?](#)

By [Matthew Blair \(Blair\)](#) on Monday, January 24, 2000 - 09:54 am:

Hi,

I want to implement scrolling similar to the up and down arrows in the Address Book program. I used RsrcEdit and discovered that these two controls were simply buttons with a title in the Symbol7 font. However, the titles were unreadable. Furthermore, the given titles show the "enabled" version of the scroll button (i.e., not grayed).

Could someone give me a pointer to the 4 characters that are used to create the up and down arrows, both enabled and disabled?

Thanks,

Matthew

By [Matthew Blair \(Blair\)](#) on Monday, January 24, 2000 - 01:51 pm:

I answered my own question. For the benefit of those who may have wondered also, the Palm OS provides a function, `FrmUpdateScrollers` which accepts as arguments the object index of the two scroll buttons, and a flag indicating whether or not the scroll button is to be active. So, I simply copied the buttons from the address book and called the above function.

Quite a bit simpler than making arrow bitmaps, drawing them on top of the buttons, and ... essentially reproducing the functionality provided by `FrmUpdateScrollers`!

Matt

By [Wade Carlson](#) on Monday, January 24, 2000 - 04:34 pm:

Thanks for the great idea. I was just about to have to stumble upon the same problem, but you figured it out for me. :)

By [Matthew Blair \(Blair\)](#) on Tuesday, January 25, 2000 - 01:25 pm:

My goodness! I may have actually given something back to the group! Isn't that step 4 in the 12-step "I wanna stop being a newbie" program? :^)

Glad it helped though. Let me know if you want any specifics on how got the buttons to look right.

Matt

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Database questions

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Database questions](#)

By [Matthew Blair \(Blair\)](#) on Monday, January 24, 2000 - 08:22 am:

Some questions about the Data Manager routines:

1. I've noticed that the database header appears to be 84 bytes in length, and that the record headers are 26 bytes in length. Is that correct? Is there any way to minimize the size of the record header? The header is larger than the data contained in the record!

2. Deleting records: The SDK says that DmDeleteRecord and DmRemoveRecord differ in that the former sets the delete bit but does not remove the record while the latter removes the record. If I use DmDeleteRecord, is it still going to be accessible via DmQueryRecord? Will it still have an impact on the number of records returned by DmDatabaseSize?

Thanks,

Matthew

By [Ron Doerfler](#) on Monday, January 24, 2000 - 03:09 pm:

Relating to question 2:

If you use DmDeleteRecord, it will still be accessible via DmQueryRecord--see newmemo.txt in the File area for an example of having to detect whether the memo is deleted when sequencing through all the memos. DmNumRecords will also return it in the count of records. I don't know about DmDatabaseSize, but keep in mind that deleted records have zero size even though they exist, so the header is all that remains.

And in case you're thinking this, I'm not sure that a deleted record is automatically removed from the PalmPilot when a Hotsync occurs, although that is implied. It does happen for memos--I guess the desktop and Palm must be smart enough to remove memos on Hotsync that have been deleted. But if you delete a normal record, I think it still exists on the PalmPilot--anyone know this?? I think I saw this in some testing before, and I switched to DmRemoveRecord for that reason, but it's been awhile.

By [Matthew Blair \(Blair\)](#) on Thursday, January 27, 2000 - 09:49 am:

Thanks Ron. I decided to use DmRemoveRecord based on your comments and my own experimentation.

Another question: What is the limit on the number of records a database can have? I notice that DmNumRecords returns the number of records in a single-cell value, but DmDatabaseSize returns the number of records in a double-cell. Not that I expect to exceed $2^{16} - 1$ records, but, out of curiosity... :)

Thanks,

Matt

By [Dave Bennett](#) on **Sunday, February 6, 2000 - 10:37 am:**

The non-removal of deleted records seems to be "normal". The documentation for pilot-xfer gives you a method for "cleaning up" these deleted records.

`-p, --purge`

Purge any deleted data that hasn't been cleaned up by a sync (this is a safe operation, and will prevent your Pilot from accumulating crud if you delete records but aren't syncing with the PIM. The only information you can lose is archived but un-synced records.)

The first time I did the --purge I got back about 150k of memory space.

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Serial port and IR redirect

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Serial port and IR redirect](#)

By [harry](#) on Monday, January 24, 2000 - 07:12 am:

After some experiments about serial port and IR redirect, we have the following findings,

(after soft reset, clean palm environment)

```
needs serial
```

```
InitSerLib
```

```
9600. serOpen ( serial port ON)
```

```
serClose ( serial port OFF, as we expected)
```

```
( Now add the IR redirect words)
```

```
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 ;
```

```
9600. serOpen ( serial port ON)
```

```
IrEnable ( serial port OFF, fine)
```

```
IrDisable ( serial port ON)
```

```
serClose ( serial port still ON, some problem here)
```

```
serClose ( serial port OFF)
```

(Now we do the normal serial port open and close again)

```
9600. serOpen ( serial port ON)
```

```
serClose ( serial port still ON)
```

```
serClose ( serial port OFF)
```

My conclusion is, if you issue IrEnable/IrDisable once, the serial port became odds from then.

Harry

By [Neal Bridges \(Nbridges\)](#) on Monday, January 24, 2000 - 09:10 am:

A quick fix would be to loop on SerClose until the port is definitely off.

Neal

By [harry](#) on Monday, January 24, 2000 - 05:24 pm:

But, what is the real point to cause the problem?

We can use serClose 2 times to solve this. but from then on any other program which use serial port will not turn off the serial port by only one time serClose.

Harry

By [Neal Bridges \(Nbridges\)](#) on Monday, January 24, 2000 - 06:28 pm:

It strikes me that the SerClose semaphore must not be at zero after the first close, or it wouldn't need to be closed again. I'd like to check the semaphore before the first close, to see if it was bumped up by the IrEnable.

Neal

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Is APPEND defined correctly?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Is APPEND defined correctly?](#)

By [Wade Carlson](#) on Monday, January 24, 2000 - 01:22 am:

Is APPEND defined correctly in the Toolkit memo? Try the following:

```
\ test
include toolkit
: go
s" hello " s" man!"
2swap
s" there "
append
type type ;
```

According to the definition of APPEND, this should give you 'hello there man!', but instead it gives you 'hello there ther'. I understand why this is happening (s" there" is overwriting s" man!"), but according to the definition of APPEND should it work this way? This makes me very nervous about using APPEND within my programs (I have already had strange results from it). Why shouldn't it just move both strings to a free memory area before appending them? I could easily redefine APPEND, but I would like to make sure I am thinking straight before doing so.

By [Neal Bridges \(Nbridges\)](#) on Monday, January 24, 2000 - 06:01 am:

Hi Wade. APPEND is not broken. To perform an APPEND, your target buffer has to be large enough to hold the data. You're trying to append literal strings created by S" directly in place, and getting results that are understandable in that context but not what you desire.

When go is compiled, the literal strings are compiled into dataspace like this:

```
h e l l o . m a n ! t h e r e .
```

You then APPEND 'there ' to the end of 'hello ', giving you

```
h e l l o . t h e r e . e r e
```

You're then typing the first string:

```
hello there
```

followed by the second string 'man!', now corrupted:

```
ther
```

Giving you your final output:

hello there ther

Here's a working version of your example:

```
\ test  
  
needs toolkit  
  
create buffer 20 allot  
  
:  
  go  
  s" man!"  
  buffer 0 s" hello " append  
  s" there " append  
  type  
  type ;
```

APPEND is specifically written to append a string to the end of an existing buffer that is large enough to hold the additional data. If you want to write one that uses or re-uses a private buffer to do its work, by all means -- but that would be a different sort of tool. Usually, you want to add data to the end of an existing buffer in memory, so APPEND is a more general-purpose tool.

Neal

By [Wade Carlson](#) on Monday, January 24, 2000 - 04:21 pm:

Ah, that's kind of what I had ended up doing anyways. Thanks again.

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:NONAME and anonymous words

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

:NONAME and anonymous words

By Douglas Atique on Sunday, January 23, 2000 - 01:59 pm:

Hello, everybody!

I have been experimenting with Quartus how to define a word that I can embed in a data structure (think of it as a user-level dictionary). For that, I defined a word

```
: anon:
depth >r
postpone :noname
depth r> - 1- pick
myxt !
```

;

The idea is that (as DPANS states) :noname will place the xt on the stack and on top of it, whatever colon-sys its particular implementation wants. So I thought about getting the first cell that :noname would place on the stack, which I presume would be the resulting xt. I have made some tests, namely

```
: test:
depth . postpone :noname depth .
;
which told me that only one cell is pushed onto the stack for Quartus Forth during a :noname
execution.
Then I tried
: test2:
depth >r postpone :noname depth r> - 1- pick .
;
and tested it with
test1: ." hello!" ;
which gave me in the first execution
-12560 ok
Then I went to see the xt on the stack to check that I had picked the correct cell and got
.s
s<1>-12556
ok
```

It seems that I didn't get the xt correctly, don't you think?

For that I am asking whether I have interpreted the standard correctly and whether Quartus Forth implements it accordingly. Also I would like to have a way to retrieve the final xt right after executing the :noname inside a definition.

Any suggestions? Any ideas?

By the way, I would like to know also whether I could manipulate the stack inside my anon: word to effectively remove the newly-generated xt as soon as I store it in my data structure

from which I will EXECUTE it, so that I don't have to bother to clean up the stack after the ; . All I want is to be able to define a colon-like word that stores the xt somewhere for my use but doesn't force me to define a corresponding semicolon-like word that does cleanup, letting me use the same standard ; .

Regards,
Douglas

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 23, 2000 - 05:22 pm:

Hi Douglas. :NONAME only leaves an xt on the stack when ; resolves the colon-sys. This is as per the Standard.

If you want to retrieve the xt in Quartus Forth directly after the :NONAME, you can do that like this:

```
: mynoname
  :noname
  cshere . \ this is the xt
  ...
  postpone ;
;
```

Neal

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 23, 2000 - 05:29 pm:

Here's a complicated explanation of why you can't get at the :NONAME xt in a Standard-compliant fashion: :NONAME also leaves a colon-sys on the control stack, which may or may not be the data stack in a particular implementation. The size of colon-sys is implementation-specific, and is always the topmost item on the data stack in those implementations where the data stack is the control stack, so there's no way to know for all Standard systems how far down you'd have to look in the stack to find the xt. Therefore, the xt is officially unavailable until the end of the :NONAME definition. Any method of retrieving the xt will be implementation-specific, like the one I showed you above.

Neal

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 23, 2000 - 05:39 pm:

Addendum: I had another look at what you're doing, fishing around using DEPTH to find the first cell. This may well be Standard, and in that case I'll need to modify :NONAME to produce an adjusted value. I'll add it to my list. In the meantime, the solution I provided should do the trick.

Neal

By Douglas Atique on Sunday, January 23, 2000 - 05:48 pm:

Hello, Neal.

CSHERE really works, but it doesn't appear on DPANS. Also, I needed a :NONAME that already left the final xt on the stack, even with colon-sys on top of it; and a ; that consumed all of colon-sys but wouldn't change the xt. With this I would be able to define a defining word that could consume the xt and store it in a table even before compiling the first word, and when I defined a word with it I could use the standard ; to end the compilation, as it would consume the colon-sys but leave untouched whatever was on the stack when I started the definition. I did some tests and found out that :noname leaves on the stack only one value, which I suppose to be a mix of colon-sys and the xt (as the xt was always obtainable from this value by doing 4 +), and ; changes this value to be the final xt, so that even if I roll it, adjust it manually and store it somewhere, consuming it before ; executes, ; will change whatever I have on TOS. I have read comp.lang.forth about this and it seems that the theme is not well resolved even in the standard.

I don't know if my interpretation of ANS is correct, but if it is, I should be able to do what I want.

Do you think it would be too much trouble to try to change :noname and ; behavior?

Regards,

Douglas

By Douglas Atique on Sunday, January 23, 2000 - 05:52 pm:

Hey, our dialog is not synchronized. :-)

OK. If you need help with this, let me know. I seem to be the one most interested in it.

Regards,

Douglas

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Need POSE debug help

**[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
Need POSE debug help**

By [Barry Ekstrand](#) on Friday, January 21, 2000 - 08:34 am:

I have a program that runs fine under OS 3.0 but has a glitch with OS 2.0 and OS 1.0. When testing the app in POSE, under OS 2.0 or OS 1.0, the crash occurs immediately. The gremlin report tells me it happens "at 0 of 1000000". When the above crash occurs, POSE reports that the program has performed an illegal operation - it has performed a "bus error".

Now, I need to figure out what I should look for with respect to this "bus error". I don't see any real help in deciphering this in the Palm OS docs or in the Palm Programming book by Rhodes & McKeehan. Does anyone have any insight in this and give me some direction as to where to look for the incompatibility with the older OS? I don't know of anything in my code that would be OS 3.0 specific.

Any help will be appreciated.

Regards,

Barry Ekstrand

By [Neal Bridges \(Nbridges\)](#) on Friday, January 21, 2000 - 06:27 pm:

Hi Barry. One thing you can do is turn on tracing and see exactly what gremlin event is causing the failure.

Another is to whittle back your code until you have a minimal program that still exhibits the same problem. I'd be happy to help find the problem if you'd like to share the code.

Neal

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Strip leading blanks from a string

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Strip leading blanks from a string

By [Matthew Blair \(Blair\)](#) on Thursday, January 20, 2000 - 09:17 am:

Hi,

While debugging my program, I discovered what many already know -- that leading blanks in a string, i.e., " 1.23" is interpreted by the `>float` word as 0.

I wrote a short word that takes a counted string and returns the new address and length of the shortened string (blanks removed). I just wanted to find out if I reinvented the wheel -- I'd rather use a built-word if it exists...

Thanks,

Matt

By [Mark Beckman](#) on Thursday, January 20, 2000 - 01:08 pm:

I discovered the same thing when I wrote `>sd`.

I could not find something that did this already but that probably shows my inexperience with forth. In any case if you re-invented the wheel you are certainly not the first and are probably better off for it.

By [Matthew Blair \(Blair\)](#) on Thursday, January 20, 2000 - 01:43 pm:

Thanks Mark. Would you care to share your implementation? There's probably not very many different ways to do this, but I'll bet I will learn a better way when I see `>sd`

Here's mine:

```
: strip-bl( c-addr u -- c-addr' u' )
\ removes leading blanks (ASCII 32) and
\ and null bytes from a supplied string
2dup over + 1- swap do
i c@ dup bl = swap 0= or if
1- swap 1+ swap
else leave
then
loop ;
```

Thinking about it now, I guess I could have made this check only to see where the first digit begins, using a C-style `isdigit(char)` function.

MattBy [Mark Beckman](#) on Thursday, January 20, 2000 - 03:37 pm:**Ok, here is mine:****On a real quick inspection, the only real difference I see is I am using the char count to detect the end of the string and you are checking for the c-style \0.**

```

: whitespace? ( char -- flag)
  bl = ;

: skipwhitespace ( Addr Cnt -- Addr Cnt)
  begin
    2dup swap c@ whitespace? and
    while
      1- swap 1+ swap
    repeat ;

```

By [Matthew Blair \(Blair\)](#) on Friday, January 21, 2000 - 10:21 am:**Actually, I'm using the char count also. Note that the first line adds the char count to the base address to form the bounds on the do loop.****I've since revised mine though to be a bit more general as I mentioned at the tail end of my last post. This new version simply checks for digit/not digit to determine where in the string the number actually starts. Here it is:**

```

needs core-ext

: strip-bl ( c-addr u -- c-addr' u' )
  2dup over + 1- swap do
  i c@ [char] 0 [char] 9 1+
  within invert if
  1- swap 1+ swap
  else leave
  then
  loop ;

```

By [Mark Beckman](#) on Friday, January 21, 2000 - 12:36 pm:**Oops I didn't see the do loop (I must be blind).****Re: checking for digits:****Since I'm not looking at this in context I could be way off base, but what about numbers that start with non-digits?****-1.0**

.233
+1.57

By [Matthew Blair \(Blair\)](#) on Friday, January 21, 2000 - 01:35 pm:

Yeep. Better blind than slow in the head :^)

Thanks for noticing that. My application expects only positive numbers, but the last two examples you gave certainly would trip my app up! I've fixed it by adding a `isdigitmod?` word which checks a char to see if it is a digit "modifier", i.e., - . or +

Thanks again,

Matthew

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E-mail:

Drawing bitmaps through a mask

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Drawing bitmaps through a mask](#)

By [Winchell Chung](#) on Thursday, January 20, 2000 - 08:55 am:

WinDrawBitmap will draw the supplied bitmap on the screen. I'm trying to draw a bitmap with a non-rectangular outline on some existing graphics, without clobbering the existing graphics.

This is traditionally done with a separate mask bitmap. You draw the mask on the screen using a logical OR, and then draw the bitmap using logical AND.

OR and AND are not supported by WinDrawBitmap. Can anybody point me to some documentation that would allow me to implement this? I assume I'd have to find the screen's data area and insert the data with the selected logical operator manually.

What am I doing? I'm implementing a computer game called OGRE in Quartus Forth, and I have to draw hexagonal "tiles" on the screen to make the playing surface.

By [Winchell Chung](#) on Thursday, January 20, 2000 - 07:55 pm:

Hmmp. There seems to be a call WinCopyRectangle that will do what I want. If I can find the information. The "mode" parameter is the transfer mode. DRAW_XOR or srcXOR, that sort of thing.

Unfortunately, in the Palm OS SDK manual, when it gets to the description of that parameter, the reader is referred to "Window.h".

Visiting the official Palm website, I must confess I was a bit daunted at what you have to go through in order to obtain copies of the SDK.

Does Quartus have built in constants for the transfer modes? Or if not, would anybody care to share the values of the constants with me?

By [Dan Richardson](#) on Friday, January 21, 2000 - 09:04 am:

This is a bit from window.h, might be what you need.

```
//enum graphicModes { drawMode = 0, eraseMode, invertMode, mergeMode};
//typedef enum graphicModes GraphicModeType;
typedef enum {scrCopy, scrAND, scrANDNOT, scrXOR, scrOR, scrCopyNOT} ScrOperation;
```

I could email you the whole window.h, it's 11k, a little big to post here as a message.

Dan

By [Dan Richardson](#) on Friday, January 21, 2000 - 09:09 am:

It's really not a big deal to jump through palm's hoops, BTW, and it's very worth it.

You fill out a form and mail it in.

Gets you access to all the ROMS for the emulator, bunch of information, and a discount on Palms.

You're going to need to do it sometime.

The SDK is also included, I believe in the GCC sdk.

Dan

By [Winchell Chung](#) on Friday, January 21, 2000 - 03:51 pm:

Thank you very much for the info. I guess I better bite the bullet and sign up as an official Palm Developer.

By [Winchell Chung](#) on Saturday, January 22, 2000 - 08:02 am:

Harumph. Signing up and getting the SDK is easy. What takes forever is getting a copy of the Debug ROMS for the POSE. You have to sign up, get a temporary password, wait two days for the official password, sign up online for the ROM seeding program, print out a form and mail it back, and wait two weeks while they process it. Oh, well.

By [Erwin Schomburg](#) on Saturday, January 22, 2000 - 01:47 pm:

Time versus money: A couple of books on Palm (programming) come with CDs that have the images on them.

/Erwin

By [Winchell Chung](#) on Sunday, January 23, 2000 - 02:41 pm:

I did manage to get the mask drawing to work. I posted the source code in the Quartus mailing list for those who are interested.
(under the name "Nyrath")

By [Steve Gibson](#) on Wednesday, January 26, 2000 - 10:06 am:

Quartus mailing list? How did I miss out on this? How do I subscribe?

-Steve

By [Neal Bridges \(Nbridges\)](#) on Wednesday, January 26, 2000 - 10:27 am:

It's user-created -- I'm a subscriber myself, though.

<http://onelist.com/community/Quartus-Forth>

Neal

By [Winchell Chung](#) on Friday, January 28, 2000 - 01:11 pm:

Oh, it isn't official?

Well, in that case, here's the source code and an example of use:

```
\ maskDraw 01/22/00 WDC
```

```
\ Required library code:
```

```
needs ids  
needs resources  
needs struct  
needs double
```

```
\ Constant definitions:
```

```
\ graphicModes  
0 constant drawMode  
1 constant eraseMode  
2 constant invertMode  
3 constant mergeMode
```

```
\ ScrOperation
```

```
0 constant scrCopy  
1 constant scrAND  
2 constant scrANDNOT
```

```

3 constant scrXOR
4 constant scrOR
5 constant scrCopyNOT

```

```

struct
    1 cells field x
    1 cells field y
    1 cells field width
    1 cells field height
end-struct rect:

```

```

\ Variable declarations
2variable offScreenImageWin
2variable offScreenMaskWin
2variable tmpHandle
2variable error
2variable RscHandle
rect: drawRect
variable drawX
variable drawY

```

```

\ Variable default initializations:
0. offScreenImageWin 2!
0. offScreenMaskWin 2!

```

```

: drawTile ( y x ID-no -- )
    [id] Tbmp
\ this will cause a fatal exception
\ if the resource is not found.
\ add some error trapping
DmGetResource
2dup RscHandle 2!
MemHandleLock ( y x addr. )
WinDrawBitmap
RscHandle 2@ MemHandleUnlock
throw
RscHandle 2@ DmReleaseResource
throw
;

```

```

: initOffScreenWin
( height width -- WinHandle )
2>r
error >abs drawMode >byte
2r>
WinCreateOffscreenWindow
;

```

```

: drawImageInWindow
( imageID &offWin -- )
2@
WinSetDrawWindow
tmpHandle 2!
0 0 rot drawTile
tmpHandle 2@

```

```

WinSetDrawWindow
2drop
;

: maskDraw
( y x MskID ImageID height width -- )
\ y x are screen co-ords of where the
\ image will be drawn.
\ MskID is the id number of a Tbmp
\ resource containing the mask.
\ ImageID is the id number of a Tbmp
\ resource containing the image to
\ be drawn.
\ This assumes that mask and image have
\ same height and width.
\ Height and width are the dimension of
\ the mask and image. This should be
\ extracted from the Tbmps, but I
\ couldn't figure out how.
\ init draw rectangle
0 drawRect x !
0 drawRect y !
drawRect width !
drawRect height !
\ init offscreen windows
drawRect height @
drawRect width @
initOffScreenWin
offScreenImageWin 2!
drawRect height @
drawRect width @
initOffScreenWin
offScreenMaskWin 2!
\ Fill Offscreen Windows
offScreenImageWin
drawImageInWindow
offScreenMaskWin
drawImageInWindow

drawX !
drawY !

\ draw mask with ANDNOT
scrANDNOT >byte
drawY @
drawX @
drawRect >abs
WinGetActiveWindow
offScreenMaskWin 2@
WinCopyRectangle
\ draw image with XOR
scrXOR >byte
drawY @
drawX @
drawRect >abs

```

```
WinGetActiveWindow
offScreenImageWin 2@
WinCopyRectangle
```

```
\ free up the windows
0 offScreenImageWin 2@
WinDeleteWindow
0 offScreenMaskWin 2@
WinDeleteWindow
```

```
;
```

```
=====END OF MASK DRAW=====
```

code fragment illustrating use:

needs maskDraw

```
\ Constant definitions:
```

```
1300 constant HexBmp
```

```
1400 constant HexMaskBmp
```

```
40 constant TileWidth
```

```
40 constant TileHeight
```

```
\ TileWidthOverlap is the
```

```
\ offset from one hex column
```

```
\ and the adjacent hex column.
```

```
\ It is less than the tile
```

```
\ with since the hexes dovetail.
```

```
30 constant TileWidthOverlap
```

```
\ Variable declarations
```

```
variable halfWidth
```

```
variable halfHeight
```

```
\ Variable default initializations:
```

```
TileWidth 2 / halfWidth !
```

```
TileHeight 2 / halfHeight !
```

```
(ID) 0gre (ID) rsrc use-resources
```

```
: draw-panel
```

```
4 0 do
```

```
4 0 do
```

```
  j TileHeight *
```

```
  \ odd hex columns are offset
```

```
  \ downward by half a hex height
```

```
  \ in order to dovetail into
```

```
  \ a hex grid
```

```
  i 2 mod 0= if
```

```
    halfHeight @ +
```

```
  then
```

```
  i TileWidthOverlap *
```

```
  HexMaskBmp
```

```
  HexBmp
```

```
  TileHeight
```

```
  TileWidth
```

```
maskDraw
loop
loop
;
```

=====

Notes:

"Ogre" resource contains two bitmaps, both are 40x40. #1300 is an image of a hexagon with detail inside, #1400 is a totally black filled hexagon used as a mask.

__Hexes look like this:

```
 /  \
 \__/
```

By [Neal Bridges \(Nbridges\)](#) on Friday, January 28, 2000 - 06:25 pm:

Thanks for the source! The mailing list is "unofficial" in the sense that I don't maintain it personally, but some folks prefer it to a web board like this.

Neal

By [Winchell Chung](#) on Friday, January 28, 2000 - 06:52 pm:

You're quite welcome to the source! You are the fellow who made this marvelous Quartus environment.

However, about my code. Keep in mind that it was written by a Forth novice, and all I can say is that it doesn't immediately crash my Visor. For all I know it could be crawling with hideous bugs.

By [Neal Bridges \(Nbridges\)](#) on Friday, January 28, 2000 - 07:31 pm:

It looks pretty clean, Winchell.

Neal

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Silly newbie question

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Silly newbie question

By [Selcuk Demiray](#) on Wednesday, January 19, 2000 - 10:15 am:

Hi all, I just trying to run Steven Donahue's "Hello World" example in the tutorial and getting the following message:

```
exception in file: ids  
idtemp? undefined word
```

What is missing, I have already libray.mpa loaded and using Evaluation version 1.2.1U

Thanks in advance for any help.

By [Jim Hendricks](#) on Wednesday, January 19, 2000 - 02:44 pm:

Seems to me that you may have some corruption in the library files loaded into your memos. Look at the memo titled \ids 98.11.9 6:58 pm NAB

Line 7 should read 2variable idtemp

This is where idtemp is defined.

Jim

By [Selcuk Demiray](#) on Thursday, January 20, 2000 - 02:47 am:

I deleted the \ ids memo and reinstalled it. Now it works. Many thanks.

Selcuk

By [Jim Hendricks](#) on Thursday, January 20, 2000 - 09:15 am:

No problem, glad I could help in Neal's absence!

Jim

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Use of PAD

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Use of PAD

By [Matthew Blair \(Blair\)](#) on Tuesday, January 18, 2000 - 03:55 pm:

Is it OK to use PAD as a temporary data area? The standard talks about it as a scratchpad for strings, but I've been using it in the following manner:

```
DB# ( localID. -- u )
\ returns number of records
2>r 0. 0. pad >abs 2r>
cardnum @ DmDatabaseSize drop
pad 2@ drop ;
```

Is that OK? What kind of problems might I run into?

Matt

By [Robert](#) on Wednesday, January 19, 2000 - 01:53 am:

DB# will distroy pad. This may be surprising to others using DB# and pad.

By [Matthew Blair \(Blair\)](#) on Wednesday, January 19, 2000 - 08:16 am:

I don't quite understand what you mean. "DB# will destroy pad" sounds like I'm asking for my program to crash. Or do you mean that I run the risk of losing whatever I wrote to PAD?

My understanding was that the Standard provides PAD as a programmer convenience. In the DB# word, the data area referenced by PAD does not appear to be reused.

Please explain further what you mean...

Thanks,

Matt

By [Erwin Schomburg](#) on Wednesday, January 19, 2000 - 08:43 am:

If you keep it tightly to yourself and make sure you have not attempted to do any PAD nesting the usage shown is reasonable. As for Roberts comment, if you have expected the value of PAD and the contents pointed to by it to survive farther than you can control from the encloement of a single definition, you are up for some nasty surprises in your (Quartus) programming career.

May the Forth be with you!

/Erwin

By [Matthew Blair \(Blair\)](#) on Wednesday, January 19, 2000 - 08:56 am:

Thanks Erwin!

By the way, is there another method one could use to accomplish the same thing (i.e., temporary data storage)?

Matt

By [Erwin Schomburg](#) on Wednesday, January 19, 2000 - 09:52 am:

You need to tuck aside your own scrap area if you want to compile your DB#, as Quartus in its current incarnation does allocate a DATA resource only up to HERE, meaning that PAD from core-ext will fail in a compiled stand-alone application.

Something safe that would allow to tuck something below PAD as well as above it would look like:

```
84 ALLOT  
CREATE PAD  
84 ALLOT
```

Of course you are free to define the sizes differently, make it using more or less memory and/or omit the undercut ALLOTment at all, you may also want to give it a different name, like e.g. SCRAP, as befits your needs.

Or you could do something clever, dynamically ALLOCATEing and FREEing chunks of memory used for scrap storage as you go along.

/Erwin

By [Matthew Blair \(Blair\)](#) on Wednesday, January 19, 2000 - 10:44 am:

I did not realize that it would not work in a stand-alone application. It has worked so far, i.e., I haven't crashed anything yet. I guess I've been lucky so far. However, I think I will do something like you've mentioned, defining a SCRAP area similar to PAD so as to avoid "nasty surprises in my (Quartus) programming career" :^).

Thanks again,

Matt

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 23, 2000 - 08:07 am:

Erwin, thanks for the heads-up on PAD. I don't use it myself. The safest PAD is:

```
create PAD 84 chars allot
```

This will work fine always in compiled apps.

Neal

By Erwin Schomburg on Sunday, January 23, 2000 - 08:51 am:

Point is that some older code making use of PAD goes for storage *under* PADs address, thats why I suggested to tuck some bytes below it as well in my example of a safe PAD above.

/Erwin

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Am I misunderstanding <# #S #> ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Am I misunderstanding <# #S #> ?

By [Wade Carlson](#) on Monday, January 17, 2000 - 02:03 pm:

If I type the following directly into Quartus:

```
1. <# # # #s #>
type
```

I get the expected result 001

But if I look at the stack before entering type, I get 343 for a result!!!

Try the following:

```
1. <# # # #s #>
.s
type
```

Is this a bug, or am I a complete idiot?

By [Jim Hendricks](#) on Monday, January 17, 2000 - 03:12 pm:

My guess is it's a bug in .s and that .s is corrupting the area that the pictured string is build in. when I do .s, I get 337 as an address and 3 len. So what I did instead is

```
1. <# # # #s #>
type
337 3
type
```

this works for both type's, so I can only assume that .s must use the same area as the pictured string words.

Of course, this is only opinion, Neal would have a better answer I am sure!

By [Wade Carlson](#) on Monday, January 17, 2000 - 04:42 pm:

Actually I don't think it has to do with .s (but who knows). I actually found it because I was having problems with <# #s #> because my program requires that I do some extra formatting on the string returned (I am actually trying to right-justify a date in the format m/d/yyyy given month, day, and year as unsigned integers) My program doesn't even use .s, I just narrowed the problem down to this when things weren't working.

By [Robert Patten](#) on Monday, January 17, 2000 - 10:50 pm:

.s uses <# #s #> to out put the numbers on the stack using the same string buffer containing "001" pointed to by 337 3 on the stack. In the above example .s converts 337 to a string overwriting the 001 and typed out then 3 is converted to a string overwriting 7 leaving 333 as the output string in the buffer to be printed by TYPE.

By [Wade Carlson](#) on Monday, January 17, 2000 - 11:18 pm:

Ahh, it's starting to make sense. In my program I was doing 2 <# #s #>'s back to back, and then trying to APPEND them together. It must be that the 2nd one is overwriting the first one, causing me my problem in my program. Thanks for the help!

By [Jim Hendricks](#) on Tuesday, January 18, 2000 - 09:18 am:

Makes sense, Robert, where did you find the info on .s, is it documented or did you 'see' .s to discover this info? Just curious.

Thanks, Jim

By [Robert Patten](#) on Tuesday, January 18, 2000 - 03:17 pm:

**.s is implemented by using other words in the dictionary.
 D.R is used to output the number strings.
 D.R uses <# #s #> and type to output the number string.
 PICK is used to get the data to top of stack.
 DEPTH is used to set up the loop to PICK and display the numbers using D.R
 Each number converted to a string, uses the same string buffer. Because of this you must use the the string before the next <# is executed.
 <# resets the hold pointer to the end of string space. Hold takes a charactor from the data stack and places it in the string buffer and decrements the hold pointer.
 Number conversion is acomplished by # deviding the double number by the BASE @ and converting the remainder to a charactor for HOLD to place in the string buffer.**

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 15, 2000 - 04:59 pm:

Here's an alternate .S that doesn't corrupt the pictured numeric output buffer. It's simple; it doesn't do any stack underflow checking, for instance. That's left as an exercise for the student :)

```
\ alternate.s 00.2.15 4:11 pm NAB

: (.#) ( n -- )
  0 base @ um/mod ?dup if
    recurse then
  dup 9 > 7 and + [char] 0 + emit ;

: .#
  base @ 10 = if
    dup 0< if negate [char] - emit then
  then (.#) space ;
```

```
: (.s)
  depth if >r recurse r> dup .# then ;

: .s ." ( " (.s) ." )" cr ;
```

Neal

By [John Newell](#) on Friday, February 18, 2000 - 06:34 am:

AMERICAN NATIONAL STANDARD ANSI X3.215-1994

American National Standard

for Information Systems -

Programming Language -

Forth

DPANS94.DOC

Here is an extract from section:

3.3.3.6 Other transient regions

Words that display numbers may be implemented using pictured numeric output words.

Consequently, . (dot), .R, .S, ?, D., D.R, U., and U.R could also corrupt the regions.

See the manual for more information

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.mpa's on Mac Palm Desktop?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

.mpa's on Mac Palm Desktop?

By [ssevenup](#) on Sunday, January 16, 2000 - 11:27 pm:

Can someone tell me why I can't seem to open or import ".mpa" files in Macintosh Palm Desktop "Note List" the way the docs seem to suggest. They are supposedly in "Memo Pad Archive" format if I recall correctly. Is this a PC only format?

--Mark

By [Douglas Atique](#) on Monday, January 17, 2000 - 12:28 pm:

Hello, Mark.

Take a look at the discussion "Organizing projects", where I had the same doubt.

Regards,
Douglas

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Memory Allocation

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Memory Allocation

By [Michael Rowe](#) on Sunday, January 16, 2000 - 09:20 am:

I am having trouble running some quartus-generated apps via "Launch 'Em 2".

The following program runs fine from quartus inteactively. However, if I generate an executable from it, it returns 0 memory if run under Launch 'Em, but runs ok from the Palm launcher.

Although it would probably be easy to say that the problem is in the launcher, I have not had any problems running other apps from it.

Do I have to do something to initialize the heap before I start using it? Or is the launcher really broken?

Any suggestions would be appreciated.

-- mrr

```
\ mem-test
needs memory
100 constant CHUNK

: main ( -- )
0 ( t )
begin ( t )
CHUNK tuck + swap ( t s )
allocate swap drop ( t r )
0 <> ( t )
until ( t )
CHUNK - ( t )
." total mem =" . cr ( )
key drop ; ( )

: go main ;
```

By [Douglas Atique](#) on Tuesday, January 18, 2000 - 06:18 pm:

Hello, Michael.

Hey, I've never used ALLOCATE, but I guess you should be FREEing the memory, shouldn't you? Maybe, the first time you didn't allocate all available memory and it finished well, but second time, you know... Sorry for the guess. I'm not sure.

By [Erwin Schomburg](#) on Wednesday, January 19, 2000 - 08:01 am:

No need to FREE before exiting, OS does it for you (although it **is** sloppy not to). The point with ALLOCATE is that it is there to have it and to have it in a standard compliant form, so it maps the 32bit pointer retrieved from OS to a 16bit pointer in the Quartus dataspace. Under different environments it may happen that there is heap space available, but that it is not mappable into Quartus dataspace, so you get 0 space available. To verify whats up, use (ALLOCATE) from the Mem module to retrieve a 32bit pointer.

May the Forth be with you!

/Erwin

By [Michael Rowe](#) on Wednesday, January 19, 2000 - 03:16 pm:

Well Erwin,
you might be on to something here. If the code shown below is made into an executable, allocate and (allocate) both run ok from the Palm launcher. But only (allocate) works from "Launch Em".

Since one would expect that Quartus-generated apps also run from other launchers in common use, this renders the allocate routine fairly useless.

This is a significant problem for me, as I have made extensive use of allocate, due to the savings afforded by short pointers. Maybe there is some other way to fix this problem...

Bye for now, mrr

```
\ mem-test
needs mem
needs memory
100 constant CHUNK
```

```
: main ( -- )
CHUNK allocate
0 = if
." allocate ok"
else
." allocate broken"
then
cr
CHUNK (allocate)
0 = if
." (allocate) ok"
else
." (allocate) broken"
then
key drop ;
```

: go main ;

By [Erwin Schomburg](#) on Thursday, January 20, 2000 - 09:24 am:

With LauncherIII I get the same results for free Heap as under Palm built in launcher, as well as the same range of ALLOCATEable memory. As I do not intend to throw money at LaunchEm, could you please run

: go
mem 10 d.r 10 d.r cr key drop ;

as a compiled application and compare the results with the same thing run under built in and LaunchEm?

/Erwin

By [Michael Rowe](#) on Thursday, January 20, 2000 - 09:48 am:

Thanks for your help Erwin,

the result is 230572 226858 from both launchers.

mrr

By [Erwin Schomburg](#) on Thursday, January 20, 2000 - 10:09 am:

Ooops, that is far more than Neal anticipated when designing Quartus under OS2 ... OS3. Any ALLOCATE that coincidentally gets a bite from the free Heap with an relative address above hex 0000FFFF will fail through the value being wrapped around and hence unmapable. Valid ALLOCATEs can have relative values only from (above) HERE to hex FFFF.

Now we have to pass back the problem as an implementation problem to Neal. In the meantime, if you want working code that does not crash on some users, use (ALLOCATE), even if it hurts to touch once working old code.

/Erwin

BTW: With that bucketfull of free Heap, I assume you took the plunge and updated to OS3.5?

By [Michael Rowe](#) on Thursday, January 20, 2000 - 10:32 am:

This problem occurs on both the 8mb Visor OS 3.1 as well as the 8mb Vx OS 3.3 when running Launch 'Em v2.1. Thanks for your help, mrr

By [Erwin Schomburg](#) on Thursday, January 20, 2000 - 10:38 am:

Hohum, adaptive heapsize based on available memory already there, thought Palm claimed that to be one of the enhancements available in OS3.5.

/Erwin

By [Jim Hendricks](#) on Thursday, January 20, 2000 - 11:31 am:

adaptive heapsize? Are we refering to a lifting of the 64k limit on the dynamic heap? Which OS version is that available in? I am running 3.3.

Thanks, Jim

By Erwin Schomburg on Friday, January 21, 2000 - 06:12 am:

OS3.1 and OS3.3 have dynamic heap greater than 64k, (about 100k on a IIIx), but adaptation of heapsize according to available memory is a feature in upcoming OS3.5, a figure of over 200k as Mike reports is strange, maybe the OS3.3 for PalmVx is already taking this on.

/Erwin

By [Jim Hendricks](#) on Friday, January 21, 2000 - 08:50 am:

OK, Thanks, gives us something to look forward to, as well as knowing what we can now do!

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 23, 2000 - 07:59 am:

Indeed, ALLOCATE does not guarantee that it will return an available block. It does so quite reliably on pre-3.3 OS versions, but 3.3 has more available dynamic RAM, so there's a greater chance in some circumstances that the allocated block will be out of range.

For guaranteed access to dynamic RAM, use (ALLOCATE) and friends. These return 32-bit pointers and so always succeed (assuming, of course, the requested amount of RAM is available).

Neal

By [Michael Rowe](#) on Saturday, January 29, 2000 - 03:17 am:

I find short heap pointers useful in many situations, and do not want to give up on "allocate". Below is a modified "allocate" which can be useful if one is willing to give up the heap region above 64k. It simply throws away out-of-range blocks, thus making allocate usable in environments with a large heap.

```
\ memory mrr modified
needs double
```

```
1 constant memerr
1 constant rangeerr
```

```
: inrange? ( a. -- flag )
2dup >rel >abs d= ;
```

```

: rel>Handle ( a -- h. )
>abs MemPtrRecoverHandle ;

: rel>Handle ( a -- h. )
>abs MemPtrRecoverHandle ;

: Handle>rel ( h. -- a 0=success|ior )
2dup d0= if drop memerr exit then
MemHandleLock 2dup inrange?
if >rel 0 else drop rangeerr then ;

: alloc-mem ( u -- a ior )
0 ( u. ) MemHandleNew Handle>rel ;

: ALLOCATE ( u -- a ior )
begin ( s )
dup alloc-mem ( s a ior )
dup rangeerr = while ( s a ior )
2drop ( s )
repeat ( s )
rot drop ; ( a ior )

: FREE ( a -- ior )
rel>Handle MemHandleFree ;

: RESIZE ( a1 u -- a2 ior )
>r rel>Handle r> 0 ( u. )
2over MemHandleResize >r
Handle>rel r> or ;

: size ( a -- u )
rel>Handle MemHandleSize d>s ;

```

By [Neal Bridges \(Nbridges\)](#) on Saturday, January 29, 2000 - 07:21 am:

Clever. I had considered something similar -- but allocating 32K at a time till a successful allocation is returned.

Neal

By [Ron Doerfler](#) on Saturday, January 29, 2000 - 09:58 pm:

The retry for ALLOCATE is a great idea--I use a number of allocates for string constants and I wasn't sure what I was going to do.

Something else: I found that sometimes RESIZE would fail, and I believe it is because the

memory is not unlocked before resizing, which will fail the resize if the memory is grown and there is no free space after it. From the SDK Vol. 3 under the MemHandleResize command:

====

Call this routine to resize a chunk. This routine is always successful when shrinking the size of a chunk, even if the chunk is locked. When growing a chunk, it first attempts to grab free space immediately following the chunk so that the chunk does not have to move. If the chunk has to move to another free area of the heap to grow, it must be movable and have a lock count of 0.

====

Besides, it seems to me that each time a chunk is resized, the lock count is increased, as HANDLE>REL locks it. I think if you resize a chunk more than 15 times, you would get an overlocked chunk.

So I rewrote RESIZE to unlock the handle first as follows and I haven't had it fail since.

```
: RESIZE ( a1 u -- a2 ior )  
>r rel>Handle r> 0 ( u. )  
2over 2dup MemHandleUnlock >r  
MemHandleResize >r  
Handle>rel r> or r> or ;
```

Ron

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Trivial(?) program reset+erased my Palm Vx

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Trivial(?) program reset+erased my Palm Vx

By [Kevin Goodman](#) on Friday, January 14, 2000 - 11:36 pm:

According to the FAQ, quoted at bottom, I can't toast my applications or databases if I mess up in Forth.

BUT I just did it. Ran my program and it reset, clearing all programs and databases except original flash stuff. It's as though I'm using my palm for the first time. Even the date was reset. I'm crossing my fingers that the hotsync backups all work ok...

Anyways ... so what killed it? I'm still doing programs that are awefully close to Hello World in nature. So, the program that killed it was simple. Not working but simple.

I don't know if anyone can tell me what's wrong with this program or why it may have toasted the machine, I'd appreciate it. Here it is (going from memory) - supposed to be a little doodler program :

needs events
needs graphics

```
: draw ( etc. event -- )
case
nilEvent of
drop
endof
penDownEvent of
coords@ ( -- y1 x1 )
endof
penMoveEvent of
coords@ ( -- y1 x1 y2 x2 )
2swap 2over ( -- y2 x2 y1 x1 y2 x2 )
line ( -- y2 x2 )
endof
penUpEvent of
2drop
endof
." Unexpected event"
endcase
;
```

-257 constant byeThrow

```

: go ( -- )
MainForm
begin
['] ekey catch
byeThrow = if
." Exiting in 5 seconds!"
500. SysTaskDelay
(bye)
then
draw
again
;

```

Q: Any chance of blowing away other applications or databases if I mess up in Forth?

A: No chance. Because of the way the Palm memory model is designed, other applications and data are protected from being accidentally corrupted or overwritten. Barring the explicit use of DmWrite, you cannot accidentally modify applications or data kept in storage memory.

By [Erwin Schomburg](#) on Saturday, January 15, 2000 - 07:00 am:

If this is really the code you were trying to run your careless dropping of values from stack is showing that you have not grasped the importance of controlling your stack balance in absolutely all branches of your application. However, as is it leads to severe stack underflow, i.e. decreasing the stackpointer at each turn around in your event queue. So your eventual coords@ values will be attempted to be written at absolutely unpredictable memory locations that may be far outside the areas Quartus has control over. So it may have triggered the hard reset sequence on this, with all your data intact until then....

May the Forth be with you!

/Erwin

By [Kevin Goodman](#) on Saturday, January 15, 2000 - 06:43 pm:

Thanks for the tip Erwin, however, rather than being careless and not grasping fundamental Forth concepts, I was simply playing around with the code and had accidentally left the "drop" in the nilEvent section of the case. That being said, I can't imagine a Forth programmer that has never accidentally made a stack balance related typo. It causes me great concern if this type of problem runs the risk of crashing the Palm.

Can't Quartus detect underflow conditions? At least during debugging?

Finally, the Quartus FAQ states that Forth shouldn't be able to mess up the Palm. I have to assume that this statement is made because each process runs in it's own protected address space or something.

So, my next question: is the FAQ wrong and something as simple as a stack underflow can cause the whole palm to barf because processes aren't as protected as they seem OR are we seeing a bug in Quartus that needs to be fixed?

By [Ron Doerfler](#) on Saturday, January 15, 2000 - 10:42 pm:

Hi Kevin,

I can tell you that I've made a gazillion errors and have had to soft reset my Palm hundreds of times, but I've never lost any data (except for that one time when I accidentally had the power button pressed by a finger when I reset it!).

Ron

By [Erwin Schomburg](#) on Sunday, January 16, 2000 - 07:10 am:

Kevin, you must have hit on the most unfortunate chain of events. Quartus does check for stack underflow, but only when exiting a definition. In your case you were operating a loop, and the event loop counting down the stack pointer at about system tick speed, of all bad things imaginable. The Tester module from the library may give you some better safety, but the rule for all design (not just Quartus) being tested on the real life device is a good and complete backup.

/Erwin

By [LGLisle](#) on Sunday, January 16, 2000 - 09:38 pm:

One thing I prefer doing is factoring out the whole contents of a loop into a separate word. I can then test it for stack effect independently. It also tends to make the code easier to read. I realize this can have a performance penalty, but for development purposes I put safety over performance. You can always tweak later.

--- Greg

By [Barry Marks](#) on Saturday, January 22, 2000 - 12:20 am:

It occurs to me that the answer in the faq was true even in your case. You seem to have triggered something that erased everything. I have no idea how. But it didn't corrupt anything.

If it had and you didnt know it and you did a backup with corrupt data, then the problem is very serious indeed.

I realize this is kind of a nitpicking technicality on my part but at the same time it's an important nitpicking technicality.

I just play with Forth on my palm. I don't know the language well. I crash all the time. And I've never lost anything yet. It's pretty stable. You just got unlucky and hit that one in a million situation.

By [Neal Bridges \(Nbridges\)](#) on Saturday, January 22, 2000 - 08:47 am:

If you really seriously scramble low dynamic memory on the Palm, it won't reset properly. I think this is a weakness of the Palm OS; it should be able to come back up no matter what the contents of lower RAM -- in the event of a looping reset, it should reset the lower RAM contents to something sane and continue. But it doesn't.

However, because of the way memory access is set up on the Palm, you can't accidentally overwrite or change anything in storage RAM. (You can of course do it on purpose, but you have to go through several steps to make it happen.) This is in sharp contrast to, say, the original daVinci, where there is no memory protection and you can overwrite every single byte of memory in the device with a single loop.

So Barry is right -- the FAQ says you can't accidentally corrupt or change data in storage RAM on the Palm. The worst case is that you might need a hard-reset, and then to restore your data via HotSync. And even that is very rare.

For a really transparent backup solution, I recommend Backup Buddy.

Neal

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String conversion

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): String conversion](#)

By [Matthew Blair \(Blair\)](#) on Friday, January 14, 2000 - 03:49 pm:

Hi,

I have a string that contains a floating point number. I would like to convert the string to an integer so that I can do calculations in fixed point. I know that I could call `>number twice` (once for the abscissa, once for the mantissa), but how can I combine these two in a reliable way without overflow?

For example, suppose the string is "123.456". I would like the resulting integer to be 123456.

Thanks,

Matt

By [Jim Hendricks](#) on Friday, January 14, 2000 - 05:03 pm:

couldn't you take the 123 as an integer, multiply by 1000 then add in the 456?

In a more generic way, multiply the mantissa by $10^{\text{digits in abscissa}}$.

Hope this helps,

Jim

By [Wade Carlson](#) on Friday, January 14, 2000 - 06:33 pm:

Why not convert the string to a float and then do your calculations on the float stack. It's much easier and more accurate.

```
: string>float ( c-addr u -- ) ( F: -- r )
>float if else 0e then ;
```

You can then use `f+`, `f*`, `f-`, and `f/` to do your calculations on the float stack. Let me know if you need help with my notation.

By [Mark Beckman](#) on Friday, January 14, 2000 - 08:17 pm:

Well I have done something similar and as I recall this works (not tested in months though)

```

\ >sd 7/23/99 3:43 pm mlb
\ string to scaled double
needs safe
needs core-ext
needs dblmath

: whitespace? ( char -- flag)
bl = ;

: skipwhitespace ( Addr Cnt -- Addr Cnt)
begin
  2dup swap c@ whitespace? and
  while
  1- swap 1+ swap
repeat ;

: >sign ( Addr cnt -- Addr cnt sign)
skipwhitespace dup
if \ if cnt
  swap dup c@ [char] - =
  if \ minus sign
    1+ swap -1
  else dup c@ [char] + =
    if \ plus sign
      1+
    then swap 1 \ if not - then + !
  then
  else swap 1 \ no chars still a +
then ;

\ Scale D. by N digits in the
\ current base
: scaleby ( d. n - d. )
dup 0< if
  0 swap - for base @ dm/ next
else
  0 ?do base @ dm* loop
then ;

\ Convert the string @ addr to a
\ double scaled to DIGITS in the
\ current base w/respect to the
\ decimal point (. is not req) I.E.:
\ s" -12.34" 0 >sd yields 12
\ s" -12.34" 2 >sd yields 1234
\ s" -12.34" 3 >sd yields 12340

```

```
: >sd ( addr cnt digits -- d.)  
>r >sign rot rot  
0. 2swap >number  
2dup swap c@ [char] . = and if  
  1- swap 1+ dup >r swap >number  
  drop r> swap - r> + scaleby  
else 2drop r> scaleby then  
rot dm* ;
```

By [Matthew Blair \(Blair\)](#) on Tuesday, January 18, 2000 - 08:24 am:

Hi all -- thanks for replying to the message.

Jim: That's the approach I have taken. I wanted to make sure that I wasn't reinventing the wheel, though, as is so often the case!

Mark: Thanks for the code. That looks a lot more sophisticated than my poor attempt at it!

Wade: I initially wanted to use integers since I thought I could save a few bytes in my database; however, I have since realized that a double-cell and a float are both 4 bytes... However, isn't there a performance advantage to using fixed-point arithmetic? I don't know, I'm just a newbie to this...

Thanks,

Matthew

By [Jim Hendricks](#) on Tuesday, January 18, 2000 - 09:25 am:

Matthew,

If I am correct, your performance advantage to using integer math is real. Anyone else can chip in their 2 cents to correct or enhance my understanding on this but if as far as I know, integer math is handled directly by the CPU whereas floating point must be handled in software, eventually resolving the operations down to integer forms that can be passed to the CPU. With this said, your performance advantage is going to be based on the efficiency of the floating point library used (in this case built into Quartus). Since I don't do a whole lot of float work, I don't know what the actual performance difference would be but what you have to question is if you are doing floating work as integer, you are basically in your own software doing what the floating lib would do for you. You have to decide for yourself if your routines are simple enough to gain an advantage over the float lib, or are complex enough that your chances of writing faster routines is rather slim. While I am a performance maniac, always looking for a faster way, when it comes to floats, I usually just use the built in libs. Hope this helps.

Jim

By [Matthew Blair \(Blair\)](#) on Tuesday, January 18, 2000 - 11:19 am:

Jim,

Thanks for your 2 cents (seems to go a long way there!). Doesn't the Motorola Dragonball have a built-in FPU which handles floating-point routines in hardware? Or is this different from what you have described?

Thanks,

Matt

By [Jim Hendricks](#) on Tuesday, January 18, 2000 - 04:46 pm:

That would have to be answered by the real Guru's, I thought the same thing but then I question, why mathlib (another float lib) and why Quartus with a built in lib? Although I have heard banter about float formats, maybe it's an issue that the Dragonball FPU (if it exists) is to far out of most standards for the average standards oriented programmer to work with?

Jim

By [Wade Carlson](#) on Tuesday, January 18, 2000 - 06:16 pm:

Floats work very well, and I don't think you will notice any performance slowdown if you are just doing the occaisional calculation.

Anyways, if you would rather convert your string to a single integer, try the following:

```
: string>num ( c-addr u -- n )
>float if f>d d>s else 0 then ;
```

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 23, 2000 - 08:12 am:

When I implemented floating-point in Quartus Forth, the goal was for fast, reliable, consistent float calculations for all the Palm OS versions back to 1.0. The floating point routines in the Palm ROM have egregious bugs in earlier Palm OS versions, and MathLib is only for OS2 and later.

It is certainly possible to interface to MathLib from Quartus Forth -- I've done some preliminary work on it, nothing complete as yet. Has anyone else played with it?

Neal

By [Matthew Blair \(Blair\)](#) on Monday, January 24, 2000 - 10:00 am:

Neal,

I've been using the floating-point routines mainly because I'm very inexperienced with using fixed-point. Can you say something about the relative advantages of fixed- versus floating-point on the Palm platform? Perhaps some examples of when one wins out over the

other?

Also, is there somewhere I can go to learn more about fixed-point arithmetic?

Thanks, and its good to have you back!

Matt

By [Neal Bridges \(Nbridges\)](#) on Monday, January 24, 2000 - 11:40 am:

Thanks, Matt. Good to be back.

Fixed-point is faster, more efficient, and more accurate for almost all types of calculations. When the range of values you are working with is very large (from really large to really small), floating point is sometimes the right choice.

As to where to turn for more information -- if you can give me some examples of what you want to calculate, I can show you how it is done in both fixed and floating-point. That should help for a start.

Neal

By [Matthew Blair \(Blair\)](#) on Monday, January 24, 2000 - 12:10 pm:

Hi Neal,

My app accepts three inputs and computes two outputs:

inputs:

odometer reading, to tenths of a mile
gallons purchased, unknown precision
total cost of fuel, to hundredths of a dollar

outputs:

miles per gallon (given previous and current entry)
cost per mile (given previous and current entry)

I guess I would be interested in the computations, but I would also be interested in the input-output aspect of this also, i.e., how to convert a string to a fixed-point number and back to a string. I have some notion of how this all would be done, but it would be great to see how a guru does it :^)

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RsrcEdit

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

RsrcEdit

By [Alex Alava](#) on Friday, January 14, 2000 - 10:52 am:

Can somebody give me some assistance with RsrcEdit? I have no problem implementing 1 menubar column but when I create a 2nd menu column, I cannot seem to select anything on the 2nd menu column. In fact, when I try to select the 2nd menu column, I cannot seem to reselect the 1st menu column. Any pointers on what settings need to be?

Thanks

Alex Alava

By [Erwin Schomburg](#) on Friday, January 14, 2000 - 11:07 am:

You may send me the resulting resource file, but my first guess would be to ask if all menu items (no matter which column) have been assigned unique IDs.

By [E. Ross Helton](#) on Friday, January 14, 2000 - 06:10 pm:

Hi Alex:

I would concur with Erwin about checking for unique ID numbers for each menu item. I had trouble like this when I first set up RsrcEdit form. The problem was resolved with I got the IDs set for each.

Make it a good day!

Ross

By [LGLisle](#) on Saturday, January 15, 2000 - 01:25 pm:

This points to a tool I would love to have, but do not yet have the knowledge to write. Call it a Resource Viewer. I would like to have a popup in Quartus that would allow me to see the assignments in the specified rsrc file. Show: type, ID# and maybe a label. In my old age, I am finding it hard to remember all these little details.

As far as that goes, I hope to write a memo viewer, but maybe I just need to break down and use one of the available hacks. It's just that the name "hack" makes me nervous.

--- Greg

By [Erwin Schomburg](#) on Saturday, January 15, 2000 - 01:52 pm:

Just FYI: You can export the assignments C-style or Quartus-style into a memo or doc file from within RsrcEdit.

/Erwin

By [Bill Marcy](#) on Sunday, January 16, 2000 - 08:57 am:

How about explaining how Erwin, thanks!

By [Dan Richardson](#) on Sunday, January 16, 2000 - 09:52 am:

Not Erwin, but hey.

My first big chance to answer a question.

In RsrcEdit, select, but don't open, the resource you want to list.

Do Menu|Options|Build Resource List

Select Memo or Doc, your choice, and select Forth.

Change the name if you'd like, it defaults to the name of the resource w/ a .h extension.

Tap OK.

If you chose memo, it comes up in the unfiled category with parens () around the name.

If Doc, it shows up as a doc file, for editing in QED or whatever.

Dan

By [LGLisle](#) on Sunday, January 16, 2000 - 09:28 pm:

Dan,

That's a help anyway, thanks. I guess you just re-export after each editing session. A bit clumsy, but better than nothing.

--- Greg

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Status of Float package ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Status of Float package ?](#)

By [Mike Will](#) on Thursday, January 13, 2000 - 09:23 pm:

I've been away from Quartus for the better part of a year. I'm wondering what the status of floating point is. I notice that Neal has a high-precision calculator app (commercial). Is the float package available? Has anyone done any more work on incorporating MathLib into Quartus?

Thanks

By Chapman Flack on Friday, January 14, 2000 - 07:41 pm:

I haven't checked in lately either, but I'll second this question. I know it's nice that Q4th provides its own floating support, but at the same time,

- it doesn't seem to implement all the functions
- it uses a peculiar format (FFP) rather than IEEE754
- the MathLib shared library is free and implements a full complement of functions in IEEE754 format
- There are other apps that require MathLib and who wants to devote memory to two different floating point implementations?
- Handspring is including MathLib in ROM...

So it seems like MathLib is becoming the de facto way to do floating point in PalmOS, and it would be a win for memory usage and data compatibility to produce a version of Q4th with the built in FFP code removed and all the float words implemented in IEEE754 by calling MathLib. Of course FFP->754 and 754->FFP words might be needed too.

Does anybody else think this would be a good idea?

-Chap

By [Wade Carlson](#) on Friday, January 14, 2000 - 07:49 pm:

I have used floating point calculations in my program without any problems. What are you all talking about? Why would you want to have your program require a bloated 50K mathlib package anyways? If you have any specific questions, I would be happy to answer, but float calculations work great!

By Chapman Flack on Friday, January 14, 2000 - 08:07 pm:

Let me try to clarify ...

- I don't dispute that the provided FFP routines work fine

- mathlib is about 50k because good float support requires a lot of code. The built in FFP stuff must account for a comparable amount of Q4th's size. OK, allowing for Neal's skill in assembly hand coding, maybe it's only 20 or 30 K.

So the question is not "why would I want a 50k mathlib" but rather "if I have any other app that uses mathlib, or if I have a Visor that includes mathlib out of the box, why would I want Q4th to blow -another- 20 or 30K supporting an incompatible floating format?"

Did I make more sense this time?

Thanks,
-Chap

By [mwill](#) on Friday, January 14, 2000 - 10:19 pm:

Actually, my problem with the built in Floats is the mantissa. It's only about 5 digits. I need something more like 10 for some apps (financial, mainly). Yes, I know about the 'superiority of integer math' but that hound don't hunt when the basis of your work is calculus and normalization.

The built-in package is brilliant (I've used it for more than a year now), but sometimes you need a bigger lever to move the earth.

Mike

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 23, 2000 - 08:24 am:

The floating-point routines built into Quartus Forth currently take 3740 bytes in total. If you bring in *float-ext*, it goes up another 1000 bytes or so.

See my previous posting about the possibility of MathLib interfacing.

Neal

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 23, 2000 - 11:54 am:

Mike, the maths built into the SCX high-precision calculator are not, in fact, floating point. They are 30-digit fixed-point, 15 to the left of the decimal point, 15 to the right.

Neal

By [Mike Will](#) on Wednesday, January 26, 2000 - 04:00 pm:

Got it. Thanks, Neal.

I'm trying to decide which way to go with numerics, that helps. My problem is that I need both

a huge dynamic range and high accuracy. Not Forth-type work, I know, but Quartus is too cool to give up.

Mike

By [Neal Bridges \(Nbridges\)](#) on Wednesday, January 26, 2000 - 04:10 pm:

I wouldn't say it's not Forth-like; you can certainly achieve that in Quartus Forth.

Neal

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Quartus App: LoanPayment v2.00 released

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Quartus App: LoanPayment v2.00 released

By [Barry Ekstrand](#) on Thursday, January 13, 2000 - 11:31 am:

Just a note to let all know that a major update to my Quartus-written LoanPayment app (v2.00) has been released, adding a bunch of user-suggested capabilities. LoanPayment is char-ware (charitable shareware), where ALL funds from registration are donated to the Juvenile Diabetes Foundation (PalmGear HQ is a partner with me in this, donating their regular service charge as well).

The evaluation copy is available at PalmGear HQ or at my website (<http://members.aol.com/EkstrandBB>). The evaluation copy has some functions disabled and an annoying nag box (yeah, I know, but after all, the point is to get registrations to generate donations to JDF). Registration for LoanPayment is \$10 at PalmGear HQ.

I want to thank all here on the Quartus forum who have offered their support and encouragement to me and for answering my questions along the way. Your help has been invaluable, and I really appreciate it - as does the local JDF chapter, who have enjoyed the benefit of registration donations from LoanPayment over the last 6 months.

Barry Ekstrand

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SysTaskDelay crash

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): SysTaskDelay crash](#)

By **Dan Richardson** on **Wednesday, January 12, 2000 - 07:01 pm:**

Program works fine, million gremlins OK.
There's an up/down counter that scrolls when you hold down a button.
I'm a little concerned that in a few years,
when Palms are 10 times as fast, it may scroll too fast.
So right after it displays a new number, I did

```
2. SysTaskDelay
```

which slows it down just perceptably.
However, it crashes after a few thousand gremlins.
Always on an info screen, which is an alert, and with the message
"blahblah written directly to memory manager data structures."
followed by " dynamic heap chunk got corrupted"

Comment out the single line of code, back to smooth as cream.

Anybody?

Dan

By **E.** on **Wednesday, January 12, 2000 - 08:57 pm:**

"Quartus Forth Specific Words" says:

```
SysTaskDelay ( delay. -- Err )
```

```
2. SysTaskDelay ok
```

```
.s <1> 0
```

```
ok
```

I think you want

```
2. SysTaskDelay drop
```

```
-E
```

By **Richardson** on **Thursday, January 13, 2000 - 10:18 am:**

Ahh, there you go.
So I was leaving the returned error code on the stack.
Thanks.

Dan

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Help with categories

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Help with categories

By [Matthew Blair \(Blair\)](#) on Tuesday, January 11, 2000 - 10:53 am:

Hi,

I want to implement a category list in my app. I assume that what I need to do is place a popup list in the form that I want to access categories, populate the list by finding out which categories are available, and handling triggered events. Is this correct?

Also, I did see a `systrap, FrmSetCategoryLabel` (or something like that), and I am unsure as to the purpose. It seems to be simply a substitute for `CtlSetLabel`.

I'm really confused...anybody who has tread this path before, your input is greatly appreciated!

Thanks,

Matthew Blair

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Compile error message

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
Compile error message

By [Barry Ekstrand](#) on Tuesday, January 11, 2000 - 08:16 am:

I have completed a major update to my LoanPayment program, which works fine and passes the gremlins test. My last task is to make the evaluation copy, which is simply the same program with some functions disabled, calling an alert when those buttons are tapped instead. I made the appropriate changes but on compile I crash, getting the following reset message: MemoryMgrNew.c, Line: 3970, Invalid handle

I am not able to see an obvious error in my code - I really only added the alert and replaced the code for those events to call the alert. Can anyone garner any insight from the error message above that might point me in the right direction to look? I suspect it is something simple, but I'm not seeing it.

Barry

By [Barry Ekstrand](#) on Tuesday, January 11, 2000 - 12:49 pm:

Ackpft....

I have found the source of my problem - an errant copy of the old resource file was inadvertently HotSync'd onto my machine and it didn't have all of the resources that were being defined and used <red face>. A stake has been driven through it's heart and my compiler is happy once again. Sorry for wasting the space on the board.

Barry

By [LGLisle](#) on Wednesday, January 12, 2000 - 08:32 am:

Barry

Is not wasted space, is warning of one of the many "things that go wrong" in development. Now if I can just remember them all! :-/

--- L. Greg Lisle

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Help with Tables

Quartus Handheld Software: Discussion Forum: Quartus Forth (PalmOS version): Help with Tables

By [Wade Carlson](#) on Tuesday, January 11, 2000 - 12:54 am:

I'm starting to embark on figuring out how tables work (I know, I've heard they are a pain), and after searching through the archives it sounds like most people have figured it out after reading through the following reference at the following link.

http://www.iosphere.net/~howlett/pilot/GNU_Pilot.html

However, the link is no longer good. Anybody else know where to get this reference?

By [Trevor Steele](#) on Tuesday, January 11, 2000 - 05:18 pm:

Hi Wade

Your right, the link has disappeared! I'll e-mail you the info which I downloaded from it and you can see if it's any help. I have managed to get some tables working under OS 3.0, but am having a few problems with OS 3.3. I'll be happy to help you if I can :)

Best regards

Trevor

By [Wade Carlson](#) on Wednesday, January 12, 2000 - 08:08 am:

Thanks again for the email. Boy, if even you are having problems with os 3.3, maybe I am wasting my time. It seems like it will take some time to master, but I am beginning to wonder if the benefits will outweigh the time involved or not. Maybe I am missing the point, but why couldn't I just make my own pseudo-table using just plain old formatted text, and then I can capture 'cell' selection events by capturing the pendown event and using [coords@](#). If I needed to make a table that could be edited in, I could just fill the form up with a bunch of aligned fields. 'Cell' selection could be captured by a fldEnterEvent. Am I missing something here? Would a real table be faster during runtime? (definitely not faster development time....)

By [LGLisle](#) on Wednesday, January 12, 2000 - 08:27 am:

Hey Wade,

I did a bit of sleuthing, and apparently Mr. Howlett has left the Palm fold.

Trevor,

If you ever figure out the table procedures, you might post some guidelines and sample code here.

--- L. Greg Lisle

By [Trevor Steele](#) on Thursday, January 13, 2000 - 08:45 am:

I've sometimes wondered about the advantages of tables as well! However once the code's written it's easy to reuse and the table has advantages such as being easy to scroll and automatically highlighting cells when touched with the pen, easy control of formating etc.

I'll try and put together some simple code to show how to do a table in Forth since my own is very complex as it is basically a mini spreadsheet. I would hope to get you something over the next few days, but bear in mind that the custom style using a callback does not work under OS 3.3. Other styles such as number do however work but formating is limited.

I'll get back as soon as possible

Trevor

By [Michael Rowe](#) on Friday, January 14, 2000 - 02:50 am:

After failing to get tables to work, I gave up and made my own fake table, using the method suggested by Wade Carlson. I drew some lines around the sections and ended up with something which looks a bit hoakey, but more or less does the job.

I am, however, still very interested in using real tables, and am awaiting Trevor's example with great anticipation.

--mrr

By [Trevor Steele](#) on Saturday, January 15, 2000 - 06:08 am:

Hi

Sorry it's taken me so long to getting around to producing a sample on tables. I really should have done this some time ago but other matters took priority.

Well here we go! The example below is a fairly trivial one, in that it shows how to draw a table and place the row and column number in each cell. It is not necessarily the best or most elegant way of doing a table but at least it's a start. As usual, I got a bit carried away and the table also shows how to create a table bigger than the screen and how to scroll it. You can play around with the number of visible rows and the scrollbar variables are automatically recalculated, however the scrollbar length has to be re-set in the resource. If you don't need either of these facilities then the code can be simplified accordingly. If anyone has trouble with the example I will be happy to mail you the resource file along with the table memo.

To try the example you will need to create the following resource using RsrcEdit or Pilrc

Database

Title: TableRsrc

Creator: p4ap

Type: ABCD (or any other suitable type but don't forget to alter the table memo accordingly)

ResourceDB: checked

The database contains tFRM 1100

ID: 1100

Type: tFRM

top: 0

width: 160

left: 0

height: 160

usable: checked

All other properties are set to 0

The form contains

Table2000

top: 26

width: 141

rows: 17

left: 10

height: 108

ID: 2000

Editable: checked

Add 3 columns each 45 wide

ScrollBar2001

top: 26

width: 7 (all scrollbars should be set to 7)

ID: 2001

left: 152

height: 108

Usable: checked

Set Value Min Value etc to 0

Good practice creating resources :).

```
\ table 00.01.13 16:55 TS
\ Draws a table and puts the row
\ and column number in each cell
\ Table is scrollable
```

```
needs toolkit
needs events
needs resources
needs forms
```

needs condthens

```
1100 constant tableform
2000 constant tableID
2001 constant scrollbar
17 constant numrows
3 constant numcols
9 constant visiblerows
```

```
variable row
variable col
variable currentrow
variable currentcol
variable toprow
2variable cellbounds
2variable _tableptr
2variable _scrollptr
```

```
create buffer 15 allot
```

```
0 currentrow !
0 currentcol !
0 toprow !
```

```
: tableptr ( -- &ptr. ) _tableptr 2@ ;
```

```
: drawcell
( &bounds. col row &table. -- &bounds. col row &table. )
callback
\ get row column and bounds address
\ from the stack and store
  2 pick row ! 3 pick col ! 5 pick 5 pick
  2dup cellbounds 2!
\ fetch y and x values
  2. d+ @a cellbounds 2@ @a
\ determine the row and col convert
\ to text and draw cell contents
  buffer 0 s" r " append row @
  0 <# #s #> append s" , c " append
  col @ 0 <# #s #> append
  swap >abs WinDrawChars
end-callback ;
```

```
: initialise-rows ( -- )
  numrows 0 do
\ check if row is visible
```

```

toprow @ dup i > 0= swap
visiblerows + i > and if
  true i tableptr TblSetRowUsable
  i tableptr TblMarkRowInvalid
  true i tableptr
  TblSetRowSelectable
\ set item style (CustomTableItem)
  numcols 0 do
  1 >byte i j tableptr
  TblSetItemStyle
  loop
\ set row height (important!)
  12 i tableptr TblSetRowHeight
  else
  false i tableptr TblSetRowUsable
  then
loop ;

: initialise-cols ( -- )
  numcols 0 do
\ set columns usable
  true i tableptr
  TblSetColumnUsable
  1 i tableptr TblSetColumnSpacing
\ set custom draw procedure
  ['] drawcell xt>abs i tableptr
  TblSetCustomDrawProcedure
  loop ;

: initialise-table ( -- )
  tableID GetObjectPtr _tableptr 2!
  initialise-rows initialise-cols ;

: HighlightTblItem ( -- )
\ check if the highlighted cell is in
\ the visible range. If so then
\ highlight.
currentrow @ toprow @ -
dup visiblerows < swap -1 > and if
  currentcol @ currentrow @
  tableptr TblSelectItem
then ;

: DrawTable ( -- )
  tableptr 2dup TblEraseTable
  TblDrawTable HighlightTblItem ;

```

```

: scrollptr ( -- ptr. ) _scrollptr 2@ ;

variable sclpage
variable sclmax
variable sclmin
variable sclval
0 sclmin !
0 sclval !

: initialise-scrollbar ( -- )
\ Set scrollbar variables based on
\ the total number of rows and
\ visible rows
scrollbar GetObjectPtr _scrollptr 2!
numrows visiblerows - dup
sclmax ! visiblerows min sclpage !
sclpage @ sclmax @ sclmin @ sclval
@ scrollptr SclSetScrollbar scrollptr
SclDrawScrollBar ;

: do-table ( -- )
FrmGetActiveFormID tableform = if
\ get column and row, store
\ and draw table
    event 7 cells + 2@
    currentrow ! currentcol !
then ;

: do-scroll ( -- )
\ Get the sclval and set = toprow
sclpage >abs sclmax >abs sclmin
>abs sclval >abs scrollptr
SclGetScrollbar sclval @ toprow !
initialise-rows DrawTable ;

: do-event ( ekey -- )
cond dup tblSelectevent = if
    do-table
else dup sclExitEvent = if
    do-scroll
thens drop ;

(ID) p4ap (ID) ABCD use-resources

: go

```

```
tableform showform initialise-table  
initialise-scrollbar  
DrawTable  
begin  
    ekey do-event  
again ;
```

If anyone has any questions on the example I'll be happy to try and answer them. Have fun, it's quite rewarding to see a table display and scroll!

Best regards

Trevor

By [LGLisle](#) on Saturday, January 15, 2000 - 01:32 pm:

Wow Trevor,
If you consider 3 days a long time for producing that much gratis code, what do you do when your being paid?!? :-)

THANK YOU!

--- Greg

By [Erwin Schomburg](#) on Saturday, January 15, 2000 - 01:55 pm:

Neal has us all spoiled, this forum normally expects next day delivery at worst. 8-)

May the Forth be with you!

/Erwin

By [Trevor Steele](#) on Sunday, January 16, 2000 - 07:55 am:

Actually when getting paid I design spectacle lenses (aspherics, progressives etc.).

As Neal has said before, Forth code is wonderfully re-usable and in fact about 60% of the code comes from one of my apps. The actual time taken to write the extra code and annotate it is measured in hours rather than days. Sorry Erwin I promise to try harder next time :-)

Best regards

Trevor

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 23, 2000 - 08:33 am:

Trevor, thanks for your hard work!

Neal

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Vectored Execution

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Vectored Execution

By [Winchell Chung](#) on Saturday, January 8, 2000 - 11:03 am:

Starting Forth explains Vectored execution as a powerful factoring tool:

```
variable pointer  
' myWord pointer !  
pointer @ execute
```

where you can change the address stored in "pointer".

Now, in Thinking Forth, Mr. Brodie has what is arguably a more elegant lexicon for performing vectored execution: Doer/Make.

Questions:

[1] any opinions on whether Doer/Make is a worthwhile tool or not?

[2] has anybody implemented Doer/Make for Quartus as yet?

If the two answers are YES and NO, I'll make a stab at implementing them, but I don't want to waste energy on something of questionable utility.

Thanks in advance!

By [Neal Bridges \(Nbridges\)](#) on Saturday, January 8, 2000 - 11:29 am:

I've never had any need for doer/make, but here it is if you wish to play with it:

```
\ doermake 00.1.8 11:28 am NAB  
  
: doer  
  create ['] noop ,  
  does> @ execute ;  
  
: make  
  cshare 36 + postpone literalxt  
  postpone ['] postpone >body  
  postpone ! postpone exit  
; immediate
```

Neal

By [Winchell Chung](#) on Saturday, January 8, 2000 - 06:39 pm:

Thank you kindly!

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The Turtle, a go playing program

Quartus Handheld Software: Discussion Forum: Quartus Forth (PalmOS version):
The Turtle, a go playing program

By **Joan Pons i Semelis** on Thursday, January 6, 2000 - 10:37 pm:

Hello!

Finally I got out a working release !

At <http://www.webarna.es/~joan/TheTurtle>

It's still rather weak, I'm not using resources at all, but I'm still learning about them.

Now some questions: I had some troubles with accept and roll when making the prc, but they worked without problems in Quartus. I just not use accept and defined my own roll, but I suppose it's not so fast.

For reassuming the quitting state when going back to the program, is better to save things in Dbmgr records or using resource fields would work?

Code is about 25K now, but will grow easily to 35K, while data space is about 32K and will go up to 45K probably, I could allocate most of it on runtime instead of having it from the prc via create I guess, in any case, can this fit in the daVinci ?

I assume that shortening my word's names will not affect prc size, what about inlining? Will speed up code? And the use of resource fields?

What about
: word ['] atom word_that_executes_atom ;
versus
xt's table filled up at starting the program
?

Too many questions ?

Thanks

Joan Pons i Semelis

By [Wade Carlson](#) on Thursday, January 6, 2000 - 10:58 pm:

Interestingly, I also cannot get any program to run after compiling if it uses the word ACCEPT. As you said, it will run fine if run directly from Quartus.

In terms of saving the program state when quitting the program, it is best to use PrefSetAppPreferences to save them to the Saved Preferences file (kind of like the Windows Registry). For a very EASY example of how to do this, look in the archives dated 'before May 14, 1999' and search for PrefSetAppPreferences for an easy routine that Neal wrote.

By [Neal Bridges \(Nbridges\)](#) on Thursday, January 6, 2000 - 11:10 pm:

ROLL is seldom-used. I recently found a subtle bug in it that only happens in certain circumstances; it's been fixed and will go out in the next update.

ACCEPT should work fine, though. I suspect you were compiling with a form resource that does not have the expected field resource in it.

Depending on how large your saved-state is, you can either create your own database, or the built-in Preferences database. If you only have a small amount of state, Preferences is easier. See the Swatch sources for an example.

To make the same app fit in the daVinci will require some retooling; bear in mind that the current Quartus daVinci Forth eval has deliberately limited codespace. And once you start using Palm resources, you'd have to find equivalent methods on the daVinci -- they're not the same OS at all.

Shortening your names won't help the app size -- by default the names aren't stored in the app. Inlining will make your app larger, and rarely faster except in special circumstances. Using resource bitmaps instead of inlined bitmaps will reduce your datasize.

To tell you more about where you can save space and effort, I'd need to see your code. If you'd like to send it, I'd be happy to review it for you.

Congratulations on your release! It looks quite interesting.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, January 6, 2000 - 11:20 pm:

Just looking at "The Turtle" -- are you opening any sort of form at all at the start of your app? I suspect you aren't.

If you have no form of your own design in your stand-alone apps, you should put "MainForm" in your apps initialization routine. Otherwise you are displaying without an underlying form,

which gives pop-up forms (hacks, Find dialog, battery warnings, alarms) a lot of grief.

Neal

By [Wade Carlson](#) on Friday, January 7, 2000 - 01:10 am:

Ahhhh, yes, adding a 'MainForm' statement allows ACCEPT to work in compiled programs.

By [Joan Pons i Semelis](#) on Friday, January 7, 2000 - 05:51 am:

Thanks a lot, I'll put the MainForm statement and I guess some other problems I had will dissolve.

I'll try to keep the state small enough to use PrefSetAppPreferences.

Keeping the code compatible for daVinci OS should not be a terrible burden as anyway it'll be running under gforth and other, but reducing the code size will be quite difficult.

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TRGpro

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

TRGpro

By **Dan Richardson** on Thursday, January 6, 2000 - 01:30 pm:

Neal-

Can we access the TRGPro's new functions, perhaps with systrap, or do you need to incorporate them first?

Their docs say

Currently, the Audio Library is implemented as a Palm OS shared library. To access the Audio calls, an application must search for the library, load the library if not found, then open the library. Opening the library returns a library reference number that is used to access the individual functions within the library.

and

The calling application must include the header file AudioLib.h. This file contains the required constant definitions, structure typedefs, and function prototypes for the library. In addition, this file maps library functions calls to the corresponding system trap instructions, through which all library routines are accessed.

TRG is shipping now, and I'd love to get at the improved audio.

Dan

By [Neal Bridges \(Nbridges\)](#) on Thursday, January 6, 2000 - 01:36 pm:

You can access shared libraries from Quartus Forth -- the Serial Library is one such, you can see an example of how it's done in *serial.txt*.

The actual systrap numbers of the functions in the library will be listed in their AudioLib.h header file.

I'd throw together a small example, but not having a TRGPro would slow me down a little for testing :)

Neal

By **Dan Richardson** on Thursday, January 6, 2000 - 02:49 pm:

Excellent, thanks.

I'll be relying on them to

By [Neal Bridges \(Nbridges\)](#) on Thursday, January 6, 2000 - 06:08 pm:

... to do what? :)

Neal

By Dan Richardson on Friday, January 7, 2000 - 10:09 am:

Had a whole long and basically irrelevant message there, didn't quite manage to delete it all.

Anyway, thanks!

Dan

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

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AutoRepeatKeyMask

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): AutoRepeatKeyMask](#)

By **Dan Richardson** on **Wednesday, January 5, 2000 - 08:42 pm:**

I need to know whether a hard key cursor press is a new one or the result of an auto-repeat.

Of KeyDownEvent, Palm says

The following data is passed with the event:

```
chr                The character code.
keyCode            Unused.
modifiers          0, or one or more of the following values:
```

```
-- (several modifiers deleted, and then) ---
```

```
autoRepeatKeyMask True if generated due to auto-repeat.
```

I'm using evtGetEvent. Where do I find this sort of modifier returned?

Dan

By **[Neal Bridges \(Nbridges\)](#)** on **Wednesday, January 5, 2000 - 11:31 pm:**

In the event buffer... in the modifiers field. I think it's the 6th and 7th bytes of the event structure, though I'd have to peek at the header files to be sure.

Neal

By **Dan Richardson** on **Thursday, January 6, 2000 - 12:48 pm:**

Umm, OK, cool.

Found "event buffer" in the ANSI section of your docs, and that points me at EKEY>CHAR. Where can I find an example of how to use EKEY>CHAR?

Someday, the whole world will know Forth, and you can stop teaching kindergarten.

Dan

By **[Neal Bridges \(Nbridges\)](#)** on **Thursday, January 6, 2000 - 01:15 pm:**

EKEY>CHAR is a standard word, but it's not what you want here.

You want to pull the 'modifiers' field out of the data buffer at 'event'. Here's what you need:

```
event 8 + @ \ character
event 10 + @ \ keycode
event 12 + @ \ modifiers
```

Neal

By **Dan Richardson** on **Friday, January 7, 2000 - 10:46 am:**

At the place where I want to act only if it's not an autorepeat,

```
event 12 + @ .
```

returns me 8 if it's the first press in a while,
136 if I press repeatedly, and 72 if I hold to autorepeat.
I assume this is the union of several modifiers.
How do I mask out the one I want?

Oh, and how do I know to look 12 past Event to get the modifiers?
Do I glean that from this bit of event.h?

```
struct keyDown {
    WChar chr;
    Word keyCode;
    Word modifiers;
} keyDown;
// ascii code
// virtual key code
```

Dan

By [Dan Richardson](#) on Friday, January 7, 2000 - 10:52 am:

Oh, and here are the relevant modifiers from event.h:

```
// keyDownEvent modifiers
#define shiftKeyMask          0x0001
#define capsLockMask         0x0002
#define numLockMask          0x0004
#define commandKeyMask       0x0008
#define optionKeyMask        0x0010
#define controlKeyMask       0x0020
#define autoRepeatKeyMask    0x0040 // True if generated due to
auto-repeat
#define doubleTapKeyMask     0x0080 // True if this is a double-tap event
#define poweredOnKeyMask    0x0100 // True if this is a double-tap event
#define appEvtHookKeyMask   0x0200 // True if this is an app hook key
#define libEvtHookKeyMask   0x0400 // True if this is a library hook key
```

Dan

By [Neal Bridges \(Nbridges\)](#) on Friday, January 7, 2000 - 10:55 am:

Here's an excerpt from *event.h* showing the offsets for a keyDown event:

```
// The event record.
typedef struct {
\ offset 0:
    enum events    eType;
\ offset 2:
    Boolean        penDown;
\ offset 4:
    SWord          screenX;
\ offset 6:
    SWord          screenY;
    union data {
\ offset 8:
        struct keyDown {
            Word chr;
```

```
\ offset 10:
    Word keyCode;
\ offset 12:
    Word modifiers;
} keyDown;
```

The modifiers are binary, so

```
(hex) 0040 constant autoRepeatKeyMask
```

```
...
event 12 + @ autoRepeatKeyMask and
```

will return 0 if it's not an autoRepeatKey, and non-zero if it is.

Neal

By **Dan Richardson** on **Friday, January 7, 2000 - 11:57 am:**

Ahh, bliss. It works. Thank you.

Thank you also for the event.h commenting.

The goal is to be able to figure this stuff out myself.

By [Neal Bridges \(Nbridges\)](#) on **Friday, January 7, 2000 - 06:55 pm:**

The other way to go is to create a struct. Note I've only implemented a couple of the event types here, for illustration purposes:

needs struct

```
\ a 'union' extension for structs:
: union 0 field 0 ;
: member >r 0 field r> struct ;
: end-member max ;
: end-union + ;

: SWordField 1 cells field ;
: WordField 1 cells field ;
: BooleanField 1 cells field ;
: enumField 1 cells field ;
: voidptrField 2 cells field ;
```

```
struct
    enumField eType
    BooleanField penDown
    SWordField screenX
    SWordField screenY
    union data
        member ctlSelect
            WordField controlID
            voidptrField pControl
            BooleanField on
        end-member
    member keyDown
        WordField chr
        WordField keyCode
        WordField modifiers
    end-member
```

```
end-union
end-struct EventType
```

With this, to get at the modifiers field of the keyDown member of an event, you'd do:

```
event keyDown modifiers @
```

Neal

By **Dan Richardson** on **Friday, January 7, 2000 - 08:52 pm:**

**That's pretty intense.
Allows you to lift sections out of .h files pretty much wholesale?
Lotta grafitti... <grin>**

Dan

By **harry** on **Sunday, January 16, 2000 - 03:54 pm:**

This is my code to test the keyDownEvent,

```
\ FunTest 2000.1.17 3:03 am CHC

needs Events
needs case

: do-keyDown ( -- )
  ." char" event 8 + @ . cr
  ." keycode" event 10 + @ . cr
  ." modifier" event 12 + @ . cr ;

: do-event ( ekey -- )
  case
    keyDownEvent      of do-keyDown endof
  endcase ;

: go ( -- )
  page
  begin ekey do-event again ;
```

My Question is, it seems the EKEY will automatically process the button keys except the Up/Down button.

If we need to capture the "Memo Pad" key and do something but no jump to Memo pad, how to do that?

Harry

By **Ron Doerfler** on **Sunday, January 16, 2000 - 06:50 pm:**

Hi Harry,

To process the Up/Down button, you should be able to do what you were doing:

```
: do-keyDown ( -- )
  ." char" event 8 + @ . cr
  ." keycode" event 10 + @ . cr
  ." modifier" event 12 + @ . cr
```

```

event 4 cells + @ \ equivalent to char above
dup 11 = if \ Page Up
  \ Page Up procedure
else dup 12 = if \ Page Down
  \ Page Down procedure
then drop ;

```

To capture a hardkey, you mask off the keys in your initial "go" word, and then when you get no return from EKEY (a nilEvent after the timeout), you check using the PalmOS command KeyCurrentState to see if the key is pressed. For this reason, you want to set the timeout of EKEY to a lower value than the default number of msec, which you can do by using (EKEY) instead.

You have to remember to unmask the hardkeys when you exit the app, or they will stay unresponsive until a soft reset is done. You need to intercept the event that exits the app (appStopEvent), unmask the hardkeys, and then execute the (BYE) command to exit the app yourself. There is a way to do this using EKEY, but I do it by inserting my own event handler to filter out those events I want to intercept before they get to the system (this was how Quartus _used_ to have to do it before Neal upgraded EKEY, but I got used to using the original way). So the first line of "go" places the execution address of my pre-handler at the event handler vector, and if an appStopEvent occurs, my handler unmaskes the hardkeys, exits the app, and sets "handled" to 1 so the system will not process the event further. If it's another event (like keyDownEvent), "handled" is set to 0 (false) so the system will handle the event after exiting my-prehandler.

```

: do-keyDown ( -- )
  ." char" event 8 + @ . cr
  ." keycode" event 10 + @ . cr
  ." modifier" event 12 + @ . cr
  event 4 cells + @ \ equivalent to char above
  dup 11 = if \ Page Up
    \ Page Up procedure
  else dup 12 = if \ Page Down
    \ Page Down procedure
  then drop ;

```

```

: do-nilEvent ( -- )
  KeyCurrentState d>s cond
  dup 8 and if \ Hardkey 1
    \ Hardkey 1 procedure
  else dup 16 and if \ Hardkey 2
    \ Hardkey 2 procedure
  else dup 32 and if \ Hardkey 3
    \ Hardkey 3 procedure
  else dup 64 and if \ Hardkey 4
    \ Hardkey 4 procedure
  thens drop ;

```

```

: do-event ( ekey -- )
  case
    keyDownEvent of do-keyDown endof
    nilEvent of do-nilEvent endof
  endcase ;

```

```

: my-prehandler ( &event. -- &event. )
  callback 2over @a
  appStopEvent = if

```

```

(hex) ffffffff. KeySetMask 2drop (bye)
1 handled
else
0 handled
then end-callback ;

: go ( -- )
['] my-prehandler eventhandler !
page
(hex) ffffffff87. KeySetMask 2drop \Hardkeys off
begin 5. (ekey) do-event again ;

```

Finally, I believe you have to do something to prevent a single hardkey press from triggering your hardkey routine repeatedly at every (EKEY) timeout. I did something more complicated (implementing a key repeat timing mechanism in software), but if you want a single press to be processed, you should be able to modify the do-nilEvent word to make sure that the key is released before you act on the press again, something like below. I've not tested this, and I also think it could be more efficiently coded, but I hope I haven't erred.

```

variable keypressed
false keypressed ! \ Initialization

: do-key? ( -- do-flag )
keypressed @ false = if
  true dup keypressed !
else
  false
then ;

: do-nilEvent ( -- )
KeyCurrentState d>s cond
dup 8 and if \ Hardkey 1
  do-key? if
    \ Hardkey 1 procedure
  then
else dup 16 and if \ Hardkey 2
  do-key? if
    \ Hardkey 2 procedure
  then
else dup 32 and if \ Hardkey 3
  do-key? if
    \ Hardkey 3 procedure
  then
else dup 64 and if \ Hardkey 4
  do-key? if
    \ Hardkey 4 procedure
  then
else false keypressed !
thens drop ;

```

If you have a need to allow key repeating with an initial delay, let me know and I'll try to extract that portion from my code.

Ron

By [harry](#) on Monday, January 17, 2000 - 07:00 am:

Thanks Ron, for the detail explanations.

In addition to the keyDownEvent, it seems that some other events will not simply return from EKEY, for example ctlEnterEvent and ctlExitEvent.

In our application, we want to do the effect like numeric buttons in "Caculator", if we use ctlSelectEvent to paste the pressed bitmap, the inverse button rectangle field will be viewed first, it is not a very pleased presentation.

I think the prehandler is a must to do some neat applications.

Thanks again

Harry

By [Ron Doerfler](#) on Monday, January 17, 2000 - 12:34 pm:

I also use it for another unusual situation. My ActiveKey app overlays touchpad character grids on a memo so you can tap the screen to input characters. Since a tap into a field is taken by the system to mean that you want to reposition the cursor in the field, I have to intercept the penDownEvent, penUpEvent and penMoveEvent with a prehandler.

I believe Neal has described before how to do this sort of thing by using EKEY (which involves the execution token of EKEY, I think), but I got into the habit of using a prehandler early on when it was used in early Quartus examples. For example, I just looked at Neal's DUCO Roman Calculator app (for which the source is in the file area) to see what he did in his calculator app. He used ctlSelectEvent, which is what you didn't want. However, he also used a prehandler called "simple-handler" to do his menu events, which can now be handled directly by EKEY.

Perhaps when Neal gets back he can comment on how to intercept these other events using EKEY.

Ron

By [Ron Doerfler](#) on Monday, January 17, 2000 - 12:50 pm:

It just occurred to me--Neal discussed ctlEnterEvent and how to get this event in a discussion titled "CtlSelect/Enter/RepeatEvent" on this forum back on December 13. You probably would be interested in reading through that thread.

Ron

By [Ron Doerfler](#) on Monday, January 17, 2000 - 12:53 pm:

Oops, December 24 is shown as the date on the above discussion when you list the "Topics", because that was the date of the last post on it (the first post was on Dec. 13).

By [Erwin Schomburg](#) on Monday, January 17, 2000 - 01:41 pm:

There is more than one way to go here. If you don't like the idea of a pre-handler you might want to look at my Quintominoes sources. At one time during its design I felt like I had shot me in the foot with pre-handling, so I split up the functionality of EKEY by using EvtGetEvent, handled the event stuff the way I wanted, then passed to HandleEvent, but only the ones I wanted further treated by the system, withholding e.g. hardkey presses from it.

/Erwin

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Help with Gremlins

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Help with Gremlins

By [Wade Carlson](#) on Wednesday, January 5, 2000 - 08:35 pm:

I have finally finished my very first app and it works perfectly! No crashes, etc when I do all kinds of strange stuff. But, for some reason it crashes when running Gremlins on the emulator and it crashes every time at around event 1055, giving me an error 'Form.c, Line: 1272, Object not in form'. I have tried to STEP through the gremlin at the event it is crashing at, but I still cannot see what it is doing to crash my program. I've tried looking though the generated log file, but cannot make any sense of it. I'm using a Palm III with OS version 3.02, while my emulator is using a OS 3.1 rom. Could this be the problem? There are very little useful docs that come with the emulator program.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, January 5, 2000 - 11:30 pm:

You can log gremlin events to a file; this will give you a clue as to what gremlin is causing it to fail.

If you wish, send me the app and I'll run it with the debugger on, and try and spot where it fails.

Neal

By [Wade Carlson](#) on Thursday, January 6, 2000 - 12:14 am:

I'm very sorry to have to burden you, but I think that I will have to resort to sending you my files. I tried the log gremlin events option (checking and unchecking many different options), but I can't make much sense of it. It's just a list of System Calls that don't mean anything to me. Anyways, I will be emailing you. Like I said, the program seems to run fine on it's own, so maybe I am just wasting my time???

By [Neal Bridges \(Nbridges\)](#) on Thursday, January 6, 2000 - 12:33 am:

Probably it's nothing to trouble yourself about, but I'm curious myself. I'll let you know.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, January 6, 2000 - 01:19 am:

Thanks for sending the app, Wade. I've discovered that the trouble only occurs if your registration form is called many many times -- I haven't figured out why it happens, but if I disable your registration popup, the gremlins run like the wind.

So that narrows it down -- and since your users are likely to run that registration routine maybe once (which works fine), there's nothing to worry about. I'll poke at it further and see if I can see just why the system is eventually becoming confused about the first form.

Neal

By [Wade Carlson](#) on Thursday, January 6, 2000 - 04:34 pm:

Curiously, your right that gremlins runs fine on it if the popup for it is disabled, but when running it normally (w/o disabling the popup) on my Palm III, I can't seem to re-create the error no matter how many times I use the popup. Very bizzare. BTW, I realized that I forgot to comment out the line 'include stackshow' from the txt files I sent you. It was left over from when I was doing my debugging (a little small utility to monitor what the stack's current value during runtime). I hope it didn't slow you up too much!! Thanks again for your help. I will work more on narrowing down what part of the popup is causing the problem.

By [Neal Bridges \(Nbridges\)](#) on Thursday, January 6, 2000 - 04:46 pm:

'stackshow' didn't slow me down, no -- as soon as it wasn't found, I commented out the 'include' so I could see if you were using anything from that library, and you weren't, so no problem.

As to the error, I can't recreate it either even on the emulator, in isolation. Maybe it's a sequence of events that's to blame -- battery dialog, find dialog, alert box, keyboard popup, form popup, etc.

If your app gremlins its way to a million or so without that routine in, I'd feel comfortable that it's rock solid and ready to go.

Neal

By [Wade Carlson](#) on Tuesday, January 18, 2000 - 11:44 pm:

For anybody that's keeping score, here are some words of advice:

If your program won't run the Gremlins cycle, then someday, somewhere, some user will find a way to crash your program. I learned this the hard way after having a few users complain of system resets from my program.

Don't always assume that what you expect the user to enter is what the user will actually enter!

BTW, I fixed my proggie, it now makes a million gremlins! :)

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Unimplemented Float words

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Unimplemented Float words](#)

By [Winchell Chung](#) on Wednesday, January 5, 2000 - 03:52 pm:

Alas, it looks like Quartus Forth does not implement the words FCOS or FSIN. I had gotten my spherical to rectangular co-ordinate calculator working, using only integer math. I was experimenting with converting it over to floating point math, in an attempt to improve the accuracy. But writing my own implementation of FCOS and FSIN is a little more than a beginner like me can handle.

STARTING FORTH makes a case for floating point math being superfluous, but that book was written before math co-processors. What is the consensus in the Forth community nowadays? Are floats hideously evil or a standard feature?

By [Neal Bridges \(Nbridges\)](#) on Wednesday, January 5, 2000 - 04:33 pm:

There's a quick version of FCOS and FSIN based on the integer SIN and COS in the file area -- it gives four decimal places of precision. Give it a try.

Neal

By [Winchell Chung](#) on Wednesday, January 5, 2000 - 08:45 pm:

That would be excellent! What is the name of the file? I've been through the file area and cannot seem to locate it.

I was toying with the idea of building on the integer SIN and COS, and trying to make a subroutine to interpolate the in-between values.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, January 5, 2000 - 11:32 pm:

I think it may not have survived the bus-ride over to the new site. I'll repost it.

Neal

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Source File Management

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Source File Management](#)

By [Kristopher Johnson](#) on Wednesday, January 5, 2000 - 02:59 am:

I've been doing all of my development on my Visor Deluxe in the Memo Pad. But I now have a couple dozen source "files" (memos, actually), and I'd like an easy way to move them back and forth between the Visor and my computer where I can use a Real Source Editor if I want to.

As far as I can tell, Palm Desktop (for Windows) doesn't provide an easy way to select a bunch of memos and save them all as individual files. You can export all the memos as one huge file, or export each memo individually (and tediously).

The pilot-link package for Linux provides a way to extract all the memos, but it saves them as a Unix mailbox file rather than as plain text files. I'm sure that's useful for someone, but not for me. And even if it was, on Linux I have to use serial HotSync, which seems incredibly slow after being spoiled by USB.

So, now I'm thinking that using the Doc format might be the key. Unfortunately, I have been unable to find a text-to-doc converter that is easy to use. MakeDocW.exe provides all the necessary options, but you have to manually convert each file individually. MakeDocBatch and DocInOut let you do multiple files at once, but they strip carriage returns out of the files and I can't find a way to disable that.

So, it seems that every solution I've tried has some onerous problem. Can someone suggest a better way?

By [Yaakov](#) on Saturday, January 8, 2000 - 10:36 am:

If you ever decide to get back to using pilot-link for mass Quartus sources manipulation, here's the solution I'm using. Not very convenient, but better than nothing.

The "memos" utility of the pilot-link package has an option, `-d <dir>`. The utility will create that directory, if it doesn't exist yet. Each memo will be saved in subdirectories of `<dir>`. Each subdirectory will be the name of a category on the Pilot, and will contain the memos in that category. Each memo's filename will be the first line (up to the first 40 characters) of the memo.

Note that if you have two memos in the same category whose first lines are identical, one of them will be overwritten. I don't duplicate entries, so I don't care.

Go into the subdirectory where you want to edit memos and edit them. Then use the **install-memo** utility to copy the memos back to the Palm. Use `-c` and `-r` command line keys. E.g.:

```
install-memo -r -c MyForth *
```

-c MyForth means "install the memos into the specified category (MyForth in this case. **-r** means "erase the memos in that category from the handheld before copying from the desktop machine" (needed to avoid duplicates).

Two things to remember: (1) This method doesn't preserve "private" bit of the memo pad records. You'll have to manually set it back if you need. (2) if your memos titles contain spaces (as all Quartus Forth sources do), you won't be able to use * to specify all the files in the current directory at the shell command line. I use a small perl program to do so:

```
perl -e '@FF=<*>; system "install-memo", "-r", "-c", "MyForth", @FF'
```

/Yaakov.

By **Kristopher Johnson** on **Friday, January 14, 2000 - 04:24 am:**

Thanks. I didn't know about the **-d** option--that would have done what I wanted.

I'm now using the Doc Toolkit on Linux, along with some scripts. I've toyed with the idea of adding some more features to Doc Toolkit, but I'm basically happy with how it's working.

Now if I can just figure out a way to do everything on Windows, I'd be thrilled. (Not that I love Windows, but the USB HotSync is a lot faster than serial.)

- Kris

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Greyscale bitmaps

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Greyscale bitmaps](#)

By [Jim Hendricks](#) on Tuesday, January 4, 2000 - 05:18 pm:

I am interested if any work has been done in Quartus to enable greyscale bitmaps as pioneered by Edward Keyes and Wes Cherry. If not, I am wondering where I can still get source materials as to how this is accomplished so I can give it a try.

Thanks, Jim

By [nbridges](#) on Tuesday, January 4, 2000 - 09:35 pm:

Here's something to get you started. It's for Palm OS 3.0 and later.

```
\ color 00.1.4 8:44 pm NAB
```

```
needs toolkit
```

```
0 enum mode
  mode DisplayModeGetDefaults
  mode DisplayModeGet
  mode DisplayModeSetToDefaults
  mode DisplayModeSet
  mode DisplayModeGetSupportedDepths
  mode DisplayModeSupportsColor
```

```
: color-depth ( bits -- )
  0 sp@
  0. 2swap
  0.
  0.
  DisplayModeSet >byte
  ScrDisplayMode throw 2drop ;
```

```
: grayscale ( -- ) 2 color-depth ;
```

```
: monochrome ( -- ) 1 color-depth ;
```

```
: >rgb ( r g b -- rgb. )
  swap >byte or swap ;
```

```
: rgb> ( rgb. -- r g b )
  swap dup 8 rshift swap 15 and ;
```

```

: gray ( 0..255 -- r g b )
  dup dup ;

: set-colors ( fore-rgb. back-rgb. -- )
  sp@ 0. 2swap 0. 2over 16 m+
  WinSetColor 2drop 2drop ;

: get-colors ( -- fore-rgb. back-rgb. )
  0. 0. sp@ 0. 2over 12 m+ 0.
  WinSetColor ;

: foreground ( rgb. -- )
  sp@ 2>r
  0. 0. 0. 2r> WinSetColor 2drop ;

: background ( rgb. -- )
  sp@ 2>r
  0. 2r> 0. 0. WinSetColor 2drop ;

: color: ( r g b "name" -- )
  >rgb 2constant ;

```

```

0 gray color: black
64 gray color: dark-gray
128 gray color: light-gray
192 gray color: white

```

```

\ Example:
\ grayscale
\ light-gray background
\ black foreground
\ page

```

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 4, 2000 - 10:00 pm:

I just fixed a last-minute bug in *colors*, so if you're reading this and you already downloaded it, download it again.

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 4, 2000 - 10:09 pm:

Here's another function that might have some use when the color Palm devices roll around:

```

: color>gray ( r g b -- gray )
  100 877 */ swap 100 170 */ +
  swap 100 334 */ + ;

```

Neal

By [Jim Hendricks](#) on Wednesday, January 5, 2000 - 10:11 am:

Neal, do you ever sleep?

Thanks for the lib, I will play with it later and then probably hit you up for a question or too since I always like to understand the libs I use.

By [Jim Hendricks](#) on Wednesday, January 5, 2000 - 10:48 am:

Very cool!!!

Now for some questions:

From what I can tell, the grayscale support is being accomplished through OS calls. The original work from Edward Keyes and Wes Cherry I believe was a hack (not as in hack master) that bypasses the OS and maps directly in mem. If these are OS calls, neat of 3Com to add the support instead of requiring an OS bypass to use the feature. My next question would be are these calls documented (I know RTFM but I'm lazy)

As a side question now. Working with your color lib, I see how all the drawing uses the foreground color & background color, but what of bitmaps. I assume the bitmaps would be monochrome based on the current fore/back color. Is there any standard for color bitmap resources? And Neal, I'm not asking for you to code color bitmap support for Quartus! Instead I would love to take on the challenge if it is a reasonable one and submit the result for scrutiny by and for the Quartus community.

One last thing, any way to set/change colors on the shift bar at the bottom of the standard Quartus form? Just a question since the bar itself maintains the original b on w color but the shift indicator assumes the fore/back currently set.

Thanks Neal, and get some time away from the computer, you deserve it!

By [Neal Bridges \(Nbridges\)](#) on Wednesday, January 5, 2000 - 10:56 am:

The calls are in fact documented, yes.

Color bitmap support is already built into Palm OS 3.0 and later. A properly defined bitmap will automatically draw itself to the current color depth. I haven't looked to see what tools are available to make grayscale bitmap resources; perhaps you can turn something up.

To set an entire form to the same colors, you must re-draw the form, so do (for instance):

```
grayscale  
black background  
white foreground  
MainForm
```

Neal

By [Jim Hendricks](#) on Wednesday, January 5, 2000 - 12:37 pm:

OK, Thanks Neal, I will look at the docs to expand my horizons!

You refer to a properly defined bitmap, since I have not looked at your bitmap lib, this may be a stupid question, is a properly defined bitmap allowing for multiple bit planes or only 1.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, January 5, 2000 - 01:33 pm:

There are both types of bitmap. The *bitmap* library module makes properly-defined 1-bit monochrome bitmaps. The grayscale format is an extended version of that bitmap format, described in the docs.

Best thing would be to find a utility to help you make resources out of grayscale bitmaps.

Neal

By [Jim Hendricks](#) on Thursday, January 6, 2000 - 02:00 pm:

OK, I feel stupid now. I looked at the API docs from Palm, even updated to the latest API docs. I can't find any refs to what is a properly defined bitmap. For that matter I also can't find any references to the tBMP resource. Can anyone lead me to the right docs? Tks

By [Neal Bridges \(Nbridges\)](#) on Thursday, January 6, 2000 - 03:47 pm:

Check the WINDOW.H in the Palm SDK. It details all the structures that define bitmaps.

Neal

By [Jim Hendricks](#) on Thursday, January 6, 2000 - 03:59 pm:

Great, I will check it out, will need to dl the SDK though. I guess I shouldn't have assumed that the SDK docs would actually document this, what was I thinking, docs that document!?

Thanks, Jim

By [Jim Hendricks](#) on Friday, January 7, 2000 - 12:30 pm:

What fun plowing through .h files (NOT)

Neal, the window.h file contains the old bitmap definitions, for the new definitions that support multiple bitplanes and apparently a colormap, you look in windownew.h.

Out of curiosity I am interested in the compression mentioned for bitmaps, both old and new. Looking through the API's I was able to find ScrCompressScanLine and ScrDecompressScanLine but these are documented as for system use only. Has there been any investigation into what the bitmap compression is and how as a developer I can implement it?

Secondly I am interested in the Tbmp resource. I come from a WinTel background and am

therefore very weak in the concepts of resource databases. The Tbmp resource is not documented in any of the docs so I am beginning to suspect that the resource database allows for user created resources and Tbmp is one of them. Is this assumption correct?

Thanks, Jim

By [Neal Bridges \(Nbridges\)](#) on Friday, January 7, 2000 - 06:10 pm:

If you hunt down the sources to PilRC, the bitmap compression routine is in there. You wouldn't ever need to implement it though; compressed bitmaps are automatically uncompressed for display by WinDrawBitmap.

I believe 'Tbmp' is in fact documented. It is the official resource type for bitmap resources in the Palm OS. However, as far as I know nothing in particular references that type directly -- you could name them "Tbit" and have just as much success with them.

Neal

By [Jim Hendricks](#) on Saturday, January 8, 2000 - 02:15 pm:

I will have to look at PilRC. The reason I am interested in the compression is I want to do more than just provide a greyscale version of the bitmap lib, I want to also provide a lib that would allow saving the bitmap as a Tbmp resource, preferably compressed if that actually provides a benefit. This would then allow onboard development of greyscale Tbmp resources since currently RsrcEdit doesn't provide a greyscale Tbmp editor. Just some idea's, will have to see now if I am up to the challenge.

Thanks, Jim

By [Jim Hendricks](#) on Friday, January 21, 2000 - 09:25 am:

Well, as promised, I worked on the grayscale bitmap, please see below for my proposed changes to the bitmap lib:

```
\ bitmap 98.10.7 8:45 pm NAB
\ color adaptation 1/20/00 9:00 pm JEH

: cbitmap ( version depth height width "name" -- )
  create
  tuck , , \ save width, store width height
  \ bytes/line ( must be even )
  7 + 8 / dup 1 and + ,
  0 , \ flags
  c, c, 0, 0, 0, store depth version reserved
does>
  >abs WindDrawBitmap
```

```

;
: bitmap ( height width "name" -- )
  0 rot rot 0 rot rot cbitmap ;

```

The bitmap word on my pilot is using `-rot` from my own lib in replacement for the double rot operations. I didn't include `-rot` in the bitmap lib since it seems it really should belong to a stack effects lib.

Additionally I propose adding the following word to the color lib:

```

: grayscale16 ( -- ) 4 color-depth ;

```

This allows use of the PalmIIIx and PalmV/Vx support for 16 scale gray. I tried working with an 8 color depth but that seems to cause an exception.

Now if I could just figure out how to set all the color values for each grayscale mode, seems you can only directly manipulate the foreground and background which would apply to text, and drawn graphics, not to bitmaps. There is support for a color map within the new bitmap structure, I will have to experiment further to see how this works since the PilRC doesn't make use of the color map.

BTW, for use of `cbitmap`, use the same as `bitmap` with the exception that when defining the `cbitmap` use 1 as the version and 2 or 4 as the depth. With 2 as a depth you get 4 gray scales, with 4 as a depth you get 16 gray scales. When defining the bitmap data, instead of coding single bits to represent the normal 2 states of a bitmap, use either 2 bits per pixel for 4 gray scales, 4 bits per pixel for 16 gray scales. Remember that height and width is still the height and width of the actual bitmap, and that a row still needs to have 0's padded to the right to round the data in row to be word aligned.

By [Jim Hendricks](#) on Tuesday, January 25, 2000 - 11:33 am:

Neal, just wondering if there is any merit in my above meentioned suggested changes to the quartus bitmap lib? If you just haven't had the chance to look at it, fine, I just wanted to make sure it wasn't overlooked.

Thanks, Jim

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 25, 2000 - 01:10 pm:

I like your changes, Jim. Thanks for doing the work. I haven't played with them yet but I will soon.

Neal

By [Jim Meadows](#) on Tuesday, February 15, 2000 - 02:31 pm:

I plan on trying out your (Neal's & Jim's) greyscale bitmap routines in an application I am working on. However, I (another Jim) ran across something that makes me wonder about future compatibility of the OS 3.0 calls at:

http://oasis.palm.com/devzone/knowledgebasearticle.cfm?article_id=1147:

Here is an excerpt:

There isn't any supported API to draw to the screen in gray. You can do that by using the current hacks that write screen memory. Once again, when you do this we'd prefer you use the new API to verify that the screen is as expected before you mess with it.

Q: Okay, thanks, that's cool. But I see some stuff in the headers that kind of looks like API to draw in gray. Can I use it?

A: It's not supported.

Does this mean these calls might not work the same in future releases?

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 15, 2000 - 02:40 pm:

They're talking about different mechanisms. The WinSetColor system call works just dandy in OS 3.5.

Neal

By [Jim Hendricks \(Jimh\)](#) on Tuesday, February 15, 2000 - 03:12 pm:

Jim, the knowledgebase article you provided indicates you can't go above 2bpp grayscale, That is not true, you can go up to 4bpp without problem, I haven't tried any higher. 3bpp also seems to be a problem. When I was researching the grayscale issue, I seem to recall seeing a presentation from 3com given at the last Palm conference that indicated that all the API routines for grayscale were supported. With the advent of color in OS3.5, they are definitely supported. I haven't messed with OS3.5 yet though to know if my changes to Neal's bitmap routines work in 3.5 (I assume they do)

Jim

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 15, 2000 - 03:17 pm:

Bits-per-pixel (bpp) increment in powers-of-two, so 3bpp isn't available on any platform. 2bpp

grayscale is available on the older Palms; 4bpp grayscale is available on the newer Palms with the EZ DragonBall processor in them (if I recall correctly, this is the IIIx, V, and Vx).

The colour devices are in 8bpp mode by default -- a paletted 256 colour display.

Neal

By [Garth T Kidd \(Garth\)](#) on Monday, March 13, 2000 - 11:37 pm:

I'm trying out ScrDisplayMode as practice for calling PalmOS functions. Is it just me, or does color-depth refer directly to bits on the stack when constructing arguments? :)

Hmmm.

```
: GetDisplayMode ( -- 2w 2h 2d 2c )
  \ put some destinations on the stack
  0. 0. 0. 0.
  \ get the stack pointer
  sp@ ( ptr 0 )
  drop dup 16 + swap ( ptr+32 ptr )
  \ put dword pointers on the stack
  do
    i 0
  4 +loop
  scrDisplayModeGet >byte
  ScrDisplayMode
  throw ;
```

Yeeeeehaaarr! Y'know, I think I'm getting the hang of this.

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 11:50 pm:

I'm not sure I understand your question, Garth, or your code. While your method of producing stack pointers might sometimes work, it will likely as not fail; there is no guarantee that you can turn the 32-bit stack pointer into a 16-bit one just by throwing away the top half. At best, this technique will be unreliable.

Try dull code first; get that to work. Later, if it's necessary, make it clever.

Neal

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 11:57 pm:

Wait, I think I do understand your question. Yes, one trick you can use in Quartus Forth is to pass a pointer directly to an item on the stack.

```
0 sp@ ( x &x. )
```

SP@ returns a 32-bit pointer to the top of the stack, which can sometimes save the creation of a temporary variable.

But do be careful when manipulating 32-bit pointers; with the increasing amount of dynamic memory in recent models, SP@ stands every chance of having a high-cell that is NOT 0. Manipulate 32-bit pointers as 32-bit pointers.

Neal

By [Garth T Kidd \(Garth\)](#) on Tuesday, March 14, 2000 - 07:29 am:

Aah. So, is there an equivalent of do..loop that handles 32-bit numbers? I'm having trouble finding words to handle double-words...

By [Garth T Kidd \(Garth\)](#) on Tuesday, March 14, 2000 - 08:15 am:

I've found double.txt now. Oops.

```
: cleanGDM ( -- 2w 2h 2d 2c )
  \ put some destinations on the stack
  0. 0. 0. 0.
  \ get the stack pointer and make 4 addresses
  sp@ ( ptr 0 )
  2dup 4 m+
  2dup 4 m+
  2dup 4 m+
  \ add the last argument...
  scrDisplayModeGet >byte
  \ ... and call the function
  ScrDisplayMode
  throw ;
```

seems to do the trick:

```
cleanGDM d. d. d. d.
```

returns

```
0 1 160 160 ok
```

as expected. Wahoo!

By [Neal Bridges \(Nbridges\)](#) on Tuesday, March 14, 2000 - 04:49 pm:

Looks good!

Neal

Add a Message

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E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Displaying .bmp files

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Displaying .bmp files](#)

By **Jim Meadows** on Tuesday, January 4, 2000 - 03:00 pm:

If I have a standard .bmp file on the PC that I want to display on the palm screen, what steps should I perform. Any sample code/examples available?

By **[Neal Bridges \(Nbridges\)](#)** on Tuesday, January 4, 2000 - 03:29 pm:

One way is to convert it to black and white with your favourite paint program, and then use PilRC on the desktop to convert it to a Tbmp resource.

Alternatively, and possibly simpler: download TealPaint -- it comes with Windows utilities to turn bitmaps into TealPaint images, which you can then turn into Tbmp resources with RsrcEdit.

Neal

By **[Ron Doerfler](#)** on Tuesday, January 4, 2000 - 05:27 pm:

It was not obvious to me at first how to turn TealPaint images into Tbmp resources using RsrcEdit, so here's the procedure. After you have a TealPaint image (I created mine right in TealPaint on the Palm), you save it into a named TealPaint database (the default is Pictures). Then you exit and evoke RsrcEdit. You select the TealPaint database (e.g., Pictures) and execute the Open TealPaint Database menu option in RsrcEdit to open it. You select the image you want and Copy it. Then you exit that database, go to your own, and Paste it to make it become a Tbmp.

Ron

By **[Neal Bridges \(Nbridges\)](#)** on Tuesday, January 4, 2000 - 06:14 pm:

Thanks Ron!

Neal

By **Jim Meadows** on Tuesday, January 4, 2000 - 08:58 pm:

Thanks! I do have another question ... although I have used RsrcEdit some, is there a good tutorial available for it to help understand its use better?

By **[Neal Bridges \(Nbridges\)](#)** on Tuesday, January 4, 2000 - 09:39 pm:

There's some documentation that comes with RsrcEdit -- been awhile since I looked at it, but it's a good starting point.

Neal

By [Ron Doerfler](#) on Tuesday, January 4, 2000 - 11:15 pm:

Steven Donahue's tutorial in the Contributed Files area discusses using RsrcEdit along with creating Quartus apps.

I find RsrcEdit to be wonderful--it's perfect for portable coding. Remember to use the Preview button to preview your forms as you make them (and use a hardkey to escape out of the preview). On a cautionary note, don't preview a form if you have a menu ID assigned in it that doesn't exist yet, or you'll end up with a soft reset, losing the work you've done since entering the editor for that form.

Ron
(who's done that a few times)

By [E.](#) on Wednesday, January 5, 2000 - 12:07 am:

I'm not sure if RsrcEdit traps the hardkeys or not, thus necessitating restarting RsrcEdit, but if it does, you can hit the Home button (or whatever it's called on your hardware, the upper left silkscreen button) to return from the preview mode.

By [Barry Ekstrand](#) on Wednesday, January 5, 2000 - 08:45 am:

I guess this is getting a bit off of the original topic, by my (additional) 2 cents on RsrcEdit is that it is the best way to make backups of code when using a doc-format editor (I use QED) as well as of the resource file. The Duplicate Database function makes it quick and painless, and you can rename the backup to anything you want if you don't like the default "Copy of ..." naming format. A handy utility all around.

One note to remember: when backing up the resource file, be sure to change the creator id to something different than the working copy (and different than creator ids of other apps).

Barry

By [Jim Meadows](#) on Wednesday, January 19, 2000 - 09:00 pm:

Thanks for the tip on using RsrcEdit for generating backups!

Jim

By [Jim Meadows](#) on Saturday, January 29, 2000 - 11:50 pm:

Back to the original topic of converting bmp files. Is there any easy way to convert gray scale or color (for the new OS) bmp's? It appears tealdoc only handles black & white.

Also how can you convert .bmps that are smaller than 160x160?

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 30, 2000 - 11:14 am:

I believe PilRC will create grayscale/colour bitmap resources. Haven't tried it yet myself, but I've heard mention of it.

Neal

By [Ed Mittelstedt](#) on Friday, February 4, 2000 - 02:55 pm:

I'm trying to get a bitmap logo I made in paintbrush into RsrcEdit.

Going back to the original question, I understand that PilRC will generate a binary file based on my bitmap .rcp definition. The question is, how do I take that file and import it into the palm? Doesn't PilRC compile only to .bin or .res extensions?

There must be a utility that I missed somewhere that will turn that intermediate file into a pdb or a prc, which I could then edit with RsrcEdit...

-Ed

By [Neal Bridges \(Nbridges\)](#) on Friday, February 4, 2000 - 03:30 pm:

I have used Pila to create a small PRC with the PilRC resources in it. Have a look at the sample sources to Year and Duco -- you'll see what commands are required to roll resources into a PRC on the desktop side.

The other route is to use the TealPaint desktop utilities to bring bitmaps into the Palm, and then RsrcEdit to turn them into Tbmp resources.

Neal

By [Jim Meadows](#) on Thursday, February 10, 2000 - 04:24 pm:

I have been converting .bmp files successfully using the TealPaint desktop utilities & then using RsrcEdit to copy them into my own resource. One restriction is I have found that the tealpaint utilities require the .bmp to be 160 bits wide!

Once I have them in my resource, I have been able to "cut them down to size" after opening the image in RsrcEdit and then selecting Size off the menu bar and changing the size.

HOWEVER ... I will sometimes get an error on the emulator saying there is a problem with the handle when I try to resize the bit map using RsrcEdit. Has anyone else had this problem & know how to avoid it? Or is there a better way to resize a bit map once it is on the palm?

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 10, 2000 - 09:22 pm:

Definitely drop a note to RsrcEdit's author about that, he'll want to know about the bug. He may be able to sort it out very quickly, so an alternate solution may not be required. :)

Are you working with a normal ROM, or a debug ROM on the emulator when you get this error?

Neal

By [Jim Meadows](#) on Friday, February 11, 2000 - 10:31 am:

I have found the error of my ways! It actually happens on the emulator as well as the palm ... but only when you are about out of memory. I didn't realize I was that low. Once I deleted some other programs then I could resize bit maps with RsrcEdit just fine!

Jim

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Callback functions

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Callback functions

By [Jim N. Deakin \(Jndeakin\)](#) on Tuesday, January 4, 2000 - 09:18 am:

Hi, Neal. Happy New Year!

You've already touched upon what I want to ask in your 'invert a bitmap' snippet, but if you could clarify please.

In a callback word I believe I'm correct that you have to leave the stack as you found it. ie the net stack effect is (x y z -- x y z). In order to get at the information without disturbing the call parameters, I thought of using a value, and saving SP@ TO it as a pointer to z, and similar values to point further up the stack to access other parameters. Unfortunately when the absolute address returned by SP@ is >REL'd, it becomes negative, and @ won't work with it. Will I have to use the non-portable absolute address words, or is there a way around it? And, importantly, are any of the stack cells kept on-chip in registers, or is the stack-wholly-in-memory model accurate?

On a related question. If a parameter on the stack is a boolean (8 bits) does it take up a full cell? ie if two booleans are passed does the OS pack them, or are parameters a minimum of 1 cell wide? Is there a converse to your >BYTE keyword needed to access the data?

Thanks,

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 4, 2000 - 11:25 am:

You do need to access the address returned by SP@ -- and any addresses derived from it -- with @a and friends, yes.

The top of data stack is cached in a register, but SP@ makes sure that value is flushed to memory before returning the stack-pointer address.

All values on the stack are one cell wide (16 bits). To pass a one-byte parameter (as certain PalmOS functions require -- FntSetFont for instance), you must massage that parameter with >byte.

Neal

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Question about resource ID numbers

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Question about resource ID numbers

By [Barry Ekstrand](#) on Monday, January 3, 2000 - 01:58 pm:

I have just added the version string resources tver 1000 and tver 1 (as recommended by Neal and Erwin some time back, if I recall correctly)so that the Info screen in the Palm App Launcher will show the correct information. This worked, but in the process I lost my large icon on the launcher screen. The resource for it had been tAIB 1000 but it disappeared upon compiling. When it disappeared I tried changing it to tAIB 1002, but no success in bringing back.

My first question is this: does each resource have to have a unique number even if they are of different resource types?

My second question is: it appears some resource numbers are "required" (like tver 1000 or tver 1) - is this true for the bitmaps? If so, are there other resource types (other than the default menu ID numbers) that require certain numbers for it to work right?

Thanks for your help,

Barry Ekstrand

By [Neal Bridges \(Nbridges\)](#) on Monday, January 3, 2000 - 03:14 pm:

Hmm. You shouldn't be losing the icon -- that's odd. Try adding it last.

You can certainly have different resources with the same resource number, so long as the type is different.

Neal

By [Barry Ekstrand](#) on Monday, January 3, 2000 - 06:23 pm:

Moving it to the end of the make file worked, after I deleted the compiled program with the generic icon (first try recompiling without the delete didn't change the icon to mine). Version string also works, so success at last. Thanks for your assistance.

Barry

By [Neal Bridges \(Nbridges\)](#) on Monday, January 3, 2000 - 06:28 pm:

Glad it's working. I always put the icons in last, seems to work well.

Neal

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Inverting a bitmap?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Inverting a bitmap?

By [Matthew Blair \(Blair\)](#) on Monday, January 3, 2000 - 08:08 am:

Hi,

I would like to be able to "invert" a bitmap, i.e., pixels that are "on" to "off" and vice-versa. Is there an easy way to do that?

Thanks,

Matt

By [Neal Bridges \(Nbridges\)](#) on Monday, January 3, 2000 - 08:42 am:

`WinInvertRectangle` will do the trick. Make a copy of the `rectangle` definition from `graphics.txt` (call it `invert-rectangle`) and replace `WinDrawRectangle` with `WinInvertRectangle`.

Neal

By [Matthew Blair \(Blair\)](#) on Monday, January 3, 2000 - 01:11 pm:

Hi Neal,

Took a look at the `rectangle` definition from `graphics.txt`. Had a question -- here's the code for convenience.

```
: rounded-rectangle
( height width y x corner-radius --)
>r sp@ r> rot rot
WinDrawRectangle
2drop 2drop ;
```

What is the `sp@` for? I saw in the manual that this word "Puts the 32-bit contents of the data stack pointer on the data stack." As near as I can tell, after the first `>r` call, the stack looks like this:

```
x (top of stack)
y
width
height
```

So does `sp@` return a 32-bit pointer to the top of the stack? And this looks like a pointer to the

Rectangle structure that the WinDrawRectangle is looking for?

Thanks,

Matt

By [Trevor Steele](#) on Monday, January 3, 2000 - 02:08 pm:

Thanks Neal I think you have just given me a much more elegant way of achieving this than the one I'm currently using in one of my apps.

Trevor

By [Neal Bridges \(Nbridges\)](#) on Monday, January 3, 2000 - 03:21 pm:

```
: rounded-rectangle ( height width y x corner-radius -- )
  >r sp@ r> rot rot ( height width y x &rectangle. corner-radius )
  WinDrawRectangle ( height width y x )
  2drop 2drop      ( -- )
;
```

WinDrawRectangle requires two parameters -- the address of a rectangle structure, and the corner-radius of the rectangle to draw. **SP@** gives me the address of the top of the stack, so what I'm doing in this library function is a neat trick -- using the parameters as they live in memory on the stack as a rectangle structure to pass to the **WinDrawRectangle** system call.

Neal

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Stupid Newbie field question

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Stupid Newbie field question](#)

By [Winchell Chung](#) on Sunday, January 2, 2000 - 12:03 pm:

Boy, do I feel dumb. Here all you fellows are discussing deep forth questions, and I can't get my simple program to work. And I've been programming Windows for years.

Anyway, at this point, all I want to do is put up a field, have the user type a number into it, and when they push a button, retrieve the value.

I must be doing something fundamentally wrong, as it is fighting me tooth and nail. The numbers I get back seem random, or other times seem to come from other fields.

Anyway, here is a code fragment for you all to chuckle over. Perhaps somebody can see what I am doing wrong:

```

1002 constant RAHfield
20 constant BufferSize
variable raHours
create inbuffer
    BufferSize chars allot

: string>number ( c-addr u -- d. )
    >float if f>d else 0. then ;

\ return the numeric value in the specifed field
: get-field ( fieldid -- d )
    dup fieldfocus
    inbuffer BufferSize BLANK
    >r inbuffer r> field>string
    >r inbuffer r> string>number
    d>s ;

: load-values RAHfield get-field raHours ! ;

: print-equitorial
    10 50 85 60 erase-rectangle
    85 60 at raHours @ <# #s #> type ;

: do-button ( id -- )
    CalculateButton = if
        load-values

```

```
print-equitorial  
then ;
```

=====
**in resource: tFrm 1001; Field 1002
top 20, left 70, width 20, height 10
editable, usable, not dynamic, underline, numeric,
no autoshift, single line, no scroll bar
max chars 2**

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 2, 2000 - 01:18 pm:

Good news -- you're doing everything right *except* displaying the number.

Either replace your

```
<# #s #> type
```

with a simple . (dot)

or else correct it like this:

```
s>d <# #s #> type
```

Neal

By [Winchell Chung](#) on Sunday, January 2, 2000 - 07:17 pm:

Now that's service! Just a hair over one hour for the answer!

Thank you very much, that was indeed the problem. I knew it was something simple but newbie confounding.

I am a little annoyed that the PalmOS forces you to jump through hoops like this in order to do something so basic as reading a value from a field in a dialog. Though I suppose Windows is just as bad. MSVC++ has the "Microsoft Foundation Classes" which shield the ugly details.

But I still am impressed by the functional elegance of Forth. I usually find it trival to figure out words in the Library modules by glancing at their definitions. This is in stark contrast to the ugly mess of the C++ library code.

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 2, 2000 - 07:37 pm:

Once you've written the code to read a field once, you can reuse it endlessly -- Forth definitions fit together like Lego blocks. Think of it as your own customized foundation classes.

Neal

By [Winchell Chung](#) on Monday, January 3, 2000 - 08:59 am:

"Like Lego blocks", nice analogy.

I also enjoy Leo Brodie's characterization of Forth, he said programming in Forth was a process of extending the Forth language in the direction of your application.

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Debugging

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Debugging](#)

By [Kristopher Johnson](#) on Thursday, December 30, 1999 - 11:58 pm:

I've run into a weird problem in my app that I can't figure out how to debug. I don't want to post the entire source, but maybe someone can suggest where to look.

I've got a definition that looks something like this:

```
: bar ( &s -- a b ) ( ... ) ;
: baz? ( a b &struct -- f ) ( ... ) ;
: xyzzy ( a b &struct -- ) ( ... ) ;

: foo ( &s -- )
  dup >r ( &s R: &s )
  bar ( a b )
  2dup r@ baz? 0= if
    r@ xyzzy ." After xyzzy" cr
  then ." After THEN" cr
  r> ." After R>" cr
  drop ." After DROP" cr
;
```

The weird thing is that the output of FOO is

```
After xyzzy
After THEN
After R>
After DROP
After THEN
After R>
After DROP
```

And then I get a Fatal Exception.

I'm guessing that one of bar, baz, or xyzzy has a problem, but their definitions look right to me. What kind of bug would cause the repetition of the THEN R> DROP part of foo?

Thanks,
Kris

By [Neal Bridges \(Nbridges\)](#) on Friday, December 31, 1999 - 12:06 am:

Looks like you're leaving the return stack unbalanced when the foo definition exits -- either

leaving something on it, or taking too much off of it. Whatever is being left on the stack is causing a return to the wrong spot in memory; the repetition is likely a quirk as a result of this.

Take a close look at your real code -- it's very hard to diagnose pseudocode as it often leaves out the details containing the problem. Perhaps you're only removing an item from the return stack in one branch of your condition and not another.

Neal

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Did the definition of 'set-precision' change?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Did the definition of 'set-precision' change?

By [Steve Gibson](#) on Thursday, December 30, 1999 - 05:53 pm:

I've just noticed that 'set-precision' is no longer working they way it used to for me. I've fairly recently upgraded to PalmOS 3.3 and Quartus 1.25R. Has the definition changed in 1.25R?

I also upgraded the float library from the 99.2.24 version to the latest 99.3.9 version. I'm not sure exactly where 'set-precision' is defined...

What I'm seeing is this:

```
include float ok
include float-ext ok
include f.s ok
24.2719e ok
f.s [1] 0.24271900E2
ok
2 set-precision ok
f.s [1] 0.24000000E2
ok
(f.) type 24.00 ok
```

** I used to get 24.27 from this

```
24.2719e ok
4 set-precision ok
(f.) type 24.2700 ok
```

** I used to get 24.2719 from this

My problem is that I want floating point values accurate to two places (i.e. 24.27). How can I do this without using '4 set-precision' and having two zeros tacked on to the end of my string output?

-Steve

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 30, 1999 - 06:09 pm:

SET-PRECISION was updated some time back to do the right thing. It used to be broken in that it was controlling the number of places past the decimal; it now controls the number of significant digits.

To keep the old functionality available, `set-places` was added.

2 `set-places`
should do the trick.

Neal

By [Steve Gibson](#) on Thursday, December 30, 1999 - 08:57 pm:

Ahhhhh.... This makes sense.

Thanks, Neal.

-Steve

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 30, 1999 - 09:00 pm:

You're welcome. I have updated *float-ext.txt* in the Library file area -- I'll make a new .MPA for the next update.

Neal

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Problem with making a PRC

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Problem with making a PRC](#)

By **[Matthew Blair \(Blair\)](#)** on Thursday, December 30, 1999 - 08:51 am:

Hi,

I was learning how to use my NEW REGISTERED :^) copy of Quartus last night, and ran into a problem when making a PRC. Essentially, I have a resource database with a blank frame (placeholder), and a series of bitmap resources to use with Neal's LCD module. Here is the source code that worked:

```
needs ids
needs resources
needs FuelIDs

(ID) p4ap (ID) Fuel use-resources

: go
FuelMainFrm ShowForm
begin ekey drop again ;

' go (ID) Fuel MakePRC Fuel

FuelMainFrm (ID) tFRM CopyRsrc

BlankFormID (ID) tFRM DelRsrc drop
MainFormID (ID) tFRM DelRsrc drop
TitledFormID (ID) tFRM DelRsrc drop
```

That produces a working PRC. When I add the LCD module to the above code, and use CopyRsrc to add the bitmaps, however, the source is successfully compiled but I cannot exit Quartus without a Fatal error "MemoryMgrNew.c, Line:4257, Invalid chunk ptr".

The only modification I have made to the LCD module is to use my creator ID and type, and to change the spacing between digits.

Can anybody spot the problem?

Thanks,

Matt

By **[Erwin Schomburg](#)** on Thursday, December 30, 1999 - 09:02 am:

Have you moved the LCD bitmaps into your Fuel resource database?**/Erwin**By [Matthew Blair \(Blair\)](#) on Thursday, December 30, 1999 - 09:06 am:

Yes; the resource database is composed of a frame and 10 Tbmp resources. I don't think it makes a difference, but the bitmaps are my own creation, i.e., I did not copy Neal's bitmaps into my resource database. However, they do follow the same ID numbering scheme.

MattBy [Neal Bridges \(Nbridges\)](#) on Thursday, December 30, 1999 - 09:41 am:

Matt, exactly what code is it that is causing you a problem? Can you show the routine you're using to copy the bitmap resources into your PRC?

NealBy [Matthew Blair \(Blair\)](#) on Thursday, December 30, 1999 - 09:55 am:

Here's the entire source code. There appears to be two problems. When I use a DO loop to copy in the 10 bitmaps, I get a "Null Handle" error. If I copy each bitmap in on a separate line, and uncomment the needs LCD line, I get the error described before.

Hope that helps,**Matt**

```

\ FuelMain

needs ids
needs resources
\ needs LCD
needs FuelIDs

(ID) MaTt (ID) Fuel use-resources

: go
FuelMainFrm ShowForm
begin ekey drop again ;

' go (ID) Fuel MakePRC Fuel

FuelMainFrm (ID) tFRM CopyRsrc
\ Here's where the bitmaps are copied in
1057 1048 do
i (ID) Tbmp CopyRsrc

```

loop

```
BlankFormID (ID) tFRM DelRsrc drop
MainFormID (ID) tFRM DelRsrc drop
TitledFormID (ID) tFRM DelRsrc drop
```

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 30, 1999 - 10:01 am:

Ok, you've got a DO LOOP outside of a definition. Do this:

```
:noname
  1057 1048 do
    i [ID] Tbmp CopyRsrc
  loop
; execute
```

Neal

By [Matthew Blair \(Blair\)](#) on Thursday, December 30, 1999 - 10:15 am:

Did that. That takes care of the bitmap importation problem. Now I get the error described above when I include the LCD file. I'll reproduce my version of the LCD module here.

BTW, could you explain the `:noname` word? I understand the stupid mistake I made by trying to use DO outside of a definition (another problem I've run into before), but I don't understand the use of `[ID]` instead of `(ID)`, and why it makes a difference if I use `: noname` instead of `:noname`.

Thanks,

Matt

```
\ LCD 98.12.5 3:34 pm NAB
\ bitmaps for 30x40 LCD digits
\ modified 99.12.29 MPB
\ bitmaps for 11x13 LCD digits
```

```
needs core-ext
needs toolkit
needs graphics
needs resources
needs ids
```

```
(id) MaTt (id) Fuel use-resources
\ Contains Tbmp 1048-1057,1046
\ representing chars 0-9,@
```

```

: LCDdigit ( 0..9 y x -- )
2>r
1000 + [ID] Tbmp DmGetResource
2dup MemHandleLock
2r> 2swap WinDrawBitmap
MemHandleUnlock throw ;

: LCDemit ( char -- )
cursor-position LCDdigit
\ Each LCD digit is 11 pixels wide:
cursor-position 12 + at ;

: LCDtype ( c-addr u -- )
bounds do i c@ LCDemit loop ;

```

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 30, 1999 - 10:27 am:

:noname is a Standard Forth word that starts an unnamed definition. By contrast,

```
: noname
```

would start a definition named 'noname', if you follow the distinction.

[ID] is a compile-time version of **(ID)**.

Now as to your error -- what error are you now getting, and when are you getting it? The *LCD* library code looks for the LCDs/p4ap resources to use -- did you say you had deleted and/or changed the creator ID of that resource database?

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 30, 1999 - 10:30 am:

Instead of using **:noname**, you might instead have done:

```
: copydigits ... ; copydigits
```

And produced the same result -- it might have been better for me to show you that example, rather than the **:noname** one.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 30, 1999 - 10:32 am:

Ah and also I see you have modified *LCD*. Sorry I missed that in the first go. Ok -- still I need to know what error you're getting, and exactly when. Is it during the including of your modified *LCD*, after it, during the copying of resources, or only when exiting Quartus Forth after you've done everything?

Neal

By [Matthew Blair \(Blair\)](#) on Thursday, December 30, 1999 - 10:40 am:

If I modify the \ FuelMain source file so that the \ LCD source file is also included, then I get an error upon exiting Quartus Forth that says:

```
MemoryMgrNew.c, Line:4257, Invalid chunk ptr
```

It's a fatal error with the Reset button -- but requires a pinhole reset to proceed.

Note that I am not actually using any definitions from the LCD module yet. Could it be the fact that I am employing the `use-resources` word twice on the same resource database?

Thanks,

Matt

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 30, 1999 - 10:47 am:

Yes, that's possible. Try only opening it once.

Neal

By [Matthew Blair \(Blair\)](#) on Thursday, December 30, 1999 - 10:50 am:

That did it. Thanks for your help!

Matt

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 30, 1999 - 11:33 am:

Great! Glad it's working. I've tested it here; seems the OS grumbles a bit if you try and open the same database twice.

Neal

By [Dan Richardson](#) on Thursday, December 30, 1999 - 12:23 pm:

BTW, where do these come from?

```
BlankFormID (ID) tFRM DelRsrc drop  
MainFormID (ID) tFRM DelRsrc drop  
TitledFormID (ID) tFRM DelRsrc drop
```

Are those default resources,
or are they in a file that people are copying?

Dan

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 30, 1999 - 01:28 pm:

Those are resources that exist by default in every stand-alone PRC. They only take up a handful of bytes, but if you're not using them you can delete them as shown.

Neal

By [Matthew Blair \(Blair\)](#) on Thursday, December 30, 1999 - 02:19 pm:

Neal,

In the spirit of incremental changes, I have made the following change. As you can see, I am attempting to draw the number 98765 with the LCD bitmaps. When I run the resulting PRC, I receive a Fatal Error, MemoryMgrNew.c, Line:4165, NULL handle. Any pointers?

Thanks,

Matt

```
\ FuelMain
```

```
needs ids
needs resources
needs LCD
needs FuelIDs
```

```
(ID) MaTt (ID) Fuel use-resources
```

```
: go
FuelMainFrm ShowForm
```

```
\ CHANGES MADE HERE
10 currentx ! 30 currenty !
98765. <# #s #> LCDtype
\ END CHANGES
```

```
begin ekey drop again ;
```

```
' go (ID) Fuel MakePRC Fuel
```

```
FuelMainFrm (ID) tFRM CopyRsrc
```

```
:noname
1057 1048 do
i [ID] Tbmp CopyRsrc
loop
; execute
```

BlankFormID (ID) tFRM DelRsrc drop
MainFormID (ID) tFRM DelRsrc drop
TitledFormID (ID) tFRM DelRsrc drop

By [Matthew Blair \(Blair\)](#) on Thursday, December 30, 1999 - 02:23 pm:

Scratch that. I thought to look at your Swatch sources, and saw that my loop to include the bitmaps did not include the '9'.

Thanks,

Matt

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 30, 1999 - 03:22 pm:

My practice is to test my code first, and then compile it to stand-alone when I know it's working; bit easier that way.

Neal

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Crash with SelectDayV10

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
Crash with SelectDayV10

By **[Wade Carlson](#)** on Wednesday, December 29, 1999 - 04:42 pm:

I copied the following code from the archives (I believe written by neal). The first time I ran it it worked, but for some reason the year was like -2453 or something. So then I ran it again, and it worked fine. Once more, no problem. But the 4th time, I get this error 'Form.c, Line:1281, Object not in form' and then Reset... Now, EVERYTIME I run it I get this same error, and I can't get it to work. It does the same thing on the emulator.

```
\ CalPopup
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 @ .
;
```

Any Ideas? I've haven't modified my zstrings or facility-ext library either. Thanks.

By **[Neal Bridges \(Nbridges\)](#)** on Wednesday, December 29, 1999 - 04:47 pm:

Are you calling `init` before `go`? It's likely as simple as that. `SelectDayV10` requires that year, month and day have legal values.

Neal

By [Wade Carlson](#) on Wednesday, December 29, 1999 - 05:17 pm:

Oops!, your right! I guess I'll just include a call to 'init' within 'go'. Thanks a million!

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Strange error...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Strange error...

By [Matthew Blair \(Blair\)](#) on Tuesday, December 28, 1999 - 08:25 am:

I'm finally able to get back into Quartus again, and I'm experiencing a strange error. I'm using the LCD source file with a set of bitmaps I've created myself. When I launch Quartus and type

```
include LCD
```

the interpreter returns with

```
Exception in file: LCD  
2>r? undefined word
```

I know I'm doing something stupid here, but I'm pretty sure that 2>r is a standard word, right?

Thanks,

Matthew

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 28, 1999 - 08:54 am:

2>R is a Standard word, but needs *core-ext* to be loaded. I may have left out the needs line from the *LCD* module, sorry 'bout that. Do

```
needs core-ext  
needs LCD
```

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, December 28, 1999 - 09:56 am:

Talk about history repeating itself! I think that I ran into this exact same problem before, and asked you the exact same question.

At this point, it should be me that says, "sorry 'bout that!"

Thanks again,

Matt

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 28, 1999 - 10:14 am:

Addendum: add

```
needs toolkit
```

to *LCD* and you'll be set.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

System clicks

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

System clicks

By **Dan Richardson** on **Monday, December 27, 1999 - 11:51 pm:**

It came together very fast in the last two days.
I've got my whole app working now, sound and all, and I'm pretty psyched.
It's all finesse and tweaks from here.

Can I use your alternate lower level ekey to lose the system clicks
in my app's onscreen buttons without messing with the Palm's volume settings?

Dan

By [Neal Bridges \(Nbridges\)](#) on **Tuesday, December 28, 1999 - 12:00 am:**

Hmm, no. The system clicks are generated by the ROM. You'll need to turn off system sounds yourself.

Neal

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

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Fatal when exiting app after reading record

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Fatal when exiting app after reading record

By [Steve Gibson](#) on Sunday, December 26, 1999 - 05:33 pm:

I've written a word that reads a record from my database and copies it into a struct (which is subsequently copied into the appropriate fields on my form). I've been getting the following error, though, when I exit the application after having used the word to read in a record:
"MemoryMgrNew.c, Line4257,Invalid chunk ptr"

I've been over it countless times, but there must be something I've missed or some clean-up function that I am not performing.

Here's my code:

\ struct code left out for brevity

2variable recsize

sizeof mystruct: s>d recsize 2!

: dbname z" MyDB" ;

: ReadRec (u --)

\ Get the record handle

DmModeReadOnly dbname OpenDB 2dup 2>r

DmQueryRecord (index dbP. -- VoidHand.) 2dup 2>r

\ Lock the handle

MemHandleLock (h. -- VoidPtr.) 2>r

\ Copy record to mystruct with memmove

recsize 2@ 2r> mystruct >abs

MemMove (numBytes. &sP. &dstP. -- Err) throw

\ Unlock the handle

2r> MemHandleUnlock drop

2r> CloseDB ;

Thanks for any help.

-Steve

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 26, 1999 - 07:13 pm:

Hi Steve. I just ran your code, modified only to use a different database. I'm not getting an

error at all, either on my Palm or via the emulator with a debug ROM and all flags set on; instead it successfully reads a record for me into the buffer I specify.

Are you sure the problem is in that bit of code, and not some surrounding code? If you're sure it's in that word, try to isolate what the problem is -- is it the DmQueryRecord, or the MemMove?

Neal

By [Steve Gibson](#) on Sunday, December 26, 1999 - 08:12 pm:

Hmmm...okay. Well, I'm having a hard time tracking this one down because I don't get the crash until I exit the application -- and only if I've read in a record while the application was running. If I don't read in a record I can exit the application without any problems. The only thing I do when exiting is to set my prefs, so I'll look at that code a bit more closely.

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 26, 1999 - 11:00 pm:

I also assume that `mystruct` is being alloted someplace and is big enough to hold the data you're reading. If it isn't big enough, the incoming data could overwrite other variables in dataspace, and that might cause the sort of problem you're seeing.

Neal

By [Steve Gibson](#) on Monday, December 27, 1999 - 08:49 am:

It's big enough as far as I can tell. I'm using the `sizeof mystruct` to write the records to the DB in the first place. The records are a fixed size.

I have discovered that I only get the crash on exit if I've done a `ReadRec` call more than once. I can `WRITE` records all I want and don't get a crash on exit. If I read in just ONE record, I can exit without a crash. While I'm in the application, I can read and write records as much as I want without any problems.

I just crash on exiting the app if I've read in more than one record during the session...

Still puzzling...

-Steve

By [Neal Bridges \(Nbridges\)](#) on Monday, December 27, 1999 - 08:56 am:

I modified the code to read 10 records, still no crash. You might want to send me a larger test harness that reproduces the problem.

Neal

By [Steve Gibson](#) on Monday, December 27, 1999 - 03:29 pm:

Ah ha! Found it! Thanks to your eliminating the `ReadRec` code as the culprit I found the bug in

another word, GetNumRecs. Basically it returned the number of records so that I could be sure that I was using valid record index numbers in the call to ReadRec. Well, I mistakenly left out the CloseDB word in the GetNumRecs word. Slight problem, yes? :)

Thanks for taking the time to examine my code, Neal!

-Steve

By [Neal Bridges \(Nbridges\)](#) on Monday, December 27, 1999 - 04:10 pm:

No problem, Steve. Glad you found it!

Neal

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If, and, else syntax

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

If, and, else syntax

By **Dan Richardson** on **Sunday, December 26, 1999 - 11:37 am:**

I'm tangled on a simple one.
I want an "if x>1 and x<37 do foo, else do bar".

Is it time to learn the stack commands?

Dan

By [Neal Bridges \(Nbridges\)](#) on **Sunday, December 26, 1999 - 11:51 am:**

Not hard:

```
: test
  dup 1 > swap 37 < and if
    ." foo"
  else
    ." bar"
  then
;
```

Neal

By [Neal Bridges \(Nbridges\)](#) on **Sunday, December 26, 1999 - 11:54 am:**

By the way, there's another way to do this using **WITHIN** from *core-ext*.

Neal

By **Dan Richardson** on **Sunday, December 26, 1999 - 12:38 pm:**

Lovely, thanks.

Hmm, that's odd.
I've got two copies of **WITHIN** in *core-ext* 98.10.23 8:32 pm NAB
Same definition, one just has a stack comment.
Looks like a useful word.

Dan

By [Neal Bridges \(Nbridges\)](#) on **Sunday, December 26, 1999 - 12:45 pm:**

Hey, you're right. I'll hack one out.

Neal

By **Dan Richardson** on **Sunday, December 26, 1999 - 02:45 pm:**

WITHIN returns true from \geq low to $<$ high?
That's per the ANS, but the limits seem skewed,
makes me use 2 and 37 to act within 2 and 36 inclusive.
I don't like it.

Your test word above uses limits that make sense to me.
Let's see if I can figure out how it works.

dup 1 > swap 37 < and if

OK, so I come into this with my variable x on the stack.

```
Dup      and I've got x x with the top of the stack on the right.
1        gives me x x 1
>        eats the x 1, leaves me a flag f1,  so x f1
swap     gets f1 x
37       makes it f1 x 37
<        eats the x and 37, leaves another flag f2, so f1 f2
and      eats them both, leaves a new flag f3 by itself
if       eats that flag and either acts or jumps to else accordingly.
```

How'm I doing?

Dan

By [Neal Bridges \(Nbridges\)](#) on **Sunday, December 26, 1999 - 04:03 pm:**

Poifect! Nyuk nyuk nyuk.

Neal

By [Neal Bridges \(Nbridges\)](#) on **Sunday, December 26, 1999 - 07:40 pm:**

Another thought:

```
: between ( value low high -- flag )
  1- within ;
```

Neal

By **Dan Richardson** on **Sunday, December 26, 1999 - 08:12 pm:**

That's really cute.
Stack's a place where interesting things can happen.

It doesn't look right, though.
The 1- acts on the last thing on the stack, the high,

so if I say $x^2 = 36$ between it feeds $x^2 = 35$ to within, when I want $x^2 = 37$, no?
Shouldn't that be $1+$?

There's a bunch of useful shorthands in forth, aren't there?
I think I need the ANS on my Palm for bathroom reading,
just browse it at random.

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 26, 1999 - 08:14 pm:

Aiiigh! Yes, $1+$. Sorry about that.

Neal

By Dan Richardson on Sunday, December 26, 1999 - 08:21 pm:

Oh, don't be.
Knowing I have to check your examples for typos and such just makes them that much more interesting. <grin>
And when I'm done, I'm pretty sure I actually understand it.

Dan

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Help with POSTPONE

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Help with POSTPONE](#)

By [John Oliver](#) on Sunday, December 26, 1999 - 11:16 am:

Can some one give me or point me to a tutorial on POSTPONE ?

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 26, 1999 - 11:24 am:

To my knowledge there is not any such beast. We have discussed POSTPONE a number of times in the Message Archives, and of course it's discussed in the Standard.

If you have any specific questions about it, I'd be happy to help.

Neal

Add a Message

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Sorting Databases

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#) Sorting Databases

By [Trevor Steele](#) on Sunday, December 26, 1999 - 07:53 am:

Seasons greetings to all.

I have been trying to sort records in a database using DmQuickSort. The details on the application defined comparison function DmComparF state that it returns a value depending on whether the two records being compared are $>$ $=$ or $<$ each other. It is my understanding that the stacks need to remain balanced before and after a callback so if this is the case how or to where do I return this value? Maybe if I'm lucky someone has tackled this one before ;-)

Best regards

Trevor

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 26, 1999 - 08:11 am:

Return the value via **d0!** . I've never tried to do a DmQuickSort callback -- let me know how it goes!

Neal

By [Trevor Steele](#) on Sunday, December 26, 1999 - 09:56 am:

Hi Neal

Thanks for the advice. It certainly got me over the initial hurdle, however nothing's ever quite that simple. The code for my callback and test routine is as follows:

```
: Compar ( info. r2sort. r1sort. other rec2. rec1.
-- info. r2sort. r1sort. other rec2. rec1. )
  callback
    30. 5 pick 5 pick 5 pick 5 pick
    StrNCompare s>d d0!
  end-callback ;

: SortCurrentDB ( -- err )
  0 ['] Compar xt>abs DBPtr
  DmQuickSort ;

: tst
  opencurrentDB SortCurrentDB closecurrentDB ;
```

This now calls the compar function 3 times (I have 3 records in my test data to sort and have checked the number of times the callback is invoked) however POSE then kindly tells me that it has an "invalid handle" and if I press continue it says that I have a "chunk not locked". Pressing continue repeats these messages until POSE has had enough and replies illegal operation "bus error". My this is fun sometimes!! Any ideas?

On a more positive note I am currently working from a notebook computer which has only one serial port and caused me a few headaches when trying to get the excellent \ doc and \ docinc libraries into operation as I had no easy way of hotsyncing the initial library files needed. I have now a memoDB.prc file which has all the standard library files and can be dropped straight into POSE. Maybe I've re-invented the wheel or maybe these may be of use to someone in a similar situation?

Best regards

Trevor

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 26, 1999 - 10:06 am:

I think what is happening for the DmQuickSort callback is that there isn't sufficient stack-space -- but I'm not entirely sure. I need to check. I'd like to run your code here -- can you send me your database?

Also -- yes, there's a MemoDB.PDB in a zip in the File Area. Handy to have. Sorry you didn't see this wheel first!

Neal

By [Trevor Steele](#) on Sunday, December 26, 1999 - 10:56 am:

Hi Neal

I thought that the MemoDB.PDB would exist somewhere just didn't see it. I suppose as I work in the ophthalmic industry I should see about some new spectacles!!

I'll e-mail you my database and see if that sheds any more light on things.

Thanks again

Trevor

By [Dan Richardson](#) on Sunday, December 26, 1999 - 11:04 am:

Neal, your memodb.PDB would have worked for him, assuming he was starting from a raw machine state.

What he has now, though, is a memodb.PRC, which I'm assuming is all the lib files in a single DOC.

Useful, methinks.

Dan

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 26, 1999 - 11:07 am:

Ah, I wasn't clear on that. Did you really do that Trevor? I wouldn't think you could possibly include all the library files at once in a single Quartus Forth session.

Neal

By Dan Richardson on Sunday, December 26, 1999 - 11:26 am:

**'Course the .prc coulda been a typo, too.
And for a raw Poser enviropnment, the .pdb's easier.**

**I was thinking it'd be useful on a physical Palm.
I'd use it as an archive, not to include the whole doc.
Copy over to memodb as needed.**

Dan

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 26, 1999 - 11:32 am:

I use RsrcEdit to keep a copy of my MemoPad database under a different name. If I need to get at it, I rename the current database, name the old one to MemoDB, and away I go.

Neal

By [Trevor Steele](#) on Sunday, December 26, 1999 - 11:47 am:

Hi all

Just to clarify the situation, what I ended up with, by a rather convoluted route was a file exactly the same as (or very nearly) the memoDB.PDB. The prc extension came about during my export of the file from POSE (I'm not sure why!)

Having tried out the memoDB.PDB from the file area it behaves in exactly the same way as mine.

Hope this clears things up.

Best regards

Trevor

By **Dan Richardson** on **Sunday, December 26, 1999 - 12:11 pm:**

Good pointer, Neal.

RsrcEdit has a lot of capabilities as a general Palm system tool. I need to explore that further.

Dan

By **[Erwin Schomburg](#)** on **Sunday, December 26, 1999 - 01:54 pm:**

Not to add to problems, but its entirely irrelevant what you name your Palm files on the desktop. All information required is inside the file, you could name the extensions .Fritz, .Hans or .Files_for_the_Palm_of_Dan, associate those extensions with the installer and find no difference in functionality whatsoever.

By **[Trevor Steele](#)** on **Sunday, December 26, 1999 - 03:09 pm:**

Hi Erwin

Good to know about file extensions on the desktop :-) Thanks!

Trevor

By **[Steve Gibson](#)** on **Wednesday, December 29, 1999 - 01:59 pm:**

Getting back to the topic of this thread, has any progress been made in resolving Trevor's problems with using DmQuickSort and his callback function?

I ask because I was just about to attempt to use a DmQuickSort on my own database and Trevor's problem seems to be directly relevant.

I don't want to burn a lot of cycles wrestling with it until I see how/if Trevor's problem gets resolved...

Thanks,

-Steve

By **[Neal Bridges \(Nbridges\)](#)** on **Wednesday, December 29, 1999 - 02:40 pm:**

Hi Steve. It's coming perilously close to the top of my list; stay tuned :)

Neal

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Can QF Intercept Resets?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Can QF Intercept Resets?

By [Ron Doerfler](#) on Sunday, December 26, 1999 - 02:08 am:

Hi Neal,

I don't have much hope that this is possible, but since it's Christmas I'll give it a go.

Can Quartus, through new hack code or something, intercept those Palm Reset errors we cause and just abort, rather than making us spend the time resetting the Palm?

Thanks,

Ron

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 26, 1999 - 08:08 am:

The PalmOS uses "Fatal Exceptions" and resets as a way of cleanup from a number of error conditions. You can intercept and ignore the reset, but the device is left in a highly questionable state.

Neal

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

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Edit menu in QForth

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Edit menu in QForth

By [Philippe de Rochambeau](#) on Saturday, December 25, 1999 - 02:49 pm:

I have just created an application and would like the users to be able to cut/copy/paste text from/from/to input fields. I have created an edit menu using RsrcEdit containing the appropriate items (undo/cut/copy/paste), but am not sure what code to write to manage those items. Any suggestions?

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 25, 1999 - 02:53 pm:

Copy the Edit menu from Quartus Forth, and modify it accordingly. If you select the right menu ID numbers, you don't need to write any code yourself -- the edit functions will be automatically provided by the Palm OS. The numbers are:

Undo 10000
Cut 10001
Copy 10002
Paste 10003
Select All 10004
Keyboard 10006
Graffiti 10007

Neal

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Strange but explicable result ;-)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Strange but explicable result ;-\)](#)

By [Francois Vignon](#) on Saturday, December 25, 1999 - 04:22 am:

Try (in qForth):
15 set-precision
1e0 3e0 f/ f.
you got 0.000000033333336 :-)))

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 25, 1999 - 10:25 am:

Thanks for the report, Francois -- I'll check on that.

Neal

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 25, 1999 - 10:25 pm:

What's the date-stamp on your *float-ext*? The latest is 99.3.13 5:53 pm, and with that version I get the expected answer: 0.33333336.

Subsequent to the move the latest version doesn't appear to have made the transition to the File Area. I'll update it tomorrow. Sorry for the inconvenience!

Neal

By [Francois Vignon](#) on Sunday, December 26, 1999 - 03:16 am:

Arrrgh. the next time I see something is maybe a bug, I check my version before reporting it ... I have forget this time ... please excuse me ...
my version is 99.2.24 2:42.

So, now I can correct my message:
"with a old version, we have strange result"
;-)

By [Francois Vignon](#) on Monday, December 27, 1999 - 08:52 am:

It's always the old version in file area.
Why don't put a updated library.mpa in file area ?
I you do that, all people can directly update library (on my palm, all library are into a 4th-lib categorie)
Thanks

By [Neal Bridges \(Nbridges\)](#) on Monday, December 27, 1999 - 08:57 am:

On my list for today. :)

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

String to Number

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): String to Number](#)

By [Winchell Chung](#) on Friday, December 24, 1999 - 07:03 pm:

And now it is time for yet another stupid newbie question!

I'm in the process of writing my first Quartus app, a 3-D starmap calculator. The user inputs numeric data into fields, and when the "calculate" button is pushed, the results are displayed.

One gets the user input with a call to `field>string`, but the result is a string buffer full of text. I have to convert this string into a numeric value.

Before I go off and re-invent the wheel by writing my own conversion routine, is there an existing routine I could use, or existing public domain source code, or a way to avoid doing this all together? (there are user interface reasons why I do not want to force the user to input the data by way of a numeric keypad or something like that)

THINKING FORTH has an warning about writing interpreters when Forth has a perfectly good one. I was wondering if there was any way to hijack the interpreter's "number runner", making it do the work of converting it and pushing a number onto the stack...

By [Neal Bridges \(Nbridges\)](#) on Friday, December 24, 1999 - 08:15 pm:

If you were to leverage the existing interpreter, you'd wind up dragging too much extraneous code into your stand-alone app.

Try this instead. This routine will convert a string into a 32-bit double-cell number, or a double-cell zero value if there was any problem with the conversion.

```
: string>number ( c-addr u -- d. )
  >float if f>d else 0. then ;
```

Neal

By [Winchell Chung](#) on Saturday, December 25, 1999 - 07:11 am:

Thank you very much for the code!

I am continually amazed at how concise and powerful Forth is...

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Merry Christmas!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Merry Christmas!

By **[Alex Alava](#)** on **Friday, December 24, 1999 - 06:47 pm:**

**Merry Christmas
and a
Happy New Year
to the Qforth community!**

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Poser tips

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Poser tips

By **Dan Richardson** on **Friday, December 24, 1999 - 06:43 pm:**

Poser makes a pretty cool off-Palm Quartus development platform.

Couple things I've seen or figured out:

I keep a dedicated Poser .psf file saved for Quartus.

In it, I've left the memo button alone,

but the todo button (looks kind of like a source listing) is set to QED.

The calculator's set to RsrcEdit.

The phone (so I can call someone for a clue) is my current working app.

Datebook (has a clock, makes me think of compile time) is Quartus.

No more app screen, and no trying to do graffitti shortcuts with a mouse to call up an app-switching hack.

It's all on the buttons, very fast.

QED makes a good code editor for several reasons.

Of course there's unlimited file size, no breaking code up to fit into memos.

That fifth font (under Options|Doc Prefs) is monospaced, makes code much easier to decipher.

That's settable either globally or per doc.

Run any text or listing through QEX or one of the other doc convertors and you can drag them onto Poser.

As of version 3, Poser also has a native file export function. It's in the right click menu.

So no more hotsync needed to get code or resources on or off.

I put Erwin's wonderful docinc right in startup.quartus.

I also docinclude my current program file there,

so I just hit the datebook button, wait for the cursor and type go. Voila, another flaming crash!

Time to read some more.

Enjoy.

Dan

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Z" and zstrings

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Z" and zstrings](#)

By [Francois Vignon](#) on Friday, December 24, 1999 - 05:04 am:

Why the quartus forth and win32forth implementation of z" differ ?

with qForth: z" fun" -> addr n

with win32forth: z" fun" -> addr

F*

By [Erwin Schomburg](#) on Friday, December 24, 1999 - 07:58 am:

Its a non-standard helper word, so how you present it is a matter of implementation consistency philosophy I guess. In Quartus all string 'x' ' constructs come up with (--- addr n), in other implementations you have to think about what is been done by what.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Friday, December 24, 1999 - 09:03 am:

Correct guess. Of course you can make the Quartus Forth z" behave like the one in Win32Forth if you wish:

needs zstrings

```
: z" postpone z" postpone drop ; immediate
```

Neal

By [Francois Vignon](#) on Friday, December 24, 1999 - 10:50 am:

of course ...

so it's a small philosophical problem:

how to write portable word ? (if different implementation of the same word doesn't have the same schem, you doesn't use it)

By [Neal Bridges \(Nbridges\)](#) on Friday, December 24, 1999 - 11:32 am:

If portability is your key concern, use Standard words as far as possible, declare dependancies on any non-Standard words and facilities your application needs, and provide reference implementations where required.

That way, if someone wishes to use your code on another Standard Forth, he has all the information he needs to provide your application with what it needs.

Neal

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Dictionary overflow

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Dictionary overflow](#)

By [Kristopher Johnson](#) on Friday, December 24, 1999 - 01:08 am:

I've encountered a dreaded "dictionary overflow" error while loading my application's code. This is not really a problem--it only happens if I load the disasm library module along with my code. But it did get me wondering about workarounds, in case I run into this "for real" someday.

After the error message is printed, HERE returns 1858, and CSUNUSED returns 13. I assume that running out of code space is the problem. At startup, CSUNUSED returns ~32K. After loading disasm directly after startup, it's ~20K, implying that disasm takes about 12K of code space, I guess.

Are there any magic words or techniques that can be used to increase the available space, or is it a hard limit (until Quartus Forth 2.0 comes out, anyway)?

By [Neal Bridges \(Nbridges\)](#) on Friday, December 24, 1999 - 01:14 am:

You are correct, the 'dictionary overflow' refers to codespace -- *disasm* is a fairly large module.

In version 1.2.5 (and the upcoming 1.2.6), codespace is a little over 42K. That'll help. I've only encountered one user who hit the 32K upper limit when writing an app, and he was the reason I expanded it to 42K. Thanks to the high density of compiled Forth, it takes a great deal of code to fill that space! :)

Neal

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Help me return to the fold

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Help me return to the fold

By [John Oliver](#) on Thursday, December 23, 1999 - 11:48 am:

I stopped using Forth about 15 years ago because no one else in my group knew the language and thus my code could not be supported. Now I have a Visor and Quartus Forth looks ideal for me to "roll my own" apps. Looking at the docs available it is clear that things have changed from the Forth 79/83 that I am used to ... can you point me to a concise reference to help me get up to speed with ANSI Forth (even just a nice tight vocabulary list with stack diagrams would help). I downloaded the ANSI docs but they are too verbose.

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 23, 1999 - 01:34 pm:

I have just created this document (extracted from the Standard):

[ANS Standard Forth: Quick Reference](#)

Neal

By [Barry Ekstrand](#) on Thursday, December 23, 1999 - 02:43 pm:

Neal, I have a similar file created from a reference manual in doc format so I can keep it on my device that I will send to you (also versions in text and Word format). If you find it worth putting in the file area, be my guest.

Barry

By [John Oliver](#) on Thursday, December 23, 1999 - 05:19 pm:

Wow ... You posted that while I started doing a similar extraction ... glad I paused for a rest at CONSTANT

Thanks

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Version 2?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#) **Version 2?**

By [Alex Alava](#) on Wednesday, December 22, 1999 - 02:52 pm:

Neal,

Can you post the list of new features that will be added to the coming version 2?

As far as I know from previous posts:

- a) doskey equivalent command history using up/down button
- b) respond to launch codes
- c)?????????

Maybe we can generate a discussion on a wish list for Version 2! Hopefully this could generate a thinking process that you could get ideas on what else to incorporate. I don't mean to make your work extra harder. The product and support are excellent. I just want to see how far we can raise the development bar so that it really stands out when compared to other development systems.

Are you getting close to a release date? Do you need some testers. I will pay for my upgrade in advance if needed.

Another suggestion would be to have a separate web page showing the status of Version 2.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 22, 1999 - 09:52 pm:

Hi Alex. Here's a partial list of features that may well surface in version 2:

- scrollbar
- enhanced optimizer
- cooperative multitasking
- i/o vectoring
- multi-segment apps (>64K)
- extended floating point operations
- launchcode support

I'll give you the word when it's ready to fly in beta. Thanks for your offer!

Neal

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Needed features: come back to Qforth with old context preserved

**[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\)](#):
Needed features: come back to Qforth with old context preserved**

By [Francois Vignon](#) on Wednesday, December 22, 1999 - 05:36 am:

What do you think about coming in Quartus Forth with the previous context ?
You can put in startup.quartus something like 'reinit', 'new' (or some other word) if you want start quartus in a blank state. if not, all old vocabulary is always here. so you can use word without reinclude it (too time lost).
or, you can have two palm: one for quartus and one for others tasks ;-)
IMHO, *without* this features, you loose many interest of forth.

By [Erwin Schomburg](#) on Wednesday, December 22, 1999 - 06:04 am:

This has been discussed in here several times. The conclusion was that the majority of folks who have an opinion in this conciously decided against. The reason is, if you run into problems due to bugs in your application programming, you want to start from a clean slate without rests of potential rubbish in the system, disregarding the slight delay on startup as irrelevant, as you can always automate the startup-inclusion of files required for a given project from the startup file.

May the Forth be with you!

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 22, 1999 - 02:10 pm:

Indeed, it is a design decision to have the system start clean each time. A world of grief is avoided this way.

Neal

By [Francois Vignon](#) on Thursday, December 23, 1999 - 04:05 am:

Ok, Ok. You are right in case of a project, but I'm not using forth for building project :-)
I use only qForth for works, not for developing a "finished" application.
Maybe the difference is'nt very clear: it's like using a word processord for taking notes and make reflexion: a paper sheet is better for that.
In my example, a compiler is like a word processor, but if you want try some guess, you must edit, compile, run and so many times, for that a interpreter is better. qForth is like a compiler (you come in and all your work is 'compiled') but Forth is more a interpretativ (?) language: as you can define word, forget it, retry, and so. if you come in/out of qforth without loosing works, you can have a lot of word, trying to add a new one (with markers,and so). if it does'nt work you goes out, edit, come in, include it (without reincluding all the rest).
But, of course, if your goal is to have a tool for building application, you are right. and if my goal is to have a tool, you are wrong.

perhaps a small sample of my needs:
many time during the day, I need something to have the time in unix format (seconds from 1/1/70) to make manipulation/conversion/addition, etc. I can make that with qForth, of course, but I have many more needs like that, and very fluctuant needs: Forth is **the** tools for that, as long you don't need your palm for the phone number of your mother in law ;-), you come back to qForth and you have lost you work (after some big calculation you have on your stack the Claudia Schiffer phone number, but after fetching from palm app the **other** number, you take your care and you fetch a wall ...)
but, perhaps I'm wrong :-)

By [Francois Vignon](#) on Thursday, December 23, 1999 - 07:55 am:

Addendum to previous message:

Or maybe, can we set a marker and a Event Handler, which, when a quit event occurs, save in a database all new dictionary from marker, all stack and many other things, and a word for reloading this database ? (we can put this word in startup.quartus). I think something like that can be made, and it's **really** what I need.

Many thanks for your attention.

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 23, 1999 - 08:32 am:

I would recommend creating a memo named *scratch*, and putting

include scratch

in your *startup.quartus*. This will go a long way toward what you're after.

Neal

By [dave kenny](#) on Monday, March 13, 2000 - 06:00 pm:

Unless compiling several hundred forth words happens in a second or less, I'm sure I'll get frustrated quickly. To me as to Francois Forth is not a language to generate application programs. Forth is an environment for interacting with stuff.

I was hoping that precompiled applications might be the answer, but I see that they are forth-less, that is without the dictionary etc. I'm a command-line kind of guy. Why would I want to diddle around with forms and GUI stuff with a spiffy extensible language like Forth there?

I rather hoped there was a way to add stuff to the dictionary, then save the whole thing as a new application, just like QForth, except with more words in the dictionary. If it blows up, I'd expect to just delete it and start over again from QForth and my source 'files'.

(For what it's worth I spent a year and a half living in F83, using MsDos only to copy my .blk file to diskette for backup. I have yet to use a development environment I really prefer to it, **especially** not the GUI ones.)

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 06:29 pm:

At present there is no such facility, Dave. Compilation speed is quite quick, however, and will get quicker. Including your extensions at startup is a reasonable solution.

Neal

By [Francois Vignon](#) on Tuesday, March 14, 2000 - 04:08 am:

Thanks for you support, Dave.

Now we are almost two guy who need this feature, and Neal is alone, so, I think he **must** [it's democratic, no ;-)] implement this feature :-)))

Yeah, many thanks in advance, Neal ...

By [Erwin Schomburg](#) on Tuesday, March 14, 2000 - 06:51 am:

Now, now, Neal is not alone in this. I'm also strictly against in the current incarnation of Quartus. I wouldn't mind precompiled sets in future versions, but at present the closeness of Forth programming to the heart of the OS makes it much more desirable to have (Quartus-) system startups from a clean slate.

/Erwin

By [Garth T Kidd \(Garth\)](#) on Tuesday, March 14, 2000 - 07:34 am:

Depends on who you are, Erwin. I'd prefer restarting in the old state (it's just the dictionary shoved into a database, right?), as I can type 'cold' anytime I want a clean slate.

I'm not absolutely hanging out for the feature -- I enjoy having a fresh dictionary to play with, and would probably type 'cold' a lot -- but I can see where the other guys are coming from.

By [Matthew Blair \(Blair\)](#) on Tuesday, March 14, 2000 - 08:33 am:

I'm a relative newbie to Forth, or more specifically Forth systems, so could someone explain to me what the fuss is all about?

By [Jim Hendricks \(Jimh\)](#) on Tuesday, March 14, 2000 - 10:10 am:

Neal, just a thought, I understand the argument against saving state. I also understand the argument for saving state. Is it possible to save the compiled form of the user dictionary, and restore it based on the startup memo? If the startup memo has this setting in it, attempt the state restore?

I originally wanted full state restore, then as I got more into Quartus and Forth decided that it would be too dangerous for me. But there are some things that I know don't have any harm that I always load on my startup. (Like doc support!). While I have come to accept the 5 second load time on a 20MHZ device, I was quite suprised when I loaded Quartus without my startup to see only a second. If I was more inclined to preload some other libs, I beleive the startup time of Quartus would get to be a detractor. How hard would it really be to save the

User Dictionary through maybe a saveUser word, then restoration based on a startup setting?

I hope I haven't just thrown gasoline onto the fire (gasoline's too expensive for that!)

Jim

By [Neal Bridges \(Nbridges\)](#) on Tuesday, March 14, 2000 - 10:10 am:

Some Forth systems let you add new definitions to the kernel, and then save that kernel as a customized version of Forth. I have problems with this for several reasons, in no particular order:

- 1) **Licensing.** The Quartus Forth license prohibits the creation of derivative works, meaning you can't write your own Forth compiler with Quartus Forth, or distribute modified versions.
- 2) **Support.** If you're having a problem, I'd need you to roll back to a clean dictionary; this gives rise to the need to save and restore customized dictionaries. This leaves us with the rough equivalent of source files, only now they're huge and in binary.
- 3) **GUI interaction.** The dictionary state is frequently intertwined with the dynamic memory/GUI state; since there's no practical way to preserve that state, it makes sense for the whole environment to come up clean each time.
- 4) The facility to customize the system already exists, via the *startup.quartus* memo. You can customize your kernel by re-compiling any sources you choose at startup. Depending on how much you're adding, this may be instant, or it may take a few seconds. On a Visor Deluxe (the device in front of me at the moment) compilation speed is presently about 2300 bytes of source per second, so a 4K memo of customizations -- a fair amount of Forth -- would take approximately 1.78 seconds to load.

I have a new dictionary design in-hand that will increase compilation speed even more; I think that's the best direction to go.

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, March 14, 2000 - 10:15 am:

Jim -- at present the user dictionary is melded with the internal dictionary as each definition is added. I would need to waste additional space to track user definitions in order to be able to extract them for saving.

I have given this some thought, and if I can come up with a clean solution I may make it available at some point, but it's a version 2.something enhancement.

Neal

By [Jim Hendricks \(Jimh\)](#) on Tuesday, March 14, 2000 - 11:38 am:

I thought the internal dictionary was kept in a database record (storage heap) and the user dictionary was kept in memory (dynamic heap). If this is true, wouldn't you simply need to save out the dynamic heap portion of the dictionary?

Just a thought...

Jim

By [Neal Bridges \(Nbridges\)](#) on Tuesday, March 14, 2000 - 12:55 pm:

The user dictionary is kept in the storage heap also. Dynamic RAM is used strictly as dataspace.

Neal

By [Francois Vignon](#) on Wednesday, March 15, 2000 - 10:50 am:

Hi, everybody, after some reflexions I understand it's very hard to implement (or very easy *but* at a big cost), so you can forget it.
but it's always a needed feature :-)

So, maybe we can take another way:
can palm OS nest tasks ?

if yes, I run quartus, when quartus detect buttons or application tap (?) or other events, quartus start the according task *without* exiting itself. when you want to go back to quartus another time, I start quartus, quartus see a previous instance and activate the previous instance. the bye word destroy the current instance. in fact, when running quartus, you have lesser memory for another task, but it's not really a problem ...

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 11:23 am:

In fact that would pose a problem for many apps that expect a certain amount of free dynamic RAM. It would likely result in strange crashes and unpredictable behaviour.

Something like this is PopUp Note! -- it lets you edit memos from inside any app.

Neal

By [Francois Vignon](#) on Wednesday, March 15, 2000 - 11:27 am:

maybe can you simply add a quit confirmation before leaving quartus ?

the worst case is: you define some word, you make some guess and your stylus goes in the calculation button, you lost all ... if you can put a warning+confirmation before, it's a good thing ...

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 11:30 am:

I'll consider it Francois -- if such a thing goes in, it'll be configurable, as it would drive me nuts

:)

Neal

By [Francois Vignon](#) on Wednesday, March 15, 2000 - 11:35 am:

sorry, but my english level is not enough from understand clarly: " as it would drive me nuts :)"

can you explain ?

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 11:38 am:

Ah, it would make me crazy to have to say "Yes" every time I switch between Quartus Forth and another app.

Neal

By [Francois Vignon](#) on Wednesday, March 15, 2000 - 11:42 am:

I understand the sentence.

Maybe I (you, or somebody) can write a simple memo which install a new standard event handler for hanging conditionnaly the quit event. you include it on startup.quartus if you need this feature ... I think it's terribly simple to do, no ?

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 12:03 pm:

Should be fairly straightforward.

Neal

By [Francois Vignon](#) on Wednesday, March 15, 2000 - 12:12 pm:

Thanks Neal

By [Francois Vignon](#) on Thursday, March 16, 2000 - 10:35 am:

Hi Neal.
after many days, I have followed your advice: I have installed PopupNote and now, the needed feature is not so important (but do you understand that, reloading all at each source modification "drive me nuts" too ...)

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VOCABULARY's?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): VOCABULARY's?](#)

By **Michael Parker** on **Tuesday, December 21, 1999 - 03:05 pm:**

I also can't seem to find an equivalent to VOCABULARY in the ANSI standard. There's all sorts of nifty routines that can be used to implement nearly any vocabulary search system you want, but it looks like you have to roll your own vocabulary the way asm68k and disasm do, with a wordlist constant and another word to push that wordlist onto the search stack. Is that just pretty much the way ANSI programs do it, or do asm68k and disasm do it that way because it involves the fewest environmental dependencies?

By [Neal Bridges \(Nbridges\)](#) on **Tuesday, December 21, 1999 - 04:21 pm:**

The ANSI Standard SEARCH ORDER wordset lets you implement the older VOCABULARY functionality:

```
: vocabulary ( "name" -- )
  create wordlist ,
  does> ( -- )
  @ >r get-order nip >r swap
  set-order ;
```

Example:

```
vocabulary moo
also moo definitions
```

'moo' is now the first wordlist in the search order, and new definitions will go into it.

Neal

By **Michael Parker** on **Wednesday, December 22, 1999 - 11:05 am:**

I had gone ahead and defined VOCABULARY much as your example, but I wanted to make sure I wasn't misreading the standard; the lack of a VOCABULARY word looked pretty wierd given the otherwise fairly comprehensive functionality in the search order wordset.

Thanks for the clarification!

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Minimizing size of compiled prc programs

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Minimizing size of compiled prc programs](#)

By [Wade Carlson](#) on Tuesday, December 21, 1999 - 02:27 pm:

When a program is compiled, are the comments removed from the program, or do they contribute to the size of the compiled program (i.e. should I remove all comments before compiling)? Also, is an entire library file compiled if I only use one of the commands within the library file? For example, let's say my program 'includes' core-ext, but the only thing I actually reference within core-ext is ?DO. Would I be better off just putting the ?DO code directly into my own memo pad by itself? Thanks

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 21, 1999 - 02:40 pm:

Good news:

1. The comments are never compiled into your target application.
2. Only the functions you use are compiled into your application.

Neal

By [Mark Beckman](#) on Tuesday, December 21, 1999 - 05:21 pm:

While you are on the subject, what is the definition of "Only the functions you use" ? If I tick (') a word and later execute the result (this is the only time I way I use it) will all be well (I know I could try it but I'm curious)?

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 21, 1999 - 07:47 pm:

Let me answer that with an example:

```
: hello ." Hello" ;  
  
: helper ." Time to compile!" ;  
  
: go  
  page  
  ['] hello execute  
  begin key drop again ;  
  
helper  
' go 12345. MakePRC Hello!
```

Both 'go' and 'hello' will be stored in the target PRC, while 'helper' will not.

Neal

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Skeleton wanted, please!

**[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
Skeleton wanted, please!**

By [Greg Lisle](#) on Tuesday, December 21, 1999 - 11:13 am:

Neal,

I guess I'm the exception around here. I know Forth VERY well, but the Palm is a black hole to me. I feel like I'm looking at a elephant through a keyhole. With time I could figure out all the details, but... I admit it, I'm lazy. (and harried)

What I would like to see is a skeleton program that shows how to put Forth code into the Palm environment. Something like the following listing. Perhaps there are other snippits that would be useful, but I don't know enough to ask yet.

\ Skeleton

\ This program provides the
\ framework for building a
\ Palm program that meets
\ standard appearances.

\ The following code clears
\ the screen and builds the
\ standard title bar.

\ The following code handles
\ the standard id/info button

\ The following code implements
\ a standard menu with
\ three categories.

\ The following code writes a text
\ block in the middle
\ of the screen.

\ The following code centers an
\ image above the text block.

\ **The following code implements**
\ **a data entry field under**
\ **the text block.**

\ **The following code implements**
\ **three radio buttons under**
\ **the entry field.**

\ **The following code puts two**
\ **buttons on the bottom of**
\ **screen.**

\ **The following code closes out**
\ **the program cleanly.**

\ **Other functions that would be**
\ **nice, but probably not in**
\ **a skeleton program.**

\ **Open Address Book**
\ **Find in Address Book**
\ **Read from Address Book**
\ **Write in Address Book**
\ **Close Address Book**

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 21, 1999 - 11:38 am:

Ok -- none of that is hard to illustrate, but first to clarify, buttons and other on-screen elements are not created programmatically, as a rule, but rather are defined as resources (using RsrcEdit, for instance), and then just brought up with a simple **ShowForm** instruction.

Neal

By [Bill Marcy](#) on Tuesday, December 21, 1999 - 06:24 pm:

I too would very much like to see a skeleton like this. Any takers?

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 21, 1999 - 08:16 pm:

The sample apps Swatch and Duco are in fact intended to cover much of this ground. Would better annotation help?

Neal

By [Dan Richardson](#) on Tuesday, December 21, 1999 - 09:32 pm:

Yes, please, better annotation.
Swatch is full of good stuff as I dig into it,
but it could use some explanation.
Maybe even a running stack diagram for parts of it.
PhoneDecode looks like another good teacher.

By [Wade Carlson](#) on Wednesday, December 22, 1999 - 12:40 am:

Where can I find PhoneDecode?

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 22, 1999 - 07:50 am:

<http://www.palmgear.com/software/showsoftware.cfm?sid=20594819991119172130&prodID=3195>

By [Greg Lisle](#) on Wednesday, December 22, 1999 - 10:34 am:

OK, I've run through (lightly) Steven Donahue's tutorial. It seems to cover a lot of my questions about elements in the user interface. Apparently, QForth is not sufficient to do a "real" application by itself. You need something like RsrcEdit as well. I can live with that, even if it does bother me that QForth is not "all I need." Just one of my quirks I guess.

One of my biggest problems has been that most of the documentation for the Palm environment uses C, and, strange as it may seem, I am not really comfortable in C.

I guess to really get anywhere, I'll have to just grind through it to understand resources and the like. :(

I'll second the request for more/better annotation on the "sample" programs. The learning curve here is VERY steep. We need all the help we can get. As for Forth based questions, I'll try to watch and throw in my two cents worth whenever it looks like I can help.

---- Greg

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 22, 1999 - 11:17 am:

Any development for the Palm requires a resource editor. CodeWarrior has one of its own, GCC uses PilRC, and for on-board development with Quartus Forth, RsrcEdit is the best choice.

Certainly ask all the questions that come up!

Neal

By [Erwin Schomburg](#) on Wednesday, December 22, 1999 - 12:41 pm:

I beg to differ. Although I agree that from a certain level of user-friendliness forms resources (and an editor to create them) are a must, I created my Eisbaer application very early before the release version of Quartus as a proof of concept that you can program applications with just what Quartus gives you (default icon, default forms) for quite while until you need to take the plunge into resource creation.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 22, 1999 - 01:47 pm:

Quite right, Erwin -- but for making 'typical' Palm apps, with buttons and menus and so forth, a resource editor is of course required.

Neal

By [E. Ross Helton](#) on Wednesday, December 22, 1999 - 03:43 pm:

Hi Greg;

All of the applications I have created were first created with QForth and nothing else originally. RsrcEdit does make it easier to do some of the forms. But QForth by itself makes a very good programming option.

However, to Neal's defense and to put this into perspective. There isn't programming language alive for any computing platform that doesn't require an add-on to accomplish the really fine forms and easy of use graphics. Most either have to have an additional package like RsrcEdit as a separate unit, or some have these packages added.

Make it a good day!

Ross

By [Erwin Schomburg](#) on Wednesday, December 22, 1999 - 04:38 pm:

Neal, I don't disagree with your last statement, just wanted to say you can go a long way before you really need to.

Maybe to enlighten Greg on history, just about the time when the GNU desktop resource editor was deemed not fit for an "all on Palm" design approach with Quartus, in the course of the following discussion(s) someone here found the Individeo RsrcEdit, last remainder of the then frozen, now revived, OnBoardC project. It makes a perfect complement to Quartus and has even had some features designed in to comfort us Quartus folks from then on. To do something specific for Quartus with RsrcEdit known of and available would have been like an attempt to reinvent the wheel.

/Erwin

By [Jim Hendricks](#) on Wednesday, December 22, 1999 - 04:52 pm:

Just dropping my 2 cents into the fountain...

Just a clarification, RsrcEdit is not needed even if you want resources in your applications. Some of the resources can be created dynamically, and Quartus can definitely create the resources statically. With RsrcEdit, you eliminate having to know the intimate details of resources and spend your time building some real logic. When I first started working in Quartus, most Q devs were using PilRC which is an off-board solution. Since I wanted full on-board and I wasn't aware of RsrcEdit, I delved into writing a Quartus app that would create the resources necessary for an app (kinda like a very dumbed down version of RsrcEdit 'cept written in Quartus). When I was introed to RsrcEdit, I fell in love cause it was so much more than my own Quartus based RsrcEditor and I didn't need to know the resource database format. That is why when OnBoardC was canceled and RsrcEdit with it, I spearheaded the campaign to get RsrcEdit released as a separate tool like it is now, I didn't want to have to go back to my Quartus resource editor and try to replicate what we already had in RsrcEdit.

I say all this just to say, Quartus IS an all in one on-Board development environment, tools like RsrcEdit just eliminate some of the coding I would have to do myself, as well as some of the knowledge of the palm database internals for resources.

Jim

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 22, 1999 - 09:53 pm:

That's so. I had in mind initially to write a PiRC-like language within Quartus Forth itself, but RsrcEdit was the right wheel at the right time. Thanks to Jim for carrying the torch.

Neal

By [Greg Lisle](#) on Thursday, December 23, 1999 - 07:54 am:

Thanks for the illuminating history/technology lesson guys. Now all I have to do is get busy.

BTW, Neal, are you still planning to put a page of links to other developers on your site?

---- Greg

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 23, 1999 - 08:00 am:

Yes indeed, Greg.

Neal

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"overloading the buttons"?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

"overloading the buttons"?

By **Dan Richardson** on Tuesday, December 21, 1999 - 10:48 am:

Palm's OS Companion, under Good Design Practices, says this:

- > Consider overloading the buttons.
- > If you do overload, release the buttons at every possible opportunity.
- > This is useful only for certain applications, such as games.

Anybody know what they mean?

All other references to overloading that I can find are about redefining words.

If they're just talking about using the hardware buttons in your app, what's the bit about releasing?

Dan

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 21, 1999 - 01:49 pm:

Yes, they're talking about using the hardware buttons in your app. They're suggesting you return them to normal functioning whenever your app is not actively using them, so that they will have the expected behaviour as much as possible.

Neal

By **Dan Richardson** on Tuesday, December 21, 1999 - 05:34 pm:

Thanks, Neal.

I was hoping they were talking about something else.

Still trying to figure out how to get a normal button to act on the pen down.

It looks so simple in the docs, there's `ctlEnterEvent` in your table of event types returned by `ekey`.

I understand that it's not that simple, and yet it now works for repeating buttons.

Does `FrmDispatchEvent` not come into play there?

Under what circumstances `_will_ ekey` return a `ctlEnterEvent`?

I can make them all repeating buttons, and just not act on repeats from the one, but that seems lame.

I need to bite the bullet and poke at your `ekey` variant code until I understand it.

The code you showed me to beat `FrmDispatchEvent` to the punch uses `HandleEvent`.

So does the `ekey` variant that's been bandied about here several times in the last year.

Where is `HandleEvent` documented?

I'm trying to learn how to look this stuff up.

You know, the best resource I've found is the discussion group archives. Whatever the question, somebody's asked it already.

Dan

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 21, 1999 - 07:49 pm:

HandleEvent is the internal logic for event handling by EKEY. In most circumstances you'll never need to know about it; what it does is pass an event past all the appropriate system handlers. If you want to get at events before the system sees them, use the variant I showed earlier.

Neal

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Disasm and SEE

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Disasm and SEE

By [Kristopher Johnson](#) on Monday, December 20, 1999 - 01:43 am:

I'm trying to use SEE (defined in the disasm library). It works well, but the disassembled function I'm trying to look at won't fit entirely on the screen. Is there any way to scroll backwards in the console, or to get SEE to do a "more"-like output like WORDS does?

Thanks.

By [Neal Bridges \(Nbridges\)](#) on Monday, December 20, 1999 - 01:59 am:

Sure; just do

```
true more drop
```

before **SEE**, or redefine **SEE**:

```
: see
  true more
  see
  more drop
```

```
;
```

Neal

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Bitmap resources (the long-awaited sequel)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Bitmap resources \(the long-awaited sequel\)](#)

By [E.](#) on Saturday, December 18, 1999 - 04:26 am:

When I was having my initial problems managing the stack using WinDrawBitmap (in Part One, if you happen to remember), Neal said something about how I should (if I don't get 0) get one of a few specific other values returned.

What are those values, and how do I check for them? WinDrawBitmap doesn't return a value (according to the "Quartus Forth Specific Words" page). IS there a way to check for an error, other than "oh, look, the reset button came up"?

-E

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 18, 1999 - 07:51 am:

Some of the Palm OS ROM functions return error values; some claim to, but don't -- they just return "Fatal Exceptions" and a soft-reset dialog if there's a problem. In practice, this is not generally an issue -- what specific circumstance are you trying to guard against?

Neal

By [E.](#) on Saturday, December 18, 1999 - 01:40 pm:

I honestly have no idea. When I last used bitmaps, I was reasonably sure that I had done enough sanity checking that if the WinDrawBitmap failed, it was because the entire app was broken. Therefore, I didn't bother checking for errors.

This is probably more arrogant than my Forth skills can justify, so I was wondering what could be done about it, when I recalled what you had said.

If its only method of "error checking" is to crash, then there's nothing I can do about it, so ignore this thread. :)

-E

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 18, 1999 - 01:42 pm:

If you try and draw a bitmap way off-screen, I think you'll cause a reset, yes. You're right, WinDrawBitmap doesn't return an error code.

Neal

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Generic STACK word

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Generic STACK word

By [Michael Parker](#) on Thursday, December 16, 1999 - 06:33 pm:

Years and years ago, I used a Forth variant called "Fifth" (terribly original, I know), which was a bastardized Forth in a Smalltalk-like browser with source debugging and whatnot.

Anyway, this system had a nifty word called STACK, which took a before-and-after stack picture and generated code to do it e.g.

```
STACK A|AA ==> dup
STACK AB|BA ==> swap
STACK ABCDEFGH| ==> 2drop 2drop 2drop 2drop
STACK ABCD|ABCDABCD == lotsa stack munging
```

...you get the idea.

I found it useful enough that I ported it down to my pet FIG-Forth system using pure forth (the Fifth system generated 68000 assembly code for the rearrangement, so it was **really** fast). Anyway, I've hacked my old FIG version into ansi forth, and would like to know how to post it into the "contributor" file section, assuming there's any interest by Neal or the Quartus community.

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 16, 1999 - 06:35 pm:

Sounds neat. Mail it to me, and I'll post it.

Neal

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Respond to launch codes

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Respond to launch codes

By [Dietmar Uhlig](#) on Thursday, December 16, 1999 - 08:31 am:

Hi all,

can QF PRC's respond to launch codes and if so (that's what I strongly assume) how? (Is there a 3 lines example?)

Can QF respond to launch codes in the evaluation version also (i.e. in the interpreter)?

Thanks a lot,
Dietmar

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 16, 1999 - 08:40 am:

Hi Dietmar. Quartus Forth version 1.x.x does not pay attention to launch codes. Version 2 will.

The evaluation version doesn't, simply because it wouldn't make sense. Launch codes are sent only to PRCs, which in the evaluation version would be Quartus Forth itself, and not your application.

Neal

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FrmGetControlGroupSelection Question.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): FrmGetControlGroupSelection Question.](#)

By [E.](#) on Wednesday, December 15, 1999 - 07:30 am:

Gotta love those routine names.

Okay, it's documented as
(groupNum[>byte] &frm. -- Byte)

So if I have a group of pushbuttons, A-M, numbered 9900-9912, will this work? If so, what will it return?

```
1 >BYTE FrmGetActiveForm FrmGetControlGroupSelection
```

My guess is that it'll do something insane like "0000000000001 == A" .. "1000000000000 == M", or some such. I hope I'm wrong.

[Ignorable side note: The docs say that >BYTE is the same as "8 LSHIFT", yes? "1 8 LSHIFT" is 256. What size byte is PalmOS expecting?]

I apologize for the amazingly simple question, but (being far from a HotSync at the moment) I'm a bit reluctant to screw my Palm up too badly.

No, I realize that this code isn't dangerous, it's just that I always DO when playing with RsrcEdit and random forms, y'see. I was never very good at hacking a Macintosh, and I still have to trial-and-error-and-error-and-error my way around RsrcEdit.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 15, 1999 - 08:31 am:

Here's a re-usable function that does all the work. Pass it a group number, and it tells you the ID of the button that's pushed in that group:

```
: group-setting? ( group -- id )
  >byte FrmGetActiveForm
  FrmGetControlGroupSelection
  FrmGetActiveForm FrmGetObjectID ;
```

Neal

By [E.](#) on Wednesday, December 15, 1999 - 08:35 am:

Oh nice. I should have known there was a call for that. Thanks.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 15, 1999 - 08:39 am:

No problem. The good thing about these -- write'em once and you're done. :)

Neal

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How to call Palm APIs

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

How to call Palm APIs

By **[Kristopher Johnson](#)** on Wednesday, December 15, 1999 - 02:32 am:

Does the Quartus Forth manual, or any other document, explain the "rules" for calling Palm OS API's?

I'm just getting started, so maybe I'm just missing something. But right now, it seems to me that calling a Palm OS API requires you to look up the API documentation, then figure out the sizes of arguments and do a lot of other "manual" trial-and-error stuff. I can't determine what the common conventions are.

Maybe I've just been spoiled by other languages that provide automatic conversion and validation of data types. I'm having trouble getting into the Forth mindset, so any tips would be appreciated.

Thanks.

By **[Erwin Schomburg](#)** on Wednesday, December 15, 1999 - 07:34 am:

There is a chapter "C Typedefs" in the Appendix of the manual, there also used to be a file "Quartus Systraps" that held all the Quartus style prototypes for the system calls. Neal, where is it hidden these days?

/Erwin

By **[E.](#)** on Wednesday, December 15, 1999 - 08:01 am:

Not Neal, but was just looking at it.

<http://www.quartus.net/products/forth/manual/specific.htm#systraps>

By **[Neal Bridges \(Nbridges\)](#)** on Wednesday, December 15, 1999 - 08:16 am:

And "C Typedefs" is at

<http://www.quartus.net/products/forth/manual/ctypes.htm>

Neal

By **[Erwin Schomburg](#)** on Wednesday, December 15, 1999 - 09:01 am:

E, obviously a long time since I last used/reloaded the manual...

/Erwin

By **[Kristopher Johnson](#)** on Thursday, December 16, 1999 - 01:19 am:

Ah. Somehow, I totally missed the "C Typedefs" part of the manual--that's exactly what I needed.

**Thanks,
Kris**

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Where is f.s?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Where is f.s?

By **Jade Runner** on Wednesday, December 15, 1999 - 02:26 am:

f.s doesnt seem to be in either float or float-ext

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 15, 1999 - 08:23 am:

Are you thinking of FS. ? It's built into the kernel.

Neal

By **Jade Runner** on Wednesday, December 15, 1999 - 01:17 pm:

FS. seems to return only the top of the fp stack...i was actually looking for a non-destructive fp stack dump

thanks!

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 15, 1999 - 02:42 pm:

Ah I see. Easily done:

```
\ f.s 99.12.15 2:20 pm NAB
```

```
needs core-ext
needs toolkit
```

```
: f.s
  fdepth
  dup ." [" 0 0 d.r ." ] "
  0 ?do
    fp0 i 1+ floats - f@ fs.
  loop cr ;
```

Neal

By **Jade Runner** on Wednesday, December 15, 1999 - 05:30 pm:

Thank you very much!

Add a Message

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New beta version 1.2.6

**[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
New beta version 1.2.6**

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 15, 1999 - 01:24 am:

For those I promised a beta version tonight, please bear with me till tomorrow.

Neal

By [Dan Richardson](#) on Wednesday, December 15, 1999 - 08:42 am:

No problem.

I'd rather be programming, but
I'll find some way to kill the idle hours.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 15, 1999 - 09:58 am:

Also new in this beta is internationalized messages -- at present, only English and Spanish are supported. I'm still looking for volunteers to translate approximately 60 strings of text into German, Italian, French, and possibly also Dutch. Let me know if you wish to help!

Neal

By [Philippe de Rochambeau](#) on Wednesday, December 15, 1999 - 11:25 am:

I volunteer for French.

By [Erwin Schomburg](#) on Wednesday, December 15, 1999 - 12:40 pm:

German, if you like.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 15, 1999 - 02:32 pm:

Gentlemen, thank you both. I'll send you the list of strings to translate.

Neal

By [Douglas Atique](#) on Monday, December 20, 1999 - 10:25 am:

Neal,
Send them to me, too. I can do Portuguese and as I work at a Dutch company I can try to find someone to get Dutch, too.

Douglas

By [Neal Bridges \(Nbridges\)](#) on Monday, December 20, 1999 - 10:31 am:

That's great. Will do!

Neal

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Visor has arrived!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Visor has arrived!

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 14, 1999 - 09:28 pm:

After an appreciable delay, my Visor has arrived. Quartus Forth (and the other Quartus products) run on it nicely.

I'll be extending Quartus Forth to cover its additional capabilities over the next while.

Neal :)

By [Bill Marcy](#) on Wednesday, December 15, 1999 - 06:57 am:

Good to hear Neal, now lets see how long it take you to get the ROM out of it (providing you have the USB cradle) <s>...

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 15, 1999 - 09:55 am:

Is it difficult to extract the ROM? I wasn't in a hurry to do so, as the Emulator won't accept it yet anyway. It's PalmOS 3.1 with a few extra bits and pieces.

Neal

By [Bill Marcy](#) on Wednesday, December 15, 1999 - 10:24 am:

The problem I had was that I have the USB cradle, all the extraction programs are only for the serial cradle.

I finally found a kind soul to forward me over a Palm III rom, and I am now actually able to do some work.

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 16, 1999 - 10:18 am:

I think you would have been out of luck even had the ROM transfer worked; the Palm Emulator isn't yet ready to handle the Visor ROM.

Neal

By [Bill Marcy](#) on Thursday, December 16, 1999 - 01:10 pm:

And there you go. Let me know if you need a ROM, I would be happy to provide it.

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Symbolic debugger

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Symbolic debugger](#)

By **[Philippe de Rochambeau](#)** on Tuesday, December 14, 1999 - 06:14 pm:

Sometime ago, I remember reading a thread about the registered version of QForth including a 'symbolic debugger'. Does the registered version still include that 'debugger' and if so, how do you active it?

By **[Neal Bridges \(Nbridges\)](#)** on Tuesday, December 14, 1999 - 06:57 pm:

Hmm. I think you are referring to the ability to generate symbols in stand-alone apps; you can certainly do that with the registered version. The command is 'generate-symbols', and it should come before your MakePRC.

The result: an application that has a symbol-name embedded for each function. You can then use the Emulator to profile or debug, and it will list routines by name. Very nice.

Neal

By **[Bill Marcy](#)** on Tuesday, December 14, 1999 - 07:20 pm:

Neal,

Is this documented anywhere?

Thanks

Bill

By **[Neal Bridges \(Nbridges\)](#)** on Tuesday, December 14, 1999 - 07:31 pm:

In the manual -- type "generate-symbols" into the search engine.

<http://www.quartus.net/products/forth/manual/specific.htm>

Neal

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More problems with DmGetNextDatabaseByTypeCreator

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): More problems with DmGetNextDatabaseByTypeCreator](#)

By [Philippe de Rochambeau](#) on Tuesday, December 14, 1999 - 06:09 pm:

I am trying to adapt a C program written by Glen Bachmann to Forth as a learning exercise. This program is supposed to loop through the databases in the PalmPilot, printing the db name, id, number of records, and total bytes as it goes. Unfortunately, my transcription does not run too smoothly. In order to test it, I decided to make it print data from the first two databases in my Palm. Unfortunately, my program will not even print data from the second database!

In the following code, could someone please tell me why the second DmGetNextDatabaseByTypeCreator throws a 519 exception (DmErrCantFind) instead of returning 0?

Furthermore, why does passing stateInfoP's address (i.e stateInfoP >abs) as sixth parameter to the second DmGetNextDatabaseByTypeCreator function cause the program to crash whereas passing its value (i.e. stateInfoP 2@) does not make it crash (although DmGetNextDatabaseByTypeCreator still throws a 519 exception)?

Lastly, why does my 'namelabel' word get filled with garbage data (e.g. '3ad_:') when I declare after '2variable numRecordsP' and before 'create szName...' and print it later on, and does not get corrupted when I declare it AFTER 'create szName...' as shown below?

Many thanks.

Philippe de Rochambeau

=====

\ DBBrowse.f PR 1999.12.14

\ Source: Palm Programming, Glen Bachmann p. 165

needs ids
needs zstrings
needs string
needs double

2variable dbIDP
2variable cardNoP
2variable totalBytesP
2variable stateInfoP
2variable numRecordsP

create szName 32 chars allot

: namelabel ." Name: ";
: idlabel ." ID: ";
: numrecslabel ." # records: ";
: totalbyteslabel ." Total bytes: ";

dbIDP >abs
cardNoP >abs
true
0.
0.
stateInfoP >abs
true
DmGetNextDatabaseByTypeCreator
throw

szName 32 blank

0. 0. 0. 0. 0. 0. 0. 0. 0. 0.

szName >ab s
dbIDP 2@
cardNoP @
DmDatabaseInfo
throw

0.
totalBytesP >abs
numRecordsP >abs
dbIDP 2@
cardNoP @
DmDatabaseSize
throw

cr namelabel szName 32 type
cr idlabel dbIDP 2@ D.
cr numrecslabel numRecordsP 2@ D.
cr totalbyteslabel totalBytesP 2@ D.
cr

dbIDP >abs
cardNoP >abs
true
0.
0.
stateInfoP 2@

false
DmGetNextDatabaseByTypeCreator
throw

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 14, 1999 - 07:00 pm:

Your problem is a simple one -- the buffer at stateInfoP must be 16 bytes long. Yours is only four, so each time it is used it overwrites successive variables in memory. Make it 16 bytes long:

```
create stateInfoP 16 chars allot
```

If you look back at my working example, you'll see this also.

Neal

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CtlSelect/Enter/RepeatEvent

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

CtlSelect/Enter/RepeatEvent

By Dan Richardson on Monday, December 13, 1999 - 11:54 pm:

Kind citizens and denizens:

I'm Very New, just blundering through cut & pasting my first Quartus app. Having skimmed the O'Reilly book, 4 megs of forum messages from here, the 9 meg Palm reference PDF and lots of other wonderful stuff, I now know more than I did last week, but still know basically nothing.

Anyway.

I have three buttons on a tone generator. One's a repeater that Increments the frequency, another that Decrements it, and a normal button Plays the tone.

The Inc and Dec will play short tones, and when they repeat, they'll play even shorter. The Play will play a long tone. A readout will display the frequency. That's the whole app in a nutshell. It's used to help identify feedback frequencies when doing concert sound. I have it working in PocketC, but I want to be able to run it on old Pilots. So here I am, stretching my brainpan and quite enjoying myself.

I'm having trouble with the ctl...Event functions. ctlSelectEvent works, as copied from Swatch. ctlRepeatEvent gives me one response when I release, as if it was ctlSelectEvent. I can't make ctlEnterEvent work at all. Unfortunately, that's the one I most want. Needs to happen on the button push.

When I read the Nov 1 message about ctlRepeatEvent in Swatch no longer working, I figured I'd better ask for help.

I don't have a clear picture of what's on the stack at any given time. Notes in the following code would help, both where it's doing what I expect and where it isn't.

For now, my tone routines are represented by ." text messages, which write themselves on top of my form just fine. I'm pre-developing in POSE, no sound support to do debugging "Beeps" with. <grin>.

```
(ID) TGRA (ID) rsrc use-resources
\ Resource IDs:
1001 constant TGForm
1201 constant Increment \ repeater
1202 constant Decrement \ repeater
```

```

1203 constant PlayTone \ normal button

: do-scroll ( -- )
cond
  dup event >abs itemid Increment = if
  ." IncShortBeep" cr \ I get here when I release the Inc repeating button
else
  dup event >abs itemid Decrement = if
  ." DecShortBeep" cr \ I get here when I release the Dec repeating button
thens ;

: do-control ( -- )
cond
  dup event >abs itemid Increment = if
  ." IncLongBeep" cr \ I never get here
else
  dup event >abs itemid Decrement = if
  ." DecLongBeep" cr \ I never get here
else
  ." Beep" cr \ I get here when I release Play, as expected from ctlSelectEvent
thens ;

: handle-event ( ekey -- )
dup menuEvent = if do-menu then
dup ctlSelectEvent = if do-control then
\ replacing Select with Enter got me nowhere w or w/o the dup
dup ctlRepeatEvent = if do-scroll
then ;

\ Main entry point:
: go
TGForm ShowForm
begin ekey handle-event again ;

```

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 14, 1999 - 10:52 am:

Hi Dan! I've just corrected the ctlRepeatEvent problem in a new version -- I'll send you a beta version tonight to test.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 16, 1999 - 10:04 am:

Dan -- one problem -- I have no email address for you. Write me and let me know where you are.

Neal

By Dan Richardson on Thursday, December 16, 1999 - 07:41 pm:

OK, got 1.2.6U. Thank you very much.
 Was that 9am compile the beginning or the end of your day?

Commented out my registration code from startup.quartus.

My app behaves as before.

I get one DecShortBeep or IncShortBeep message when I _release_ the Dec or Inc button, as if it was called by a ctlSelectEvent.

I get a Beep message wen releasing the Play button, as expected.

If I replace my ctlSelectEvent with the ctlEnterEvent that I want to use,

I lose the Beep message from my Play button.

I never get a LongBeep message.

I could still use someone telling me what's on the stack at each point, I rather doubt that I have it written right.

Please?

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 16, 1999 - 07:53 pm:

Dan, can you send me the name you registered under? For some reason you're not showing up, I want to remedy that.

I will have to run your example here to see what's what... the 1.2.6 beta propogates ctlSelectEvents, I'm not sure about ctlEnterEvents in all cases, I'll check. I can easily extend it to do that too.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 16, 1999 - 08:01 pm:

Oh the 9:00am compile was the beginning of my day, as it happens :)

Neal

By Dan Richardson on Thursday, December 16, 1999 - 09:00 pm:

> I will have to run your example here to see what's what

I can send you the whole shebang and the resource if that would help. There's not much more than what I posted.

> the 1.2.6 beta propogates ctlSelectEvents

What's that mean?

BTW, in Swatch, you do

```
: handle-event ( eventType -- )
dup nilEvent = if show-time then
dup menuEvent = if do-menu then
ctlSelectEvent = if do-control then ;
```

Why aren't those "then"s "else"s?

I think my c is showing.

Dan

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 16, 1999 - 09:06 pm:

You are right; they should be else clauses. Doesn't matter much here, as they are mutually exclusive, but to be

really neat and tidy they should be nested IFs, yes.

What I meant by 'propogates', aside from the spelling error, is that the new version correctly sends out a `ctlSelectEvent` for popup-list selections. OS3.3 was not doing that by itself, whereas the earlier versions were. The nice part -- Quartus Forth can entirely insulate you from that change.

I suspect `ctlEnterEvents` are being absorbed also for lists; I can make an adjustment in that case. Please do send me your resource and I'll see what's what.

Neal

By Dan Richardson on Friday, December 17, 1999 - 10:07 am:

- > Try the attached beta -- same version, new build time :)
- > It allows `ctlEnterEvents` to be visible to your app also.
- > It appears to be working for me here.

`ctlEnterEvent` now works for repeating buttons. Cool.
Still doesn't work for standard buttons.
Well, it works, but on the release, as if `ctlSelectEvent`.

`ctlRepeatEvent` still fires once, on the release.

Palm SDK ref says:

When `CtlHandleEvent` receives a `ctlEnterEvent` in a repeat control (tREP), it sends a `ctlRepeatEvent`.
When `CtlHandleEvent` receives a `ctlRepeatEvent` in a repeat control, it sends another `ctlRepeatEvent` if the pen remains down within the bounds of the control for 1/2 second beyond the last `ctlRepeatEvent`.

I want to act on the initiating `ctlEnterEvent`, discarding the `ctlRepeatEvent` that came with it.
Then I want to act on the stream of `ctlRepeatEvents` that come along 1/2 second later.
Nothing should happen on the button release.

- > I notice your Increment button is so big it overlaps your title area;
- > odd but maybe what you intended.

Intentional, yes, but you're right, it looked odd.
I made the Inc and Dec buttons frameless, looks better.
I want the whole screen above the graffiti area to be three big buttons, no dead spots.
People will need to use this without looking at it.

- > The other thing -- your menu resource doesn't have a height,
- > so the "About" menu can't be selected.

Oh, look at that, you're right again.
Works when selected the first time, but not after.
Fixed.
I reap the benefit of beta-testing. <grin>

- > Minor, but thought I'd mention them.

Much appreciated.

Dan

By [Neal Bridges \(Nbridges\)](#) on **Friday, December 17, 1999 - 10:33 am:**

Ok. Here's what happens in the Palm OS: When you first tap a normal button, a `penDownEvent` is generated internally. `FrmDispatchEvent` sees this, figures out that it's over a button, and generates a `ctlEnterEvent`, but then loops internally on that event until the button is either released or the pen is moved outside of its boundaries.

If you need to get at that `ctlEnterEvent` before `FrmDispatchEvent` sees it, you need to break out `EKEY` itself, like this:

```
: GetEvent ( timeout -- event )
  s>d event >abs EvtGetEvent
  event @ ;
```

There's a `'HandleEvent'` built in, so...

```
: go
  begin
    50 GetEvent .
    HandleEvent
  again ;
```

This gives you a slightly lower level of access to the events, before the system gets to handle them.

Neal

By **Dan Richardson** on **Friday, December 17, 1999 - 02:15 pm:**

OK, you've just jumped about three chapters ahead of me.

Let's see.

I assume the `50 GetEvent` calls `GetEvent` with a timeout of 50/100ths of a second.

Is a tick defined somewhere?

I found a pronunciation of `s>d` in the docs, but no explanation.

Likewise `>abs`.

What does this line do?

```
s>d event >abs EvtGetEvent
```

And `"event @"` puts the address of the last event on the stack?

Why am I seeing a `ctlRepeatEvent` when I `_release_` a repeating button?

Happens regardless of how long I hold it, even just a tap.

And am I right in thinking that QForth's `ctlEnterEvent` behavior on normal buttons still needs to be changed?

Making progress...

Dan

By **Dan Richardson** on **Friday, December 17, 1999 - 02:19 pm:**

> And am I right in thinking that QForth's `ctlEnterEvent` behavior on normal buttons
> still needs to be changed?

Or were you saying that's swallowed by the OS,
which is what you were showing me how to work around?
Dan

By [Neal Bridges \(Nbridges\)](#) on Friday, December 17, 1999 - 02:55 pm:

Yes, the latter. It is effectively eaten by the form dispatch, and what I showed you is a workaround.

You get a `ctlRepeatEvent` on releasing a repeating button simply because you do; that's how they work in the Palm OS.

Neal

By [Neal Bridges \(Nbridges\)](#) on Friday, December 17, 1999 - 04:53 pm:

Oh also -- a tick is 1/100th of a second, on all current Palm devices. 50 gives you a half-second wait between events, which is quite reasonable in the general case and saves battery life.

```
s>d event >abs EvtGetEvent
```

This converts the argument on the stack, a single-cell timeout, to a double-cell value (with `S>D`) and then passes the address of the Quartus Forth event buffer as a 32-bit address to the `EvtGetEvent` system call, to retrieve the next event from the Palm OS event queue.

Neal

By [Neal Bridges \(Nbridges\)](#) on Friday, December 17, 1999 - 04:59 pm:

One more point -- `S>D` is defined in the ANS Forth Standard -- if you haven't downloaded this yet, do. `>ABS` is defined in the Quartus Forth manual...

<http://www.quartus.net/products/forth/manual/specific.htm>

Neal

By Dan Richardson on Friday, December 17, 1999 - 11:54 pm:

That's a bunch of helpful information.
Haven't dug into the standard yet.
Next piece of homework.

Thanks.

Dan

By Dan Richardson on Friday, December 24, 1999 - 05:21 pm:

Got it working, nice xmas eve present.
A bit of your code, a bit of Erwin's from Quint, and huzzah!
Thank you both very much.

I'm seeing the `ctlEnterEvent` on the normal button.
Repeat button's giving me the `ctlEnterEvent` with it's matching `ctlRepeatEvent`,
and then, a bit later, a nice chain of `ctlRepeatEvents`, bing bing bing.
Acts just like the Palm reference says.

- > You get a `ctlRepeatEvent` on releasing a repeating button simply because you do;
- > that's how they work in the Palm OS.

I'm not seeing that. Where does it say I should?

Should I assume that `ekey`'s really only useful in the default Palm mode of act on release?

Dan

By [Neal Bridges \(Nbridges\)](#) on Friday, December 24, 1999 - 09:14 pm:

Congratulations on completing it! :)

EKEY does 'act on release', as you say -- or rather, the Palm OS itself reports the events in the order you describe. For most every circumstance, it's all you'll need. Fortunately it's quite simple to step in, as I showed earlier, and act on events before they are ever passed to the form handler.

Neal

Add a Message

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Change to fields

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Change to fields

By [Trevor Steele](#) on Monday, December 13, 1999 - 05:34 am:

Hi Neal

I have been getting a few protests from POSE and OS 3.3 when using `string>field`. POSE protests about insertion points not being visible. It's not a fatal error, just a little annoying. the problem is eliminated with the following small change to the `string>field` word:

```
: string>Field ( c-addr u fieldID -- Err )
  >r swap >abs
  r> GetObjectPtr
  2dup 2dup \ add extra 2dup
  FldGetTextLength 0 2over FldDelete
  FldSetInsertionPoint \ add this call
  FldInsert FlushQueue ;
```

In addition to this (sorry if I always seem to be bringing up problems!) I have found that forms each with the same menus and containing fields, when displayed using `popupform` retain their cut, copy and paste functions defined in the menu but when displayed using `showform` lose these facilities! Any thoughts?

BTW I don't know if you have had a chance to look at my app which I sent you but I should point out that in addition to the problems outlined with it it may contain some of the problems above as well as some dynamic memory not being freed up. (Still trying to trace that one.

Thanks again for a great product, I'm still having loads of fun with it.

Best regards

Trevor

By [Neal Bridges \(Nbridges\)](#) on Monday, December 13, 1999 - 07:56 am:

Hi Trevor. Good to hear from you. Thanks for the change to `string>Field`; I'll check it out.

The `showform/popupform` thing has been raised already; it's on my list.

As to the dynamic memory not being freed -- are you talking about the way POSE mutters when you exit an app? It's technically correct, the memory is not explicitly freed, but the OS frees it for you, so it's no concern at all. I will, however, be adding code to make this silly

warning go away.

Neal

By [Trevor Steele](#) on Monday, December 13, 1999 - 10:50 am:

Hi Neal

Thanks for the reply. The dynamic memory problem is as you described - when I exit my app POSE complains although not fatally. I had assumed that I had not been freeing up all my dynamic memory in my app but after further testing I have decided that it is indeed free. Your last comment has put my mind at rest!

Best regards

Trevor

By [Wade Carlson](#) on Wednesday, December 15, 1999 - 11:13 pm:

Hi Trevor, why is it now that I used your change in my Fields library that now I get a fatal Reset when using the Input Libray.

i.e. type 'include input', then type 'test', and kabllooey, RESET! This goes away when I go back to the original Fields library. P.S. I am using a Palm III.

By [Trevor Steele](#) on Thursday, December 16, 1999 - 05:26 am:

Hi Wade

I really have no idea since I used the change in my own app which is running on a Palm III and it runs fine. I had simply tried the change to get rid of the emulator's complaints about missing insertion points. It's quite possible that there are other gremlins lurking in there!! I'll try the input library with the revised fields library and see what I find. Thanks for pointing out the problem :-).

Best regards

Trevor

By [Trevor Steele](#) on Thursday, December 16, 1999 - 06:23 am:

Hi Wade

As usual in my haste to put things right I had left out a few essential words. With the following changes the code now works with the input library:

```
: string>Field ( c-addr u fieldID -- Err )
>r swap >abs
r> GetObjectPtr
```

```
2dup 2dup \ add extra 2dup
FldGetTextLength 0 2over
FldDelete
0 rot rot FldSetInsertionPoint \ add this line
FldInsert FlushQueue ;
```

Thanks again for pointing out my error. Let me know if you have any further problems.

Best regards

Trevor

By [Wade Carlson](#) on Thursday, December 16, 1999 - 07:34 pm:

Thanks, works great now. Wade

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QForth and docs

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

QForth and docs

By **[Philippe de Rochambeau](#)** on Sunday, December 12, 1999 - 03:41 pm:

Can QForth compile Forth code located in a doc created with, say, QED?

By **[Neal Bridges \(Nbridges\)](#)** on Sunday, December 12, 1999 - 04:07 pm:

It certainly can; there is a library file called *docinc.txt* that does that very thing.

Drop by Erwin's page, he talks about it:

[Erwin's Page](#)

Neal

By **[Dan Brooks](#)** on Monday, December 13, 1999 - 12:03 pm:

I'm interested in this, as well, but Erwin's site seems to be down. Is there a mirror someplace?

By **[Neal Bridges \(Nbridges\)](#)** on Monday, December 13, 1999 - 12:29 pm:

Dan, from here it's up. Give it another try.

Neal

By **[Dan Brooks](#)** on Tuesday, December 14, 1999 - 12:02 am:

I still get nothing. Odd. I'll keep trying, but since it's timing out overseas, there's not much I can do. It gets to the first .DE hop then bombs. Oh well! So much for modern technology.

By **[Erwin Schomburg](#)** on Tuesday, December 14, 1999 - 01:32 am:

I had to swap physical location of my files at one time, so maybe your ISPs routing is corrupt. Try if you can get my ISPs home page (<http://www.t-online.de>), if that succeeds, force a redirector to find me, using <http://home.t-online.de/~Erwin.Schomburg>

May the Forth be with you!

/Erwin

By **[Dan Brooks](#)** on Tuesday, December 14, 1999 - 11:42 am:

Must have been a temporary thing. Works fine this morning, but didn't work at all at 1:00 AM EST. It was bombing on the hop from penns-gw1.usa.net.dtag.de to hh-gw1.hh.net.dtag.de. Given the average ping times this morning, that must be the hop over the pond. Thanks for the help all...

Dan

By **Erwin Schomburg** on **Tuesday, December 14, 1999 - 12:45 pm:**

I hope that at least you have use for the information you find, given all the hassle you had to get there.

/Erwin

By **[Dan Brooks](#)** on **Tuesday, December 14, 1999 - 08:56 pm:**

Very helpful...got you bookmarked now...;-)

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Newbie Request

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Newbie Request](#)

By [Bill Marcy](#) on Sunday, December 12, 1999 - 01:14 pm:

Does anyone have a "skeleton" that they use for programming that they could share? I would like to see the bare bones.

Thanks.

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 12, 1999 - 01:26 pm:

In the manual, there's a rough outline of the structure of an app, and of course the sample applications. "Swatch" might well be a good model to study.

Also have a look at Erwin Schomburg's page:

<http://home.t-online.de/home/Erwin.Schomburg>

Neal

Add a Message

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Problem with DmDatabaseInfo

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Problem with DmDatabaseInfo

By [PhilippeR](#) on Saturday, December 11, 1999 - 04:20 pm:

Hello,

what is the equivalent of 'char szName[32]' in QForth? Is it ': szName z" <32 spaces>" ;'? Or is it 'create szString 32 cells allot'?

I am trying to convert the following C line of code
DmDatabaseInfo (uCardNo, szName, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0);

into QForth code

So far, I have got

```
0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. szName drop >abs uCardNo >abs DmDatabaseInfo
```

where szName is a zstring declared as described above, but my code crashes.

Any help on this matter would be much appreciated.

Many thanks.

Philippe de Rochambeau

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 11, 1999 - 04:28 pm:

I see a number of potential problems.

uCardNo is not a pointer; don't use >ABS on it. Pass in the number of the card (probably 0 unless you're doing something unusual with a Visor).

```
: szName z" DatabaseNameHere" ;
```

should do the trick for your string.

Now, and probably most important, DmDatabaseInfo doesn't take a card number and name -- it takes instead a card number and a local database ID, such as is returned by DmFindDatabase. It *returns* the name of the database in the appropriate 32-character buffer.

Neal

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 11, 1999 - 04:48 pm:

By the way, to allocate a 32-character buffer:

create namebuffer 32 chars allot

Neal

By [Philippe de Rochambeau](#) on Saturday, December 11, 1999 - 05:00 pm:

Neal,

Thank you for responding so quickly to my queries. By the way, I have found a great Palm programming tutorial book called "Palm Programming" by Glen Bachmann. I highly recommend it to beginning Palm programmers.

Philippe de Rochambeau

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 11, 1999 - 05:21 pm:

I like that one also. It's on the "Recommended Books" page.

Neal

By [Philippe de Rochambeau](#) on Saturday, December 11, 1999 - 05:29 pm:

I still get a crash with the following code:

```
: szName z" DatabaseNameHereDatabaseNameHere"; \ 32 chars  
0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. szName drop >abs 5. 0 DmDatabaseInfo
```

I have also tried

```
create szName 32 chars allot
```

```
0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. szName >abs 5. 0 DmDatabaseInfo
```

but the result was the same: a crash.

Philippe de Rochambeau

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 11, 1999 - 05:42 pm:

Ok, you are passing '5.' for some reason, but what you need to pass is the LocalID of the database, as returned by DmFindDatabase.

Neal

By [Philippe de Rochambeau](#) on Saturday, December 11, 1999 - 06:06 pm:

Neal,

I put 5. because, in my particular case, DmGetNextDatabaseByTypeCreator returns 5 as database ID

Here is my complete program:

\ DBBrowse.f PR 1999.12.12
\ Source: Palm Programming, Glen Bachmann p. 165

needs ids
needs zstrings

2variable dbIDP
2variable cardNoP
2variable onlyLatestVers
2variable creator
2variable type
2variable stateInfoP
2variable newSearch
variable err

(ID) data type 2!
0. creator 2!

dbIDP cardNoP true creator 2@ type 2@ stateInfoP true DmGetNextDatabaseByTypeCreator
err ! \ store error number in err

: szName " DatabaseNameHereDatabaseNameHere"; \ 32 characters

0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. szName drop >abs dbIDP 2@ cardNoP 2@ DmDatabaseInfo
szName type

dbIDP 2@ returns "5" and cardNoP 2@ returns "0" so everything should work fine.

Philippe de Rochambeau

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 11, 1999 - 07:02 pm:

Ok, still in your DmGetNextDatabaseByTypeCreator, you are not passing your pointers as 32-bit. Each of the pointers must be passed using >ABS.

Neal

By [Philippe de Rochambeau](#) on Sunday, December 12, 1999 - 02:26 am:

Sorry, I mistyped the code above. On my PalmPilot, I typed the following:

```
dbIDP >abs cardNoP >abs true creator 2@ type 2@ stateInfoP >abs true  
DmGetNextDatabaseByTypeCreator err ! -> I don't get a crash here and do get a db ID and  
card number
```

The crash occurs after the following line is compiled

Neal

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 12, 1999 - 01:47 pm:

Here's the aforementioned working example:

```
\ dmexample

needs ids

2variable localid
variable cardnum
create searchstate 16 chars allot

\ Look up the Quartus Forth app itself:
localid >abs
cardnum >abs
true
(id) p4pr (id) appl
searchstate >abs
true
DmGetNextDatabaseByTypeCreator
throw

create name 32 chars allot

\ Retrieve just the name of the database, with
\ nulls for all the things we don't care about:
0. 0. 0. 0. 0. 0. 0. 0. 0.
name >abs
localid 2@
cardnum @
DmDatabaseInfo
throw

\ Display the name:
name dup >abs StrLen type
```

will display "Quartus".

Neal

By [Philippe de Rochambeau](#) on Sunday, December 12, 1999 - 03:17 pm:

Many thanks for your help and patience, Neal, changing cardNoP from a 2variable to a variable made all the difference! In the Quartus documentation, the DmGetNextDatabaseByTypeCreator function appears with the following parameters:

&dbIDP. &cardNoP. onlyLatestVers? creator. type. &stateInfoP. newSearch?

The ending period in the '&cardNoP.' parameter got me confused. Shouldn't it be '&cardNoP' instead?

Philippe de Rochambeau

By [Neal Bridges \(Nbridges\)](#) on **Sunday, December 12, 1999 - 04:08 pm:**

The '.' at the end of '&cardNoP.' means that the parameter itself on the stack is a two-cell value -- in this case, a 32-bit address pointer. How large the *buffer* at that address needs to be depends on the system call. In this case, if you look at the 3Com SDK docs, you'll see that the cardNo itself is a UInt (16-bit).

Neal

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Crash with DmGetNextDatabaseByTypeCreator

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
Crash with DmGetNextDatabaseByTypeCreator

By [PhilippeR](#) on Saturday, December 11, 1999 - 09:49 am:

The following code causes a crash. Could anyone please tell me why?

needs ids

```
2variable dbIDP
2variable cardNoP
2variable onlyLatestVers
2variable creator
2variable type
2variable stateInfoP
2variable newSearch
```

```
(ID) data
type 2!
0. creator 2!
```

```
dbIDP
cardNoP
true
creator 2@
type 2@
stateInfoP
true DmGetNextDatabaseByTypeCreator
```

Many thanks.

Philippe de Rochambeau

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 11, 1999 - 10:39 am:

You are passing several buffers to DmGetNextDatabaseByTypeCreator without first making them 32-bit pointers.

```
dbIDP >abs
cardNoP >abs
true
creator 2@
type 2@
stateInfoP >abs
true
```

DmGetNextDatabaseByTypeCreator

Neal

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Another newbie question and comment

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Another newbie question and comment

By [Wade Carlson](#) on Saturday, December 11, 1999 - 02:23 am:

Question: Is there any easy way to obtain the 3 digit HotSync user ID off the palm device programmatically through Quartus? (i.e so I can create a pseudo-registered stand-alone app for each user of my program)

And comment:

Wow, the more and more I learn about Quartus forth, the more and more I realize how powerful it is. But, it has taken me a while to get here (I have read through 'Starting Forth' by Leo Brodie, The Forth Programmer's Handbook, and most of the Palm OS SDK). Anyways, I suspect that most typical users (and note that probably none of the users on this web board are 'typical') download the trial version thinking it is a cool program. They try it out for a couple of hours, but then they are overwhelmed and give up, not knowing where to start. I persisted and am grateful that I did, but I think it would be helpful to create some kind of beginner's tutorial just to 'whet the appetite' of the newbie. The Tutorial-v1.02 is what 'whetted my appetite' (and I am anxiously awaiting part 2!), but I think it would be helpful to introduce a very brief tutorial consisting of a BRIEF introduction to the stack, a simple Hello World example, and a simple Input-what-is-your-name example with explanations as to why they work. Also include a list as to what is not important in the Starting Forth book, etc (i.e. file control, certain commands, etc) so as not to confuse the newbie. And lastly, a brief introduction as to how to create resources (and a definition of what a resource is!). Anyways, I have managed to figure all of this out, but I suspect that there are a lot of people that turn away too soon, and you are losing a lot of buyers Neal. I would think something like the above wouldn't take more than a couple of hours to make. Anyways, that's just my 2 cents.....

By [E.](#) on Saturday, December 11, 1999 - 03:52 am:

I hate posting things like this, but there are a few of us working on this sort of thing even as we speak. Between jobs and finals (and annoying C++ homework, in one case), however, work proceeds slowly. Perhaps your post will be an effective goad. :)

The problem (which was probably in our own minds) was that the Tutorial to which you refer wasn't dumbed down enough (like your comments about explaining resources), but once getting past that, it didn't go far enough toward creating (slightly) complex apps.

We don't take on the task of teaching the notional reader basic Forth, mostly because none of us are gurus. Or, you know, even at the point where we could teach anyone anything useful. Bringing someone from complete Forth innocence to being able to create arbitrary apps is WAY beyond our reach. Hell, we've barely managed it ourselves.

I have, of course, heard rumors and noises of other people doing or planning the same sort of thing.

Inasmuch as this post is meaningless, perhaps it will encourage some people to be patient, and

maybe even encourage others to make their own tutorials. <shrug>

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 11, 1999 - 08:22 am:

The HotSync username is not a three-digit ID, but rather a text string. It's easy to retrieve.

For some reason, *syncname.txt* did not make it over to the new site. Here it is:

```
\ 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 ;
```

As to your comment -- you are right, there is a need for more tutorial materials. Several users are at work on such things; which is terrific, and I myself am working on it also. It takes a great deal of time, however, to write such things well.

Your suggestion about Starting Forth is certainly a good one!

Neal

By [Dave Bennett](#) on Saturday, December 11, 1999 - 11:17 am:

When I start Quartus, immediate type "include syncname", I get an error about StrLen being an undefined word.

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 11, 1999 - 11:22 am:

That's really strange, Dave. What version are you running? I'd like to reproduce that here.

Neal

By [Wade Carlson](#) on Saturday, December 11, 1999 - 02:58 pm:

Syncname works great for me, no problems here. Thanks Neal

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 11, 1999 - 03:18 pm:

No problem Wade. Works here too. Dave, maybe you have a typo? Let me know if I can help.

Neal

By [JohnR](#) on Sunday, December 12, 1999 - 04:01 pm:

Back to Wade's original premise and E's response: I really agree with Wade about Stephen Donanue's tutorial. It left me wishing I had part 2 in my hands to continue on. It (probably more than anything else) has kept me downloading source and checking this forum to glean more

understanding. I recognize the possibilities and want to learn and understand all I can, but feel like I'm wading deep water sometimes. Anyone working on tutorials like the one mentioned... keep it up! Please!

John

By [Bill Marcy](#) on Sunday, December 12, 1999 - 06:27 pm:

I have second JohnR's comment. I have a programming backround (which must be what is causing my brain lock), SD's part 1 tutorial is really the only usable thing I have found for QForth, the Manual that comes with it may be good, but there is no way I can use an HTML document, I do most of my reading on the can, and I don't have a laptop <s>.

Anyone who wants a newbie to beta test a tutorial, please feel free to dump what you have on me, no matter how rough or unfinished.

By [Erwin Schomburg](#) on Monday, December 13, 1999 - 12:27 am:

With iSilo you can read HTML (now with images I hear) on the Palm on the can.

/Erwin

By [Erwin Schomburg](#) on Monday, December 13, 1999 - 03:43 am:

To add, I've looked at the brand new version, yes, its with images. Using the iSiloWeb channel grabber I have the complete API documentation from Palm (HTML version) and the complete Quartus manual on the Palm, full working (local) links and all.

/Erwin

By [Bill Marcy](#) on Monday, December 13, 1999 - 07:49 am:

Going to check it out right now Erwin, thanks!

By [Bill Marcy](#) on Monday, December 13, 1999 - 07:52 am:

Ok Erwin, I searched PalmGear, Yahoo, AskJeeves and Avantgo (??) for Isolo and Isoloweb, can't find it, can you point me t a site that has it? thanks.

By [Neal Bridges \(Nbridges\)](#) on Monday, December 13, 1999 - 07:58 am:

Try this link, Bill:

<http://www.palmgear.com/software/showsoftware.cfm?sid=12914419991203110002&prodID=3088>

Neal

By [Bill Marcy](#) on Monday, December 13, 1999 - 07:59 am:

Found it, now to check it out.

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Minor correction to trig.txt

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Minor correction to trig.txt

By [Neal Bridges \(Nbridges\)](#) on Friday, December 10, 1999 - 11:49 am:

I've updated trig.txt in the library file area -- it had a transposition error. The value .1763 has been corrected to the correct value of .1736.

Neal

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Compiling with default form

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Compiling with default form](#)

By [Dave Bennett](#) on Thursday, December 9, 1999 - 10:07 am:

I've created a small christmas card app using just the default form (1001) in Quartus. I'd like to compile this into a PRC to distribute to friends during the holidays. How can I do this using a default form? (Turtle only seems to draw on the default form.)

Dave

By [Erwin Schomburg](#) on Thursday, December 9, 1999 - 10:18 am:

Assuming I have understood what the problem is, further assuming you want to distribute the application that, when started, draws the card (as opposed to have the application pop up the drawn card), you slip in a 1001 showform in your main word just before you try to output anything on the screen.

May the Forth be with you!

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 9, 1999 - 02:02 pm:

Dave, form 1001 (the blank form) is available by default in all compiled apps. However, the turtle routines can draw on any form. What difficulty are you having?

Neal

By [Dave Bennett](#) on Friday, December 10, 1999 - 08:26 am:

Any turtle output draws on "page". The turtle include shows that turtle command starting out by selecting "page". "Page" is defaulting to something other than any form I have active. I created a simple, blank form (not even a title) and tried to run my program. As soon as the turtle drawing section starts, it doesn't appear on my page. However, if I don't draw my page, turtle draws and displays. I've only be able to get turtle to draw on 1001 (the default) in my app.

By [Erwin Schomburg](#) on Friday, December 10, 1999 - 08:42 am:

PAGE is a Quartus word to clear the current page, respective the display area of the currently active form, not a form selector. For usage of self defined forms in the environment, look up the library module and the samples on the usage of USE-RESOURCES, for transferring self defined forms into a compiled application, do the same on COPYRSC.

May the Forth be with you!

/Erwin

By [Dave Bennett](#) on Friday, December 10, 1999 - 08:52 am:

I'll put up an example later today of what's happening.

By [Neal Bridges \(Nbridges\)](#) on Friday, December 10, 1999 - 09:08 am:

I look forward to seeing your code. "Page" doesn't change forms at all, it just clears the current form. Hopefully we can figure out what's up.

Neal

By [Dave Bennett](#) on Sunday, December 12, 1999 - 08:32 am:

OK, I got sidetracked with life.

I figured out one thing, and am now confused about another. First, page was clearing my defined form. This meant the title was disappearing, too. Which led me to believe that my form was being ignored. So I decided to make a second form that appeared after the first form and covered only the part of the screen excluding the title of the first form.

That's where I'm confused now. Here's my code snippet.

```
HolForm showform  
wait5  
DspForm showform  
wait5
```

(wait5 is just a 5 second pause so I can see what's actually happening.)

HolForm is a form with a title only that takes up the whole display area.

DspForm is a form that starts a 14 down from the top and takes up the rest of the display area. I've put a border around it so I could see what's happening with it better.

With the code above the HolForm showform executes and displays my form fine. When DspForm showform executes, my HolForm disappears!

Am I missing a command thing here where I shouldn't be using showform for the second form? Or is there some other way to get DspForm to overlay HolForm?

I've set up the forms in my resource database exactly like another application (Hardball) that has a secondary form that doesn't cover the whole screen does. It displays the secondary form without erasing the primary form, which is what I need.

Thanks.

Dave

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 12, 1999 - 12:32 pm:

Dave, I see what you're trying to do, but you're going about it in a really difficult fashion. If you're just trying to avoid having *turtle* erase your screen, re-write the **turtle** word like this:

needs turtle

```
: turtle 0 angle ! 0 0 goto black ;
```

Neal

By [Dave Bennett](#) on Sunday, December 12, 1999 - 06:07 pm:

I'll work with this a little and see what happens. Thanks.

Dave

By [Dave Bennett](#) on Friday, December 17, 1999 - 10:31 am:

OK. I created a second turtle definition (turtle1) that doesn't erase the screen.

I have two forms- the beginning one and the ending one. It displays as I wish.

Now the issue is compiling it. I built a compilation script, but when I execute it it just runs my app and then exits. I did build the compilation for the hello sample and that worked fine...

By [Neal Bridges \(Nbridges\)](#) on Friday, December 17, 1999 - 10:33 am:

Can you post your MakePRC and CopyRsrc lines?

Neal

By [Dave Bennett](#) on Friday, December 17, 1999 - 01:54 pm:

Neal,

Here is the whole file.

```
needs sf / my program
needs ids
```

```
'go (id) DMBK MakePRC Holiday
HolForm (id) tFRM copyrsrc
DspForm (id) tFrm copyrsrc
```

Thanks.

By [Neal Bridges \(Nbridges\)](#) on Friday, December 17, 1999 - 02:57 pm:

Is that verbatim? If so, there needs to be a space between ' and go, and also tFrm should be tFRM. Can you also show the contents of your sf program itself? I'm guessing you are running your application from within that file, so it never gets a chance to get to the MakePRC.

Neal

By [Dave Bennett](#) on Friday, December 17, 1999 - 06:46 pm:

I do have a space between the ' and go.

I just mistyped the tFrm in my message, it is actually tFRM in the MakePRC.

You're right about running the app. It does this to start itself:

```
HolForm showform  
DoSF
```

The form displays and DoSF is my "SnowFlake" word. The exit in the application is a bye so it never gets out to the MakePRC.

The program is fairly lengthy and I don't have a connection from my Palm V to a PC with internet connectivity right now. (I'm using one of my wife's PCs for email.) If the above helps some, great. If not and you need to see the whole file, I'll try to get it to you.

I'm testing a clipboard enhancement hack right now; perhaps I could copy and paste the whole thing into an email message from my Palm... I'll look into that.

Thanks for all the help.

By [Neal Bridges \(Nbridges\)](#) on Friday, December 17, 1999 - 06:48 pm:

No problem, that's why I'm here. Does the MakePRC work for you when you comment out those two lines?

Neal

By [Dave Bennett](#) on Saturday, December 18, 1999 - 01:34 pm:

When I commented those two lines out I got an exception in the make-sf file "go undefined word". It looks like "go" is supposed to be a reference to something in my sf program. I guess I could wrapper those two lines and call call that "go".

I did that and the program still works. Still hit the "bye" though. I remove the "bye" for an exit and get a reset every time. Since there is no user interaction, just a program "run" I can't figure out how to get out of the thing "gracefully".

Dave

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 18, 1999 - 01:41 pm:

I take it your application just displays the snowflake and stops. To 'stop', and wait for the user to go back to the launcher, or switch to another app, do this:

```
: go
... your code here...
begin key drop again ;
```

Neal

By [Dave Bennett](#) on Saturday, December 18, 1999 - 01:47 pm:

OK. I got it to work. It seems that if an inline "bye" is found, it executes during the compilation. :(

However, I changed my program to have a "go" word like this.

```
: go
HolForm showform
DoSF
bye ;
```

And then it compiled correctly.

I guess I surmised correctly that the ' go part of the make-sf file was looking for a "go" word in my application to make the entry point of the compiled program.

I've beamed it to my wife's Palm III and it works there as well. I'll make an attempt in the next couple of days to get it sent to you.

Thanks again for all the help and a great tool.

Dave

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 18, 1999 - 01:50 pm:

No problem, Dave. Yes, if you have a 'bye' just laying around in your source, outside of a definition, Quartus Forth will obediently do just that and exit.

I look forward to seeing what you've done!

Neal

By [Dave Bennett](#) on Saturday, December 18, 1999 - 01:56 pm:

I put your example of "endless waiting for the user" in and it works even nicer. It displays the final screen message and waits for the user.

I was showing this off at a Christmas party last night and everyone was "ooohing" over the device. No one seems to believe it is a "real" computer. :) I guess that the mindset is "appliance" after all and that is how devices like this will be successfully marketed.

How do you like your device from HandSpring? I'm thinking of getting one as soon as the Linux 2.4 kernel is available (it supports USB). That'll be a nice combination.

Again, thanks.

Dave

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 18, 1999 - 01:59 pm:

Glad to help! You're right about the mindset, most folks think they're much like the old Casio and Sharp organizer-only gadgets.

The Visor is not a bad device at all; it's well-designed and sturdy. I haven't found any incompatibilities yet with any software that I use. Thus far my only complaint is that the backlight is dimmer than on the IIIx or the Vx here in the lab.

Neal

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PalmPilot Software Development - Alternatives to C

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): PalmPilot Software Development - Alternatives to C](#)

By **[Alex Alava](#)** on Tuesday, December 7, 1999 - 02:51 pm:

You are probably aware of the Palm development comparisons at:

<http://goanna.cs.rmit.edu.au/~winikoff/palm/dev.html>

It does not give Quartus a fair evaluation since they used a beta version. Are you going to try to convince him to run a test with a more current version?

By **[Neal Bridges \(Nbridges\)](#)** on Tuesday, December 7, 1999 - 03:55 pm:

I have tried several times to do so without success. It's unfortunate, as it casts into doubt all his other evaluations.

Neal

By **[E. Ross Helton](#)** on Tuesday, December 7, 1999 - 04:02 pm:

Hi Gang;

I read all of his reviews, and except for what he is partial to (Satellite Forms and Visual Basic type programming) he either trashes and down plays.

I wouldn't waste my time even talking to him.

Using the type of programming he prefers definitely slows things down and doesn't give much latitude for speed on the Pilot.

Make it a good day!

Ross

By **[Alex Alava](#)** on Wednesday, December 8, 1999 - 06:52 pm:

People who know would probably disregard his evaluation. The problem is there are a lot of people who will probably give credence to his report. This does not help Quartus exposure to people who are looking for alternatives. There are a lot of newby programmers that would not look at Quartus because of that evaluation. You know like how Consumer Reports can bring Suzuki down on it knees.

By **[Neal Bridges \(Nbridges\)](#)** on Wednesday, December 8, 1999 - 06:54 pm:

True. I hope any interested party will download the free evaluation copy and try it themselves.

Neal

By **[Michael Winikoff](#)** on Saturday, March 4, 2000 - 11:35 pm:

Hi all!

I'm the author of the page in question and I just found out about this discussion thread.

As my page states, I'm interested in feedback and comments. If you feel that I've said things about Quartus which aren't justified, or are misleading, why don't you send me an email and tell me exactly what you think I should change and why? Don't complain about the page where I won't hear your complaints!

As far as being unfair or negative, I'm not quite certain what you're referring to: I don't say very much about Quartus and much of what I say is positive (e.g. when it comes to execution speed it trumps pretty much everything else). The only negative things I can see are (i) low reliability (which is with respect to a beta version, if you think this isn't clear and have suggestions for how I can make it clearer I'd love to hear them), and (ii) I consider Forth to be a low-level language (like C) - this is a personal opinion, if you feel it comes across as an authoritative statement then I agree it needs to be clarified.

I've tried to be unbiased in my assessment in order to create a useful resource. Also, the intention of the page is to provide some brief assessment, but primarily report on facts and provide links.

I find some of the negative attitude in this discussion annoying. I certainly do **not trash anything which isn't visual basic and for the record I don't even like visual basic: I simply recognise that for certain development tasks it can be a lot quicker than some other tools.**

I hope we can keep this discussion positive and constructive, not negative and destructively-critical.

Cheers,

Michael Winikoff

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 12:38 am:

Hi Michael. Thanks for stopping by.

I can't speak for everyone's comments, but I feel your page is somewhat misleading for current developers. For starters, it discusses only a beta version of Quartus Forth, although the product has been in release for well over a year.

Your benchmark is also not spectacular Forth -- I don't have much concern about that, however, as Quartus Forth is still extremely fast even running that sample, as your timings show. :)

(By the way, you can have Quartus Forth itself exactly time that benchmark down to 1/100th of a second with only a couple of lines of code, if you'd like more accurate information for your chart.)

It's true that Forth is quite capable of low-level work, and even integrated assembler if you want it; however, it allows you to abstract yourself from the underlying system as far as you wish -- there's no upper limit. You can add whole new datatypes and primitives directly to the language; these immediately become first-order objects in the language itself. That's a powerful tool for abstraction, and places Forth in excellent company with other sophisticated reflective compiler systems.

As to bias -- reading your page, it does appear that you have some set ideas as to what makes a good development environment and what doesn't; your survey of the available environments is cursory and unapologetic for systems you are either not familiar with, or don't personally prefer. It is easy to determine that you have a great fondness for C++ and Java, that you consider those to be truly high-level development environments, and that you think that alternative languages and environments are more-or-less toy systems that don't make the grade. You also put great stock in the ability to write

apps that run on both WinCE and Palm without code changes, with no discussion of the significant tradeoffs required to reach such a goal.

It's your page, of course -- as "Michael Winikoff's Opinions on Palm Development" it's a finished piece -- but a more up-to-date, objective, and unbiased approach would make it an appreciably more valuable resource for developers.

Neal

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 5, 2000 - 01:09 am:

By the way, for those interested, here is a series of successively-improved benchmarks, starting with Michael Winikoff's original code:

```
\ winikoff 99.12.21 11:50 pm NAB
```

```
variable x
variable y
```

```
\ Winikoff's original:
```

```
: go x ! 0 y !
begin
  x @ 0 >
while
  x @ 1 - x !
  y @ 2 + y !
repeat
;
```

```
\ First improvement:
```

```
: go1
x ! 0 y !
begin
  x @ 0> while
  -1 x +!
  2 y +!
repeat
;
```

```
\ Second improvement:
```

```
: go2
0 y !
begin
  dup while
  1-
  2 y +!
repeat
drop
;
```

```

\ Third improvement
: go3
  0 y !
  dup for
    1-
    2 y +!
  next
drop
;

needs double

: bench ( n xt -- )
  TimGetTicks
  2swap execute
  TimGetTicks 2swap d- d. ." ticks" cr ;

```

```

cr
.( Original: ) 32000 ' go bench
.( First improvement: )
32000 ' go1 bench
.( Second improvement: )
32000 ' go2 bench
.( Third improvement: )
32000 ' go3 bench

```

The results:**Original: 60 ticks****First improvement: 45 ticks****Second improvement: 24 ticks****Third improvement: 19 ticks**

As you can see, rudimentary changes to the code make quite a difference.

'go1' cleans up 'go' by using the Forth primitives +! and 0>. This change alone nets a significant increase in this simple example. 'go1' is 1.333 times faster than the original 'go'.

'go2' makes an important change, and uses the Forth stack to hold the 'x' value. This brings another sizeable increase in speed over the original 'go'. 'go2' is 2.5 times faster than the original 'go'.

After this, further work has diminishing returns. However, for completeness:

'go3' switches to a better algorithm: FOR/NEXT has slightly less overhead than BEGIN/WHILE/REPEAT. With this last change, we get our fastest result: 3.1 times faster than the original 'go'.

Again, this is largely academic -- even with the original 'go' Quartus Forth performs admirably against the alternative environments.

Neal

By [Michael Winikoff](#) on Sunday, March 5, 2000 - 11:40 pm:

Responding to Neal's post ...

- > For starters, it
- > discusses only a beta version of Quartus Forth,
- > although the product has been in release for
- > well over a year.

I explicitly state that I examined a beta version and that the current version (as of late Jan) is 1.2.1e. How do you suggest that I make this clearer? I'd be happy to implement your suggestions.

- > Your benchmark is also not spectacular Forth --
- > I don't have much concern about that, however,
- > as Quartus Forth is still
- > extremely fast even running that sample, as your
- > timings show. :)

Agreed. As I say, the benchmark is very primitive and should be taken with a large grain of salt.

By the way, do I have your permission to quote your next message (giving refinements of the benchmark) on my website? Alternatively, is there a way I can create a link to a specific message on this message board?

- > however, it allows you to
- > abstract yourself from the underlying system as
- > far as you wish -- there's no upper limit. You
- > can add whole new datatypes
- > and primitives directly to the language;

I think this is pretty much the core of the disagreement and it relates to the single comment about me considering Forth to be a low level programming language. This was and still is my opinion. I'm happy to add a statement along the lines of "OTOH I've seen people who consider Forth to be a very high level and productive language. Feel free, dear reader, to do your own investigation and come to your own conclusions".

As to bias, my survey is brief in places.

I don't have the time to become an expert in each system. My intention was that where I could say something, I would, and where I couldn't I wouldn't. The fact that I mention a product briefly shouldn't be read as implying that I consider the product to be poor (and vice versa: just because I say a lot about a product doesn't mean I think it's important or wonderful). Perhaps I should add a disclaimer to this effect, what do you think?

- > It is easy to determine that you have a great
- > fondness for C++ and Java,

Actually I strongly dislike C++ (and explicitly say so!).

- > that you consider those to be truly high-level
- > development environments, and that you
- > think that alternative languages and
- > environments are more-or-less toy systems

What gives you that impression?

Seriously, this is **not** what I feel, and if you've somehow gotten this impression from my page then there is something that needs to be fixed to clarify what my opinions are.

The page began life as documenting my search for a programming environment suitable to my needs. It has since broadened to include all alternatives to the standard C+PalmOS-API.

I've had another read through the page and with the exception of my comment about me considering Forth to be a low level language I can't see anything that I've written that's negative about Quartus or Forth. If there's an implication coming across that I have a low opinion of Forth or Quartus because I don't say much about them then I do need to make it clear that this isn't the case.

Michael

> Neal

By [Neal Bridges \(Nbridges\)](#) on Monday, March 6, 2000 - 12:07 am:

Michael, putting aside my opinions as to the bias of the material -- specifically as relates to Quartus Forth, a casual reader of your page will see that you label Quartus Forth as 'poor' in your chart. You do list the beta version there, if anyone bothers to check that after reading 'poor' -- but why have you not updated the page vis-a-vis the newer version?

An assesment of a year-old beta version is useless, and it calls into question your assessment of all the other products -- at the very least, it makes me immediately wonder how many of the other products you discuss are also being evaluated from out-dated versions.

Please feel free to copy the benchmark code I posted -- linking to the message here is probably not prudent, as it may eventually be archived.

Neal

By [jimh](#) on Monday, March 6, 2000 - 09:30 am:

Michael,

I want to chime in here because had I looked at your review of environments as my starting basis for palm development, I would not have selected Quartus. I feel this would have been a grave mistake.

My programming background is mostly high level although I have been seen sneaking around in ASM and C whenever my higher level environments require raw speed/program compactness. Currently I work in Java and love it, in fact I looked at the various java solutions for the Palm hoping I could stay within an environment that I am good at as well as avoid learning a new language and API. After my own evaluation of the java solutions for the Palm, I had to decide they were not best solutions for me. I am anally retentive on coding things that reduce the use of resources as well as push an environment to

it's fullest speed potential. My work in Java has forced me to loosen up a bit with that so that I can get the web execution abilities (applets) as well as cross platform abilities. Of course there is also the issue of coding in the language that my company sees the best potential for making money and right now the lang de jour is Java. When making the cross over to the Palm though, I felt that my desire to always squeeze the least resource utilization as well as the best performance out of a platform is extremely fitting to the Palm. My opinion of part of the success of the Palm is that they have produced an OS as well as basic applications that don't fall into the Microsoft "bloat" category. While newer Palm's have more memory than the original units, I am excited to see how many programs as well as data I can squeeze onto my Palm, and still have plenty of memory left for additional stuff.

My initial development choice for the Palm was C through the ASDK. While I don't really enjoy coding in C, it seemed like C was the only supported lang by Palm although through Code Warrior. Once I was willing to go outside the "Palm approved", I discovered PILA in the ASDK. While once again ASM programming I don't find "fun", I knew it would fit my minimum resource/maximum performance bill. It was only while learning 68k ASM and the Palm API that I discovered Quartus (actually PilotForth at the time). Had I not had previous exposure to Forth, I probably would have stuck my nose up at this "wierd" language and programming environment. My previous exposure was just enough to know that I could produce results close to the results I could produce in ASM without the syntactic nightmare of ASM. I must admit that development on the Palm itself was also a big plus! (By the way, I would recommend that your table add the caveat that while Quartus doesn't have a desktop version, it works extremely well in POSE)

Initially I fought with Forth, it's syntax and methodology was too foreign to me. I am happy to say though that I stuck with it and have found that programming in Quartus is FUN! Now I have a programming environment that is enjoyable to work with, produces extremely fast code, produces extremely tight code (small runtime footprint, small storage footprint), doesn't require runtime libs that consume extra storage, allows programming on the device for coding on the fly, a language while "different" than mainstream languages of the day but is extremely flexible in what I can do with it, and finally a product that has exceptional support.

Wow, hope you get this far into the message, I think I must have been on the drug "Quartus" when I started writing this message. My real point and objective in this message though is to let you see that there is a Quartus user community that is extremely dedicated to the product. I wish I could say it's because of Neal's stunning personality, but IMHO it's a product well done, with a recognition of a language and environment that is best suited for the small device arena. I wanted to make sure that Neal as the creator of Quatus is not the only voice willing to declare the Quartus message. (Other Quartus supporters, come on, let's show Michael our support!)

The only way that I would recommend to a Palm programmer wannabe a programming environment outside of Quartus is if there is no intent on application distribution, with only a few applications planned, and a willingness to consume larger amounts of memory than is really required.

I hope I have portrayed the sentiments of other QForthers so that you can understand why we would find your evaluation of Quartus an offense.

Jim

By [E. Ross Helton](#) on Monday, March 6, 2000 - 09:50 am:

Hi;

I will add my two cents worth here. I Like Jim found the review to be on the negative side and it would have kept me from using Quartus Forth had I not already been using it. I have C++ experience and Visual Basic as well as maching code. Quartus Forth is the only one which gave me a right up front punch and shove to get programs going.

It is true that I have some trouble resolving RPN on occasion, but that is not the languages' problem.

The ease of use on the Palm makes it a unequalled programming base. The smallest of its footprint in comparison to anything else means there is no peer to it.

Everything else has to be done outside of the Palm and then tested on the Palm. Quartus can be done on and tested on the Palm.

Make it a good day!

Ross

By [Ron Doerfler](#) on Monday, March 6, 2000 - 12:58 pm:

Hi,

I guess I don't find Michael's review to be as negative as others do. My only real objection is that the "Poor" reliability rating is not true at all in released versions of Quartus--in fact, Neal released beta versions to the programming community for a long time through this forum to get the bugs out and suggestions in before releasing the commercial product. That was the idea--it's not fair to judge on an old beta release anymore.

Other than that, in regard to the note:

Being able to develop on a PC and, importantly, test on the PC is very handy.

I'd append another note that had the same wording but with "Palm" replacing "PC".

Quartus is wonderful for me. The syntax is so compact it's great for coding on the Palm (with RsrcEdit), which is essential for someone like me. Definitions can be interactively tested on the Palm as the coding proceeds. It's FUN to program in. And I really appreciate the support provided by Neal and this forum.

Ron

By [Michael Winikoff](#) on Thursday, March 9, 2000 - 01:31 am:

Hi all, me again.

I've made a few changes to the web page which:

- * clarify the reliability rating**
- * add a disclaimer that there's no relationship between how much I write about something and my opinion of it**
- * add a copy of Neal's discussion of the benchmark**
- * add a comment to my throwaway remark on me considering Forth to be low level.**

I'd be interested in whether you think this fixes the issues you had with the page and it's discussion of Quartus.

A few quick comments relating to recent posts in this thread ...

Neal asks why I haven't updated with a newer version. The answer is simple: lack of time. The page does indicate the version I looked at and the current version.

Jimh talks about efficiency and about distribution issues. Distribution **is an issue in development. However, programmer time is also an issue: particularly with special purpose, one off software and amateur (ie. part time unpaid, not unskilled) programmers.**

E. Ross Helton comments that "everything else has to be done outside of the Palm and then tested on the Palm". If you go to the web page under discussion and read some of the other environments other than Quartus you'll see that this is **not the case.**

Finally, I'm unlikely to be checking this forum again for a while. If you have any comments, perhaps email them directly to me at winikoff@cs.rmit.edu.au

Cheers,

Michael

By [Neal Bridges \(Nbridges\)](#) on Thursday, March 9, 2000 - 01:46 am:

Thanks Michael, I'll try to get over and have a look.

Neal

By [Hans Nordstrom](#) on Sunday, March 12, 2000 - 10:26 am:

Neal,

I did set up your benchmark with inheritance from Winikoff.

When running I got these results, on a plain P3x with OS 3.1:

Original: 94

1st impr: 70

2nd impr: 38

3rd impr: 30

These result are different and about 1.5 times slower than your results. The ratio, though, between particular results is about the same that you indicated.

Out of curiosity, what kind of machinery do you use to get your results?

By [Neal Bridges \(Nbridges\)](#) on Sunday, March 12, 2000 - 11:01 am:

My results came from a Visor Deluxe. On the 20MHz Palm IIIc running CruiseControl, the results look like this:

Original: 46 ticks

First improvement: 34 ticks

Second improvement: 19 ticks

Third improvement: 15 ticks

Neal

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CASE example

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

CASE example

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 7, 1999 - 10:52 am:

From a support email --

"I have the following construct.

```
6 0 do
statement 1
statement 2
statement 3
XXX
loop
```

What I need is at XXX is to know how to insert a conditional statement based on the value of the loop counter. If it is the first time through the loop I need to execute A, the second time, B, etc. Can you show me what I need to do this?"

Here's a simple way:

needs case

```
: case-example
 6 0 do
   i .
   i case
     1 of ." One" endof
     2 of ." Two" endof
     ." All others" ( default case )
   endcase
   cr
 loop
;
```

Neal

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Links to Quartus Forth sites!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Links to Quartus Forth sites!

By **[Neal Bridges \(Nbridges\)](#)** on Friday, December 3, 1999 - 01:52 pm:

Third time's a charm. If you've got a site with Quartus Forth-related products, or apps you've written using the compiler, and you'd like a link to it from this site, reply here and I'll collect all the links on a central page.

Thanks!

Neal

By **[Barry Ekstrand](#)** on Friday, December 3, 1999 - 02:18 pm:

Neal,

My LoanPayment app is available at <http://members.aol.com/EkstrandBB>

Barry

By **[E. Ross Helton](#)** on Friday, December 3, 1999 - 03:20 pm:

Hi Neal;

My RTrek RConvertand RFace are at:

<http://www.geocities.com/Heartland/Hills/1705/software.htm>

Make it a good day!

Ross

By **[Erwin Schomburg](#)** on Saturday, December 4, 1999 - 12:18 am:

Hi Neal,

Quintominoes, Eisbär and Alarms?, Tips for a Quartus design environment at

<http://home.t-online.de/home/Erwin.Schomburg>

May the Forth be with you!

/Erwin

By **[Ron Doerfler](#)** on Saturday, December 4, 1999 - 11:50 pm:

Hi Neal,

My ActiveKey app is at <http://www.eddiesoft.com> under the Products link.

Thanks,

Ron

By [Wade Carlson](#) on Saturday, January 8, 2000 - 02:38 am:

My first app, ABG Pro (a medical app) is available at <http://www.bigfoot.com/~wcarlson>

By [LGLisle](#) on Wednesday, January 12, 2000 - 08:53 am:

Neal,

It might be easiest for you, if you could just put this thread on a menu button to the left. Then you wouldn't need to "maintain" it, and it would be easier to find. And yes, I am working on a couple of little things.

--- L. Greg Lisle

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Password:

E-mail:

Ok, Time to educate the Newbie.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Ok, Time to educate the Newbie.

By [Bill Marcy](#) on Friday, December 3, 1999 - 09:58 am:

I have gone through the archives (there are a lot of archives!) and have yet to find a simple getting started tutorial.

What I remember about programming in Basic (yeah, I know...), was that we started with "PRINT", we did some work with that, we added "INPUT", we did some work with that and print...etc. Before you knew it, you were able to program (shazaam!).

Can anyone point to anything in print or on the web, or from their own experience that would do the same for Forth?

Step by step, word by word. Written for real morons, not the intelligent types who buy the "Dummies" books?

Thanks in advance!

By [Neal Bridges \(Nbridges\)](#) on Friday, December 3, 1999 - 10:16 am:

There's a "Hello World" tutorial by Stephen Donahue in the file area... and there are a number of online tutorials for Forth, some of which have been very recently discussed here in the Forum.

BASIC in those days was quite primitive -- no buttons, no menus, no events. However, we can take Forth a step at a time with any questions you may have: let's start with output and input, as you mentioned. I'll assume you already know how to create a new Forth source file in the MemoPad, and how to include that from the console for compilation.

```
\ example1

: output-example
  ." Hello world!"
;

create name 40 allot

: input-example
  ." Enter your name: "
  name dup 40 accept
  ." You entered: "
  type
```

cr

;

Let me know what questions you have!

Neal

By [Neal Bridges \(Nbridges\)](#) on Friday, December 3, 1999 - 11:05 am:

You might throw in a 'CR' after 'accept' for a tidier display.

Neal

By [Barry Ekstrand](#) on Friday, December 3, 1999 - 02:16 pm:

Bill,

As one who began learning Quartus Forth about 6 months ago after a gap of many years since any real programming had been done (it was Fortran and BASIC for me), I can relate to the challenge of picking it up. I think the effort needs to be broken down into 2 distinct areas: first, begin learning the Forth language without any PalmOS-specific, and second, after gaining some level of comfort with Forth, begin learning about the PalmOS systraps. Stephen's tutorial is a good one for starting into the second phase, but before that, get a copy of Starting Forth to begin learning the language. There are some ANS Forth tutorials available on the web that have been referenced in previous postings, get them as well and dig in. I found it much easier to begin understanding code that includes Palm systraps after first understanding the structure of the Forth language itself.

Barry Ekstrand

By [Douglas Atique](#) on Monday, December 6, 1999 - 03:14 pm:

I agree with Barry (I'm a newbie, too).

My opinion is that you should go for "Starting Forth", as this book is really a good reading for us starters (children will like the pictures, too).

I managed to get one from MPE, Ltd. As they still have some in stock, perhaps you can get it. It is a pity that this book has been out of print so long.

Regards,
Douglas

By [Neal Bridges \(Nbridges\)](#) on Monday, December 6, 1999 - 04:16 pm:

Rumour has it that it's being revised to reflect the Standard.

Neal

By [LGLisle](#) on Wednesday, January 12, 2000 - 09:00 am:

The Forth Interest Group has a bunch of books for sale at <http://www.forth.org/Ordering/Books.html>

But they ain't cheap. Starting Forth is \$50

By [Bill Jones](#) on Thursday, February 10, 2000 - 07:14 pm:

i just copied that program into a memo and typed

include example1<return>

i received the ok sign

then i tyoed

go<return>

and received

go? undefined word

whats up with that? thanks

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 10, 2000 - 07:24 pm:

None of the words in the example are called 'go'.

Try

input-example <return>

Neal

By [Bill Jones](#) on Thursday, February 10, 2000 - 07:35 pm:

wow, this is embarrassing.

i realized right after i posted the message that i needed to type

input-example<return>

or

output-example<return>

to start the program from one of those lines. it appears "go" is not a run command but rather the lable of a line in programs like duco and year to get them going.

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 10, 2000 - 07:43 pm:

Quite right. No problem; perfectly understandable mistake.

Neal

By MC on Monday, February 14, 2000 - 08:40 am:

I guess this thread looks as good as any to add another newbie too =)

Im also just starting Forth, altho I have plenty of programming under my belt, parts of the Forth structure are not decipherable with the docs or samples ive seen.

in particular at this point... given the following...

```
: fn (n1 n2 n3 -- n4)
  \ some code here
;
```

im guessing that this word (fn) defines 4 'internal' "variables" n1-4 with n1-3 being numbers pulled from the stack and used in the function and n4 being the result left on the stack afterword. But what is '--' ?? How confused am I??

Another question...

The tutorials (if you can call them that) that ive seen use varieties of the following as examples..

```
\ define a constant
300 constant mycon
```

```
\ print the value of the constant
mycon . cr
\ prints 300
```

```
\ the following references are seen in a tutorial
' mycon . cr
' mycon @ . cr
' mycon @ @ . cr
```

the first is supposed to show the address where the constant value is stored, my palm 3x (0s3.3) shows -15286 or similar

in the 2nd and 3rd, i think the @ is supposed to mean 'replace the address on the stack with the value stored at that address' (ie a pointer) meaning that the address returned by ' is an

indirect pointer pointing to the address of the data (retrieved by the first @) which in turn point to the actual data (retrieved by the 2nd @)

however... on my machine both #2 and #3 result in [FATAL EXCEPTION]

why?

email mc~backwoods.org

By [Jim Hendricks \(Jimh\)](#) on Monday, February 14, 2000 - 09:26 am:

Forth is a stack based language which means in the case of your fn, fn expects n1, n2, and n3 respectively to have been pushed onto the stack. The -- indicates before and after, which means that fn will pop n1, n2, and n3 and push n4 (assumed the result of fn). This notation is called a stack effect diagram, this replaces the functional prototypes typical in other languages. Because Forth works with a stack, there is no need for declaration of local variables unless your process would be simplified by such temporary storage.

With your mycon example:

' - returns an execution token of the name following it. (an execution token is not necessarily an address)

#2 and #3 don't work on Quartus because it appears they assume that ' returns an address instead of an execution token, this then means that these examples are dependent on the implementation of Forth that you are reading about.

A quick disclaimer, I am fairly new to serious development in Forth myself so I could be wrong on these, If I am hopefully someone will correct me, I just wanted to return something to the community and these looked like questions I could answer.

Jim

By [Erwin Schomburg](#) on Monday, February 14, 2000 - 09:38 am:

Jim, you forgot to mention the most important bit, as its obvious to "Forthies" but not to people lurking in from another continuum: the parentheses are comment delimiters in Forth, what you see in between is **not part of the code.**

/Erwin

By [Jim Hendricks \(Jimh\)](#) on Monday, February 14, 2000 - 10:36 am:

Oops! Very good point Erwin, especially since I made the functional prototype analogy which is required in many languages, the stack effect diagrams are not! (Although they aught to be required!)

Jim

By [Neal Bridges \(Nbridges\)](#) on Monday, February 14, 2000 - 10:49 am:

The (inputs -- outputs) diagrams you see in Forth are just comments, you could as easily say (hello there, how are you?)

The convention is to do them like this:

(n1 n2 n3 -- n4)

where n1 n2 n3 denote the required stack items on entry, and n4 indicates that one value is left on the stack at exit.

Neal

By MC on Monday, February 14, 2000 - 03:11 pm:

Ahhh, the light dawns. Ok now which of n1-3 is supposed to be the next available on the stack? ie is n1 n2 n3 the order they will be retrived from the stack, or the order they should be put on the stack?

Also, Neal

since im using Quartus, whats with the @ problem mentioned in my original post?

MC

By [Neal Bridges \(Nbridges\)](#) on Monday, February 14, 2000 - 04:47 pm:

Let's take a real-world example.

/ (n1 n2 -- n3)

/ expects two cells on the stack, with n2 on the top of the stack. It divides the dividend n1 by the divisor n2, returning n3 (the quotient).

21 7 / . -> 3 ok

Breaking that down, using .S to view the stack at each step:

21 7 .s -> <2> 21 7 ok

/ .s -> <1> 3 ok

. .s -> 3 stack empty ok

As to the @ issue you had with the tutorial -- a lot of existing Forth material on the web is dated, and refers to implementation-specific details that were current in Forths of the time. You'll find the odd thing in those older tutorials that doesn't fly with a modern Standard Forth -- anytime you run across one, let me know and I'll give you the Standard equivalent.

In the case of your specific example:

300 constant mycon

There's no Standard way to retrieve where the '300' is stored in memory. Fortunately there's no reason why you'd want to do that, either; it's a constant, you can retrieve its value simply enough:

```
mycon . -> 300 ok
```

This is one of the complaints I have with a lot of the existing tutorial material -- too much time spent looking at trivial underlying implementation details.

Neal

By **martian** on Tuesday, February 15, 2000 - 05:38 am:

So if tick (') doesn't return the address of that constant, what would be the equivalent way of doing that in QForth?

By [Erwin Schomburg](#) on Tuesday, February 15, 2000 - 05:56 am:

You can't. If you need an address, use a variable.

/Erwin

By [martian](#) on Tuesday, February 15, 2000 - 06:06 am:

Seems a fair enough limitation. The only example I have seen was in the Max-Forth tutorial and that was using it to change the value of the constant, which seems fairly pointless.

By **Erwin Schomburg** on Tuesday, February 15, 2000 - 07:46 am:

You use a constant if you can't be bothered with memory locations but need a symbolic representation of a literal value. If you need to change the literal to be represented you use VALUE (as in 10 VALUE Test) to clearly distinguish from a CONSTANT, to modify a VALUE then you use TO (as in 5 TO Test).

People setting up examples as you mentioned above should be sentenced to exclusive use of software written by true followers of these tutorials for life. 8-)

/Erwin

By **MC** on Tuesday, February 15, 2000 - 08:56 pm:

Ummmm, My QForth doesnt know what to make of VALUE, i get Undefined Word

Anyway, I have a new question, but daggonit I forget what it is. Oh yea, I keep seeing references to RsrcEdit but havent been able to locate it anywhere. Is there a place to download it?

MC

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 15, 2000 - 09:07 pm:

The Quartus search engine is your friend. :)

RsrcEdit can be found on the "Online Resources" page of the Quartus Forth manual; **VALUE** is defined in the *core-ext* library file.

Neal

By [MC](#) on Wednesday, February 16, 2000 - 12:56 pm:

Thanks Neal, I never even saw the search option. => I do like your homepage layout tho.

Next question anyone....(not strictly a FORTH question but..)

What are the PalmOS API calls to access the serial port. In particular I need to be able to toggle the RTS line on and off w/o disturbing other serial IO.

Other info I have gives the direct hardware calls but my POSE in debug mode complains when these are used (C library).

MC

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 16, 2000 - 01:44 pm:

There's a *serial.txt* library module that covers some of this-- not all of it, though. Check also the SDK docs, all the calls are documented there.

Neal

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A Scary problem

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): A Scary problem](#)

By [Wayne Carson](#) on Thursday, December 2, 1999 - 05:29 pm:

I was compiling a program on my Palm Pilot Pro. I was taking a long time so I reset the Pilot with a paperclip. After that, I would get a fatal error trying to compile the program.

I thought it might be a problem with running out of memory. Trying the Memory app, I get

```
MemoryMgr.c, Line:3926,  
Invalid handle
```

With Rsrcedit, I get a Fatal exception.

Any ideas?

Barring any suggestions, I'm going to try to hotsyncing, a hard reset, and reloading the apps.

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 2, 1999 - 05:47 pm:

Sounds like a corruption in the storage heap due to completely running out of storage memory during the compilation process. Were you very close to the limit at the time? Generally it just gives a simple error and is harmless, but perhaps some combination of events caused this to happen -- I'm guessing you now have a PRC in memory that has completely incorrect information about itself in its header, and so both Memory and RsrcEdit are failing when they try to get details on it. The thing to do is to delete that app; however, this generally means using RsrcEdit or Memory, and so you're back at square one.

Using Pilot-Xfer (see PalmGear for this handy utility) you should be able to copy to your desktop any important databases, and possibly even delete the offending one. Worth a try.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 2, 1999 - 05:50 pm:

By the way, in addition to Pilot-Xfer, consider Backup Buddy -- it's a really handy app for keeping a full backup of your Palm at all times. Pilot-Xfer is the tool I generally use, but both are good, allowing you to take a complete backup of every byte of data on the device, with just as simple a restore process.

As developers, it's good to have a full backup; when writing new apps you stand a greater chance of doing something untoward than does the average non-developer.

Neal

By [Barry Ekstrand](#) on Thursday, December 2, 1999 - 06:50 pm:

Having locked up my upgraded PP Pro several times into a "death lockup" (with the dreaded "flashing screen" on reset and even after the major "erase all data" reset), I thought I'd chime in with my 2 centavos worth. I use Flashbuilder and keep my flash memory full with routinely-used apps, including Quartus and RsrcEdit. I've had this "death lockup" occur several times, with the situation being after the "erase reset" I get the boot-up digitizer routine okay, but any tap following that results in being stuck with the flashing screen again. I suspect when this happened my flash memory has been corrupted somehow; at any rate, I've found only one way out of this vicious circle: after the "erase reset" and subsequent digitizer routine, immediately placing the machine in the cradle and HotSync, where BackupBuddy restores all to its last saved state. As far as I'm concerned, BackupBuddy is the single most important piece of software on my machine (no insult toward Quartus intended, Neal -without BB, I'd be staring at a flashing Palm III screen still).

My last comments are directed at the need to do routine backups when developing a new app. Having BackupBuddy restore all is great, but if it turns out the last version of code saved is before the last 3 major additions to the code that were fine before the blowup, a whole bunch of time is wasted rebuilding. I've found RsrcEdit to be a great utility for duplicating the code database (I'm coding in Doc format), so now I create a backup with version level in the name after each milestone. This also gives you a place to go back to if things really get fouled up in the continuation of the programming effort (not that that ever happens to me.... ;))

Bottom line: BackupBuddy and RsrcEdit work great to keep me out of trouble with backups.

Barry Ekstrand

By [Wayne Carson](#) on Thursday, December 2, 1999 - 10:19 pm:

Well, I tried backup buddy. When I hotsynced, it synchronized the databases but died with a fatal error during the backup. Finally got to see the flashing screen. So I took out the batteries for a couple minutes and hotsync again.

Memos seem intact. Reinstalled Quartus and Regedit. Quartus starts. Second time, Fatal error, invalid handle.

Deleted Quartus and reinstalled it again.

Fatal error at the end of the hotsync. First time, Quartus starts. Second time, Fatal error, invalid handle.

Possibly my Memopad db is corrupted and it's causing Quartus to crap out? Aside from startup.quartus, is any other memo read on initialization?

This is getting depressing. Like MS Windows :)

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 2, 1999 - 10:29 pm:

Taking out the batteries might not have cleared your RAM.

I suggest you erase the contents of memory with a hard reset -- reset via the back panel while holding the power button. It'll ask you if you want to erase all data; say yes. Then HotSync with "Desktop overwrites Handheld", and see what is restored to your device. Delete anything that looks suspicious -- I think something corrupt is coming back in on the restore.

Then install Quartus Forth and see what happens.

Neal

By [Barry Ekstrand](#) on Friday, December 3, 1999 - 08:30 am:

I may not have been clear in my previous post, but when stuck in the "death lockup" I did have to do the hard reset, then digitize, and then immediately HotSync to come back to life. Wipe the slate completely clean, then restore to the last good backup that was saved - this has been the solution for me.

Barry

By [E. Ross Helton](#) on Friday, December 3, 1999 - 08:53 am:

Hi Gang;

If I might put in my 2 cents worth. I've used all of the backup programs mentioned above. And even have created a program which uses Pilot-Xfer so everything can be backed up to floppies if need be.

I however use BackupAll by Mattias Jordan. It is freeware and it occupies much less space than Backup Buddy and in my mind makes Hotsync much faster. You can choose various degrees of backup.

As far as the flashing screen and the occasionally reset, if you aren't seeing that some, you aren't into serious Quartus Forth programming.

Make it a good day!

Ross

By [Neal Bridges \(Nbridges\)](#) on Friday, December 3, 1999 - 10:55 am:

Yes, it's curious that the Palm OS allows such flexibility when specifying a menu layout, but then only responds properly when a menu is layed out according to certain parameters. This is why I always begin a new project by copying a menu from another app. :)

Neal

By [Barry Ekstrand](#) on Friday, December 3, 1999 - 02:06 pm:

Ross,

Your comments give me hope - I will now view the death lockup as a badge of pride that I

have earned rather than a novice's mistake! ;)

Barry

By [E. Ross Helton](#) on **Friday, December 3, 1999 - 03:25 pm:**

Hi Barry;

My Grandma would've said, "If you haven't made any mistakes -- You probably haven't tried to do ANYTHING at all!"

As far as what Neal is saying about copying an existing menu, I would whole heartedly agree with him. It saves time and accidents.

Make it a good day!

Ross

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Strange Menubar Effect

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Strange Menubar Effect](#)

By [Dietmar Uhlig](#) on Thursday, December 2, 1999 - 12:29 pm:

Hi all!

Technical Data:

Palm IIIx, PalmOS 3.3 (German)

Qurtus Forth 1.2.1E

RsrcEdit 1.003

I tried:

hello-b from the tutorial

swatch 2.1

The effect:

When opening the menu the default sub-menu also gets opened. This is still desired.

If I tap anywhere in the menubar the sub-menu will be closed and cannot be opened again.

This means I cannot open a submenu other then the default sub-menu. There are only 2 ways to get the default sub-menu opened again:

- Restart the application via the launcher
- write a graffiti command that starts an action from a sub-menu entry.

I will try this on a Palm III in the next few days to see whether this effect depends on the PalmOS version.

Can anyone of you reproduce this effect or give me a hint what I did wrong?

Thanks,

Dietmar

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 2, 1999 - 12:31 pm:

Hmm, can't reproduce it here, though I've seen something like it when the menu wasn't created properly in RsrcEdit. To avoid such things, when starting a new app I always copy the menu from another app, and add/remove items as required.

Did you modify the Swatch resources, or are you compiling them as they ship?

Neal

By [Brad Wanner](#) on Thursday, December 2, 1999 - 01:18 pm:

I had the same problem. Drove me mad.

In RsrcEdit open the menu bar and make sure you have a value set for height. I do not think it

matters what the height is just so long as there is something set.

Hope this helps

-Brad

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 2, 1999 - 01:37 pm:

Bingo! Comes back to me now in a flash. Yes, a too-small height value will cause just that problem. Thanks, Brad.

Neal

By [Dietmar Uhlig](#) on Friday, December 3, 1999 - 04:29 am:

**Sorry Neal for claiming swatch to have the same menubar problem as my version of hello-b has (had). Don't know what and how I tested. :-(Must have been late at night. ;-)
Thanks, Brad, for the hint. This is the solution. But the value of the height does matter:
"Wrong" values lead to ugly menus.**

**Regards,
Dietmar**

By [E. Ross Helton](#) on Friday, December 3, 1999 - 08:56 am:

Hi Dietmar;

The same problem will occur if you had what is supposed to be side by side menu items that don't have the proper width and height.

Have a program about drive me mad, until I found out that I was doing this

**Make it a good day!
Ross**

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Using Swatch source code to learn

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Using Swatch source code to learn

By **Alex Alava** on **Wednesday, December 1, 1999 - 01:08 pm:**

I have been looking at the Swatch source code and I have the following questions:

- 1) In order to display a form, you use ShowForm, FrmAlert to show Talt and FrmHelp to show tSTR. Where are these defined? What other words can I use to display interface resources?
- 2) If I compile the code and just type "init-display", the system crashes. What am I doing wrong? Why can't I also just type in "SwatchForm ShowForm"? It crashes when I do that.
- 3) What is the best way to store a string during run time? I would like to be able to recall the string and possibly change it, the time the program boots up. As an example would be a simple password system.

Kind of stuck.

Any tips will help

Thanks

By [Neal Bridges \(Nbridges\)](#) on **Wednesday, December 1, 1999 - 02:42 pm:**

Hi Alex.

- 1) Those calls are defined in the Palm OS ROM itself. Download the Palm OS SDK documentation in PDF format from <http://palm.3com.com/devzone>, where you'll find all the other built-in calls.
- 2) When you switch to the Swatch form from the console, the console immediately tries to use the input field again, and it isn't defined on that form, so you get an error. To test it from the console, I suggest

```
: test
  SwatchForm ShowForm
  key drop
  MainForm
;
```

- 3) For a short string, I'd consider storing it as a preference. For larger data, consider using a database.

Neal

By **Alex Alava** on **Saturday, December 4, 1999 - 02:34 pm:**

Thanks Neal, I got that down. Now more questions.

If I use preference to save some thing like a password string. Will the password be backed up with the program. Is the program beamable with the password? (Security concerns).

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 4, 1999 - 07:44 pm:

As far as I can tell, preferences do not travel with a PRC when it's beamed.

Neal

By [Alex Alava](#) on Tuesday, December 14, 1999 - 01:26 pm:

To the ones with Forth!

I am now delving into the popup lists. Like the swatch popup list and trigger (tz and tzlist), I created my list and trigger (ctlist and cttrigger). Using RsrcEdit, I made the ctlist unusable so that it is not always displayed. The problem that I have is that if it is not usable, there is no ctlSelectEvent generated when I make a selection. I made this simple test which I cannot breakout of.

```
: go
myform showform
begin
100. (ekey)
120 0 at .s \ show the event
ctlSelectEvent =
until mainform ;
```

When I run go, I see a nilEvent (0), making a popup list selection only gives me a penupEvent (2). I never get a ctlSelectEvent so I never break out of the loop.

When I change the popup list with RsrcEdit to usable, the list is always visible which I don't want to see. In this state, when I make a selection, I get a ctlSelectEvent and am able to break out of the loop.

What do I need to do to the popup list in RsrcEdit so that it is not visible and that it will generate a ctlSelectEvent?

Thanks

Alex

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 14, 1999 - 01:58 pm:

Alex, this is a OS3.3 problem that I have corrected for in the newest Quartus Forth beta. I'll send you a copy tonight.

Neal

By [Alex Alava](#) on Friday, December 17, 1999 - 03:20 pm:

Thanks Neal for the beta version. `ctlSelectEvent` works now. Since I am using a popup list, when do I get a `lstSelectEvent` or a `popSelectEvent`? Shouldn't I be getting a `popSelectEvent` if I select an item from the popup list? I am not sure I understand the SDK documentation.

I think `ctlSelectEvent` is returned if I lifted the pen from from the control object. It does not tell me that I have selected from the list.

The `popSelectEvent` is supposed to tell me that a selection has been made on the list. The `lstSelectEvent` also tells me that the selection has been made. How come I don't see these events?

If they are there, is the duration very short?

Thanks

Alex Alava

By [Neal Bridges \(Nbridges\)](#) on Friday, December 17, 1999 - 03:33 pm:

An event doesn't have a duration, per se, it either lands on the list or it doesn't. Here's what I do for lists: I monitor for `ctlSelectEvent`, and then ask the list what its current selection is. Simple.

Neal

By [Alex Alava](#) on Sunday, December 19, 1999 - 05:10 pm:

Thanks for the tip.

In the swatch source code, in "set-timezone", you are using `CategorySetTriggerLabel` to set the trigger text. In my test application, I have long strings in my list. If I try to set using `CategorySetTriggerLabel` with a long string, the label becomes garbled. I now realize that Categories are a max of 15 characters long. I tried `CtlSetLabel` and it seems to work better. It does not have this restriction.

Do you have any defined words for clearing lines of text? I am trying to display different lines of text depending on a list selection. I was thinking of the brute force method of just emitting enough spaces to fill the line prior to outputting my text. Any suggestions?

Thanks

Alex Alava

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 19, 1999 - 05:27 pm:

Yes, I'd use `erase-rectangle` from the *graphics.txt* library file to clear areas on-screen.

Neal

By [Alex Alava](#) on Monday, December 20, 1999 - 11:45 am:

I played with **erase-rectangle** before but now I value its multi-functionality.

Is there any instability with 1.26 in terms of making a prc file. What should I watch out for with this beta version?

I am making very fast progress with the User Interface with all your tips.

Thanks

Alex Alava

By [Neal Bridges \(Nbridges\)](#) on Monday, December 20, 1999 - 01:30 pm:

The beta version has only added international language support, and proper handling for ctlSelectEvents as relate to popup lists -- nothing to worry about. Its beta status relates more to the language module than anything else.

Neal

By [Alex Alava](#) on Tuesday, December 28, 1999 - 10:56 am:

Hi Neal,
Where can I find preferences.h? I would like to know how to find out about system settings like private, time etc..... The swatch code refers to some of the system time settings. I would like to learn the structure of these preferences.

Thanks

Alex Alava

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 28, 1999 - 11:08 am:

All the SDK header files are available at <http://palm.3com.com/devzone>.

Neal

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Rom Problem - HELP!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Rom Problem - HELP!](#)

By [Bill Marcy](#) on Tuesday, November 30, 1999 - 10:39 pm:

I have a Visor, problem I have run into, POSE does not allow the use of the USB cradle to download the ROM. I have the Serial cradle on order, but everything with handspring is 6 weeks away.

Can anyone send me a ROM that is workable with POSE? I swear I will not use it to do anything but learn Qforth with, on my honor! (what else could one do with these ROMs anyway?)

Any help would be much appreciated.

By [E. Ross Helton](#) on Wednesday, December 1, 1999 - 08:55 am:

Hi Bill;

If you goto the 3Com site and sign up as a developer you should be able to get a ROM which will work

Make it a good day!
Ross

By [Bill Marcy](#) on Wednesday, December 1, 1999 - 01:25 pm:

Yup, they told me that I would revieve the password for it in 2 to 3 weeks. Nothing about any of this is easy it seems.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 1, 1999 - 02:44 pm:

There is a certain amount of paperwork involved. I understand the tech people at 3Com are hamstrung by their legal department. We live in a litigious society; it seems they would rather be cautious than sorry. Sadly, these efforts only serve to keep those of us without any malice from having easy access to the required files; I gravely doubt it slows down the miscreants for a second.

Neal

By [E. Ross Helton](#) on Wednesday, December 1, 1999 - 06:32 pm:

Hi Neal;

My Grandma would've said, "Locks only keep honest people honest!"

Probably is an apt saying for what you expressed.

Make it a good day!

Ross

By [Neal Bridges \(Nbridges\)](#) on **Thursday, December 2, 1999 - 03:45 pm:**

Indeed. :)

Neal

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Developing off of the pilot?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Developing off of the pilot?](#)

By **[Bill Marcy](#)** on Sunday, November 28, 1999 - 07:26 pm:

I am coming at Forth, having tried CASL, Satellite Forms and GCC, none of them clicked.

With Quartus forth can we develop off of the pilot itself? IS there any environment for doing the coding off the pda and then importing it?

Newbie question no doubt, thanks in advance.

P.S. Finding books on forth is like finding a hens tooth, any links to someplace or someone who has them in stock?

By **[Neal Bridges \(Nbridges\)](#)** on Sunday, November 28, 1999 - 07:42 pm:

You certainly can develop on the desktop, using the Palm OS Emulator (POSE), available at <http://palm.3com.com/devzone>. Erwin Schomburg has put together a page describing how to set up that environment; I don't have the link immediately at hand, but perhaps he will chime in.

As relates to books -- a post to comp.lang.forth will scare some of the vendors out of the woodwork. There are several good books available and in stock.

Neal

By **[E.](#)** on Sunday, November 28, 1999 - 10:44 pm:

This is perhaps less that optimally helpful, but what I personally like to do, at least during the beginning stages of a Quartus Forth project, is to do the programming in the desktop Palm program (for whichever platform you're on). Actually, I use gforth+vi+cut-and-paste at first, then when I get to filling in the skeleton, use the desktop app. That plus frequent syncs is good, I think, and gives you a fairly quick edit-and-test cycle. Once it all works, I then build the app onboard (no POSE; no computer that can run it at decent speeds yet) and sync again to get at the PRC. It's not as fast as doing it all off-board (or at least for me, since I can use vi faster than Memopad), nor as convenient as doing it all on-board, but it is, for me, a happy medium.

By **[Erwin Schomburg](#)** on Monday, November 29, 1999 - 01:00 am:

Bingelybingelybong (chiming in): See <http://home.t-online.de/home/Erwin.Schomburg>

May the Forth be with you!

/Erwin

By **Douglas Atique** on **Monday, November 29, 1999 - 06:10 am:**

I have just bought 3 classical Forth books from MicroProcessor Engineering Ltd., in Great Britain. You might want to take a look at <http://www.mpeltd.demon.co.uk/>
They also have tools, but I wanted Starting Forth and Amazon didn't have it. They do.
Douglas

By **Bill Marcy** on **Monday, November 29, 1999 - 01:05 pm:**

Thanks for the tip Douglas, "Starting Forth" is \$50.00 (usd) - Ouch!

I am going to search around and see if I can't scrounge it a bit cheaper.

By **E. Ross Helton** on **Monday, November 29, 1999 - 01:11 pm:**

Hi E;

Did I understand you to say in your discussion that you use Gforth on the PC desktop and then translate that to Quartus Forth? If so where do you get that and how compatible is the end code with Quartus?

Make it a good day!

Ross

By **E.** on **Monday, November 29, 1999 - 02:47 pm:**

No, sorry. I use gforth (and vi) on unix, and then cut-and-paste it into the desktop program. I'm sure that if you could find gforth for Windows/DOS (I know one can exist, I don't know if one DOES), that'd work too.

Or, uh, your platform of choice. :)

As for compatibility, I usually have to rewrite input and output, obviously, but other than that I can build the "skeleton" words and transfer them straight across.

It helps that I have a standard "framework" that I use for my Quartus apps. Get the basic words working under gforth, and all I have left that's Quartus-specific is the I/O.

By **Neal Bridges (Nbridges)** on **Monday, November 29, 1999 - 02:50 pm:**

Gforth exists for Windows and DOS; available for download via www.forth.org.

It's a Standard Forth -- obviously you couldn't develop the Palm OS specific bits with it, but you can certainly use it to prototype the basic structure of your Forth application, should you choose to do so. My preference is to prototype directly on the Palm itself.

Neal

By **E.** on **Monday, November 29, 1999 - 02:53 pm:**

Oops.

As for where to get it:

<[URL:ftp://ftp.complang.tuwien.ac.at/pub/forth/gforth/](ftp://ftp.complang.tuwien.ac.at/pub/forth/gforth/)>, last time I looked.

By [E. Ross Helton](#) on Tuesday, November 30, 1999 - 08:43 am:

Hi;

Thanks to both of you. It mostly a question to get clarification. Thanks for the answers. I will check out the site.

Make it a good day!

Ross

By [Marc](#) on Thursday, December 9, 1999 - 09:18 pm:

I personnal use WinForth (link somewhere on www.forth.org), nice, fat, with a debugger. The last point being very usefull for beginner like me.

Marc.

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 9, 1999 - 09:24 pm:

I find a debugger a useless addition to Forth, though I can understand why some newcomers find it familiar, as it's difficult to write anything in, say, C, without a debugger on hand.

I submit that learning to write code in such a way that a debugger is not required at any time will take you much closer to a true understanding of Forth, and the best way to write good Forth code. Small, well-named definitions that can be interactively tested at the console, and the console itself (from which you can interrogate any part of the system), make the need for a debugger fade away.

Neal

By [Serg Koren](#) on Thursday, December 9, 1999 - 09:38 pm:

**Hi Neal,
A debugger is useful in learning why something doesn't work when you thought it did/should. Also, unit testing (testing a small well-defined FORTH word) is a different animal than is integration testing (putting all the pieces together to get the correct logic). Just because you have a garage-full of parts doesn't mean you can put them together to make a VW.**

Sometimes you need to see the forest in order to know where the trees are ;-)

S

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 9, 1999 - 10:00 pm:

Basic Forth question (again)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Basic Forth question \(again\)](#)

By [E.](#) on Tuesday, November 23, 1999 - 10:15 pm:

Based on the most recent discussion (the one involving callbacks), I am forced to ask what FOR..NEXT is for, exactly?

I mean, yes, loops, obviously. Maybe I'm not phrasing it right.

I find them (in Quartus, anyway) in asm68k.part2, where FOR is basically a SWAP, and NEXT is some sort of branch. This tells me that, um, it's a loop. Not the insight I was looking for.

I figure I'll run some tests. Easy enough to do. I try a bunch of various loop structures, all from 1 to 10.

```
DO..LOOP goes 1->9
FOR..NEXT goes 10->0 (???)
DO.. -1 +LOOP goes 10->1
```

The DO ones behave as I'd expect. FOR..NEXT, not so much.

I tried looking them up, but I can't find them in ANS (well, the final-version-but-one, that's freely available), nor in any tutorial nor reference that I've run across. I also didn't happen to see it in Brodie (second ed., I believe - a friend looked it up).

A reverse loop that goes beyond the lower bound? I must admit, I'm confused. I'm also confused as to why I can't seem to find it documented anywhere.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 23, 1999 - 10:23 pm:

FOR..NEXT are common-usage words not in the Standard. The FOR..NEXT in asm68k are similar but not exactly the same, as with all the asm68k words; they are Forth words adapted for working with registers.

The FOR..NEXT in the kernel, though, works like this:

```
: Countdown
  10 for i . next
;
```

will display

9 8 7 6 5 4 3 2 1 0

Neal

By [E.](#) on Tuesday, November 23, 1999 - 11:37 pm:

Ah. I tried giving it one element on the stack, but that didn't work (due to a typo of mine, hooray for gforth's persistent up-arrow so that I can see that NOW). Therefore I figured you needed two.

Your example, as usual, sets me straight.

Thanks.

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Callback for SysQSort

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Callback for SysQSort](#)

By [Mark Beckman](#) on Tuesday, November 23, 1999 - 08:13 pm:

Having reset my Palm more times than I can count trying to get this, I appeal for help. I am trying to use SysQSort (as an example of a callback) and have obviously missed something.

Here is the code

```
\ sort test
needs random
needs memory
: xx .s key drop ;

10 constant N
N cells allocate throw
constant sorted

: compare
  ( Ptr. Ptr. Long sortinfo. apinfo. -- )
callback
beep ( should beep if this ever runs )
9 pick 9 pick 9 pick 9 pick ( * ick! * )
@a >r @a r> - 0 d0!
end-callback ;

: init ( -- )
  N for
    rand sorted i cells + !
  next ;

: display ( -- )
  cr N for
    sorted i cells + @ . 32 emit
  next cr ;

: go
  init display
  0. ( other. )
  ['] compare xt>abs ( &comparF. )
  2 ( width )
  N ( numOfElements )
  sorted >abs ( &baseP. )
  ." ( oth. &compF. wid Elem &baseP. -- ) " cr
xx
SysQSort ( other. &comparF. width numOfElements &baseP. -- )
xx
display ;
```

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 23, 1999 - 08:43 pm:

And do you know exactly at what point it is failing? When run under POSE, what is the exact error?

Neal

By [Mark Beckman](#) on Tuesday, November 23, 1999 - 10:50 pm:

Actually I hadn't tried. (been coding at lunch and on breaks a long way from my PC (which is what is so Great about Quartus)). So, let's see...

Poser does not even get as far as my Palm.

The error is "Quartus" 1.25R has just written directly to an unallocated chunk of memory.

This problem indicates an error in the application. Users should upgrade this product immediatly to safeguard their data.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 23, 1999 - 10:56 pm:

Heheh. An automated vote of confidence straight from 3Com. Let me run it here and see what I can see.

Neal

By [Mark Beckman](#) on Wednesday, November 24, 1999 - 06:44 pm:

oops, what was I thinking !!!

I changed

```
N cells allocate throw
constant sorted
```

to

```
create sorted N Cells allot
```

and that gets rid of the "write to unallocated chunk" error and now I get a message "Quartus" 1.2.5R has just read directly from low memory.

...

After the call to xx (which is just a .s key drop), so at least I'm pretty sure that the callback is the problem now. Still no beep so the call back is likely not being called.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 24, 1999 - 09:08 pm:

Well, the POSE emulator doesn't beep, remember that. Maybe another indicator would be better.

Neal

By [Mark Beckman](#) on Wednesday, November 24, 1999 - 09:20 pm:

No beep, didn't know that. Still, I also get no beep on my Palm III either.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 24, 1999 - 09:46 pm:

Ok. Stay tuned.

Neal

By [Neal Bridges \(Nbridges\)](#) on Monday, November 29, 1999 - 01:26 pm:

It appears SysQSort needs more stack space than is presently available to it. I'll see what I can do to fix it. In the interval, you might want to pick another system call for callback experimentation.

Neal

By [Mark Beckman](#) on Monday, November 29, 1999 - 02:31 pm:

**Thanks Neal,
For now I'm using a Heap Sort for my sort and will get back to Callbacks later.**

By [Neal Bridges \(Nbridges\)](#) on Monday, November 29, 1999 - 02:47 pm:

Ok. I have source for a quicksort in Forth here if you need it.

Neal

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A Beginner's Guide to Forth

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): A Beginner's Guide to Forth](#)

By **[Neal Bridges \(Nbridges\)](#)** on Monday, November 22, 1999 - 09:27 pm:

Julian Noble has an interesting tutorial here:

<http://Landau1.phys.virginia.edu/classes/551/primer.txt>

I haven't worked through it in detail, but at a glance it appears to be Standard and hence should apply well to Quartus Forth. I'd be interested to hear your opinions of it.

Neal

By **[Barry Ekstrand](#)** on Monday, November 22, 1999 - 11:17 pm:

Neal,

When I first stumbled across Quartus, this tutorial was one of the first references I found to begin learning about Forth (prior to my finding "Starting Forth" as well). I found it to be very helpful to me as a complete novice and it enabled me to begin making Quartus work. I guess it is fair to say this tutorial whetted the appetite enough to decide to register Quartus and really try to learn something.

For what it is worth, at this point my main Forth references are Starting Forth (still) and the Forth Programmer's Handbook (Conklin & Rather) that comes with the download of the Simple Forth trial version, along with the Quartus docs and the ANS Forth doc.

Barry Ekstrand

By **[Douglas Atique](#)** on Tuesday, November 23, 1999 - 05:15 am:

I have very recently found this tutorial (though at **<http://erwin.phys.virginia.edu/classes/551/primer.txt>**) and found it very clarifying, as it explains not only the basics of 1 1 + . but also what "the hell" is CREATE ... DOES> and other insightful features.

I cannot yet share Barry's opinion, as I have just ordered "Starting Forth" (from MPE, Ltd.) and the "Forth Programmer's Handbook" (from Amazon) and neither has arrived yet. I hope to, though.

By **[Neal Bridges \(Nbridges\)](#)** on Tuesday, November 23, 1999 - 12:55 pm:

Barry, I'm glad you did 'stumble across' Quartus Forth. I'd like to make it more visible in the market, but advertising directly to developers is tricky.

Julian's tutorial looks pretty good; I'll have to go through it and see if I can add any Quartus Forth-specific footnotes.

Neal

By [Dave Raftery](#) on Tuesday, November 23, 1999 - 10:24 pm:

I downloaded Julian Noble's Forth tutorial a few weeks back and found it very informative; I am still ruminating on section 9.3 Dimensioned data and the whole idea of floating point. (I think I should stick with 16 bit integers until I figure out how to walk in Forth!)

I am a Forth newbie; I received my Handspring Visor deluxe 4 weeks ago and started looking for a language that I could program it in and discovered Quartus Forth. I have done a bit of C and assembler programming at work and taught myself Dolphin Smalltalk for hobby use at home. So its not like I'm coming to Forth completely "green" (but from some of what I have read it is easier to learn Forth if you haven't programmed before.) I have found the newbie discussions here at Quartus and on comp.lang.forth to be very informative.

I was able to obtain copies of Starting Forth and Thinking Forth at my library so I am slowly working my way thru those books too. I have also found useful tutorials at

<http://www.albany.net/~hello/> and at <http://www.hempeldesigngroup.com/lego/pbFORTH/>

(for those of you who have the Lego Mindstorms programmable brick - most of the tutorial is general enough for Quartus Forth)

I'm glad I found you guys. Once I figure out how to formulate some questions you will be hearing more from me. I am also planning to create a page on Forth on my website, to focus on beginning Forth topics. I will post the site in a few weeks.

Dave

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 23, 1999 - 10:29 pm:

It's not so much that knowing other programming languages slows you down with Forth -- it's just that developers new to Forth are prone to trying to write in Forth just as though it were C, or Pascal, or what-have-you, with poor results. There's a period of transition during which you learn the disciplines of keeping the number of items on the stack very low, and writing short, well-named, easily tested definitions; then it 'clicks' and your productivity goes way up.

That web site sounds promising. I look forward to hearing from you!

Neal

By [Wayne Carson](#) on Wednesday, December 1, 1999 - 05:05 pm:

I just found another Forth tutorial that's pretty good.

<http://www.geocities.com/SiliconValley/Bay/2334/4thtutor.htm>

Wayne

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 1, 1999 - 05:44 pm:

Some of it looks useful, but beware -- some of it is specific to '4th', an implementation that has a few peculiarities of its own.

Neal

By **Alex Alava** on **Saturday, December 4, 1999 - 04:16 pm:**

I also have the Starting Forth Book but as you read it, you realize that it dealt with 1024 byte blocks. It worked with FigForth. I started using public domain forth compilers - FPC(DOS) and then converted to Win32For(Windows). They have some simple tutorials that can be followed. The hazards are that there are a few implementations that are not ANS Forth.

FPC and Win32For have their own editors and are not restricted by the 1k byte blocks. It works with files. Of course, the file handling words are specific to these compilers. The nice thing is that you can still use the Starting Forth book on these Forths.

These Forths are available at:

<ftp://ftp.taygeta.com/pub/Forth/Compilers/native/dos/FPC/fpc36.zip>

<ftp://ftp.taygeta.com/pub/Forth/Compilers/native/windows/Win32For/W32for41.exe>

By **[Neal Bridges \(Nbridges\)](#)** on **Saturday, December 4, 1999 - 07:47 pm:**

Yes. Bear in mind also: Starting Forth does talk a bit about the underlying structure of a Forth system, describing one method -- indirect threading -- as though it were the only way to write a Forth. It isn't, of course, and in fact Quartus Forth actually compiles native code just the way a C compiler does. There's still a lot of good material in the book, though. "Thinking Forth" is another very good book, though it's not a tutorial per se.

Neal

By **[Garth Kidd](#)** on **Saturday, March 4, 2000 - 03:15 am:**

Yaay, FigForth! I used to write in that on my Commodore 64.

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"Username" box and leave the "Password" box empty. Your e-mail address is optional.

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Formatting numbers

Quartus Handheld Software: Discussion Forum: Quartus Forth (PalmOS version): **Formatting numbers**

By nbridges on Monday, November 22, 1999 - 08:55 pm:

From e-mail:

>If I have a month like march how do I make it 03 rather than just 3.

```
: ## ( u -- ) 0 <# # # #> type ;
```

>Also, how do I combine the stack (yyyy mm dd -- *str) where the data now at string is YYYYMMDD

```
: ymd>string ( y m d -- c-addr length )  
  0 <# # # 2drop 0 # # 2drop 0 # # # # #>  
;
```

Neal

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

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Strange Edit Menu behavior on PopUp Form

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Strange Edit Menu behavior on PopUp Form](#)

By [Barry Ekstrand](#) on Monday, November 22, 1999 - 12:05 pm:

I have added a PopUp Form (using the PopupForm word) to my app, the purpose of which is to allow user identifier input to attach to a record. Because it is multi-field input, I want to give the user access to standard Edit Menu functions (cut/copy/paste). Since this is already in my program on the main forms, I thought all I would need to do is reference the same MBAR menu resource to make it happen.

Well, it almost works. The cut and copy function seem to work fine, but the paste function does its thing twice - in other words, pasting the characters "ABCD" yields "ABCDABCD". I have re-compiled and have tried creating a separate MBAR resource for this form, but no change. Is there something special about PopUp Forms with regard to menus that I'm missing?

By [Neal Bridges \(Nbridges\)](#) on Monday, November 22, 1999 - 02:23 pm:

Hiya Barry. No, there's nothing special about pop-up forms as relates to menus. Try the example code in *input.txt*, you'll see it handles Paste without any problem.

If it continues to puzzle you, I'd be happy to look at the sources. I still have one of your sources under the microscope here, by the way :)

Neal

By [Barry Ekstrand](#) on Monday, November 22, 1999 - 06:41 pm:

Well...at least I'm consistent. I went back to *input.txt* and ran the test code in it, popped up the form, no edit functions are active - no surprise without a menu attached that had the edit functions defined, just being cautious.

I attached a menu with the edit functions and added the code that I've used in the past - I think I borrowed it from Carl's PhoneDecode - to make the edit functions active...voila! cut and copy work fine, paste duplicates just as it does in my app. Here is the revised *input.txt* with my additions:

```
needs graphics
needs core-ext
needs Fonts
needs Events
needs Forms
needs Fields
needs zstrings
needs resources
needs ids
```

```
(ID) p4ap (ID) util use-resources
```

```
4000 constant inputFormID
```

```
4001 constant inputFieldID
```

```
2variable inputfldptr
```

```
: inputfldlen ( -- len )
```

```
inputfldptr 2@
```

```
FldGetTextLength ;
```

```
: center-title ( c-addr u -- )
```

```
boldFont font >r
```

```
swap 2dup >abs FntCharsWidth
```

```
2/ negate 80 + 0 swap 2swap >abs
```

```
WinDrawInvertedChars
```

```
r> font drop ;
```

```
: handleSysEditMenu
```

```
event >abs FrmGetActiveForm
```

```
FrmHandleEvent drop ;
```

```
: get-input
```

```
\ ( a1 u1 max a2 u2 a3 u3
```

```
\ -- false | u4 true )
```

```
\ a1 u1: input string
```

```
\ max: max chars allowed
```

```
\ a2 u2: prompt string
```

```
\ a3 u3: title string
```

```
\ u4: new length
```

```
cursor-position 2>r
```

```
FrmGetActiveFormID >r
```

```
inputFormID PopupForm
```

```
center-title
```

```
21 7 at type \ prompt string
```

```
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
```

```

dup 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
dup menuevent = if
event >abs itemid
handleSysEditMenu
then
drop
    again ;

```

```

\ Example:
needs tools-ext
1 [if]
: string s" default" ; 40 allot
: test
    string 2dup
    40 s" Prompt:" s" Title" get-input
    cr if
        ." You entered: " nip type
    else ." Cancelled." 2drop then cr ;
[then]

```

I am running the code from the interpreter, doing a 'needs input' and then calling 'test'.

The menu that I've attached has the following functions on it:

- Undo - ID 10000**
- Cut - ID 10001**
- Copy - ID 10002**
- Paste - ID 10003**
- Keyboard - ID 10006**
- Graffiti Help - ID 10007**

All of the standard shortcuts are enabled.

I will send you a copy of the modified source and resource files, to see if you can figure out what I'm doing wrong here. As a reminder, this approach works fine on all of my other forms in my app; they are displayed by ShowForm instead of PopupForm for whatever that is worth.

Any help is appreciated!

Barry Ekstrand

By [Barry Ekstrand](#) on Monday, November 22, 1999 - 06:49 pm:

Ah...it should be obvious that I cut off the filename in the previous posting. The first line should be:

```
\ input
```

Sorry about that!

Barry

By [Neal Bridges \(Nbridges\)](#) on Monday, November 22, 1999 - 08:07 pm:

Ok, I'll have a look. But if you just start Quartus Forth, and run the unmodified *input.txt*, you will see that the pop-up form there has an Edit menu defined, and it works fine without any supporting code at all. Have a look at that as a model.

Neal

By [Barry Ekstrand](#) on Tuesday, November 23, 1999 - 09:04 am:

I reloaded the unmodified *input.txt* and *Qrsrc.prc* to start over and I see that the Edit menu indeed is active as you state, although I am confused by this. *Qrsrc* has one active tFRM (ID 4000); upon examination it references an MBAR (ID 1000) although there is no MBAR resource is listed upon opening *Qrsrc*. I also note *input.txt* does not define a constant for the menuid. Thinking perhaps this is a default menu, I went back into my app and used ID 1000 for the MBAR associated with my popup form, but I got a fatal exception when I tried to edit in the popup.

I am obviously missing something basic here. Up to now I thought any menu had to be defined as an MBAR resource with all items on it listed with IDs - not true for an edit menu alone?? Any idea why did my attempt to follow the *input.txt* / *Qrsrc* lead failed?

Aside from these questions, I'm still curious as to why the approach I've been using is giving a "double paste" on the popup form.

Hope I'm not wearing out my welcome, I'll appreciate any assistance!

Barry Ekstrand

By [Erwin Schomburg](#) on Tuesday, November 23, 1999 - 09:57 am:

Barry, there is no defaults but the Quartus default screens, which still need to be addressed by their assigned IDs. Try to use the "Build Ressource Info" option from *RsrcEdit* to see what is

where and possibly hiding in the (sub) menus and forms.

May the Forth be with you!

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 23, 1999 - 11:00 am:

You are being deceived by RsrcEdit, Barry. That MBAR ID is 10000, not 1000, but only four digits display in RsrcEdit.

Neal

By [Barry Ekstrand](#) on Tuesday, November 23, 1999 - 11:17 am:

Erwin,

Thanks for the RsrcEdit tip, I hadn't explored the Build Resource List function before. This shows Quartus has a MBAR with ID 1000 built into it, so I assume Qrsrc, in this case being called from the Quartus interpreter, has access to this menu resource (?). Is it a reasonable assumption that this wouldn't work anymore if the code were compiled?

If this is right, it would seem to explain why input.txt has edit capabilities when Qrsrc doesn't have a menu built-in, and why my compiled app crashed when I tried this approach (a menu was called that didn't exist). Comments?

Barry Ekstrand

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 23, 1999 - 11:22 am:

Part of what I see in your modified code is the handleSysEditMenu -- this should not be required at all. I suspect the Paste is being handled once automatically, and again by this code, hence your problem.

If you assign the menu ID 10000 to your form, you'll automagically get all the edit functions available, courtesy of the Palm OS. Alternatively, you can do as you've done and include the appropriately numbered menu items (10000=Undo, 10001=Cut, etc.).

Neal

By [Barry Ekstrand](#) on Tuesday, November 23, 1999 - 02:33 pm:

It seems you are correct, so long as I use PopupForm to display the input form. I find that if I use ShowForm instead, I get a single Paste rather than a double.

This leaves me in a bit of a quandry - I need to use handleSysEditMenu to make the edit functions active on the menu being used by all of the main forms in the app, and I need the popup feature to take input before saving to a memo without acutally losing the data in the fields on the active form. It appears that the edit functions as I have them in my menus

(individual IDs) behave differently whether used on a PopupForm vs a ShowForm.

Any thoughts on how I can get around this dilemma?

Barry

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 23, 1999 - 02:57 pm:

That seems strange to me. The edit functions (10000, 10001, etc.) should work identically whether they are on a form displayed by ShowForm, or by PopupForm.

I'd be interested in seeing a test-case that exhibits the characteristics you mention. The Quartus Forth console itself has those Edit functions available, and uses only the code described -- no special calls. It should work for you too.

Neal

By [Barry Ekstrand](#) on Tuesday, November 23, 1999 - 04:45 pm:

I'll try to get duplicate in a much smaller set of code so you don't have to sift through too much and then I'll forward. For now, I've figured out a simple work-around. I changed my call to handleSysEditMenu to test first to see if the popup form is active, and if so, handleSysEditMenu is skipped. Edit functions now work on all forms properly.

Barry

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

SelectDay (&title. &year. &day. &month. selectDayBy[>byte] -- Boolean)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

SelectDay (&title. &year. &day. &month. selectDayBy[>byte] -- Boolean)

By [Yeshiah](#) on Monday, November 22, 1999 - 10:50 am:

SelectDay (&title. &year. &day. &month. selectDayBy[>byte] -- Boolean)

Ok the following works for SelectDayv10 but what about the SelectDayBy>byte? I need to use SelectDay but dont know what to do with the byte conversion part

```
variable year
variable month
variable day
variable hour
variable minutes
```

```
: init
time&date year ! month ! day ! hour ! minutes ! drop
;
```

```
: title z" Select a Day" ;
```

```
: PickDay
title drop >abs
year >abs
day >abs
month >abs
SelectDayV10 drop
year @ month @ day @
;
```

By [Neal Bridges \(Nbridges\)](#) on Monday, November 22, 1999 - 11:25 am:

SelectDayBy is documented in 'Day.h' in the Palm SDK.

```
0 constant SelectDayByDay
1 constant SelectDayByWeek
2 constant SelectDayByMonth
```

Neal

By [Neal Bridges \(Nbridges\)](#) on Monday, November 22, 1999 - 02:30 pm:

Further to that -- the >BYTE means you need to use >BYTE on that parameter before passing

it to the SelectDay routine.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

An overview of Quartus Forth (repost from UseNet)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): An overview of Quartus Forth \(repost from UseNet\)](#)

By [Neal Bridges \(Nbridges\)](#) on Monday, November 22, 1999 - 09:45 am:

Re-posted from comp.sys.palmtops.pilot:

Forth is a simple and straightforward language. The syntax is minimal -- tokens are separated by one or more spaces. Parameters are implicitly passed on a built-in stack, similar to the way HP calculators work, so there aren't any parentheses and operator-precedence is never an issue. For instance, to add 3 and 8 and display the result:

```
3 8 + .
```

Here '3' pushes the value 3 on the stack, '8' pushes an 8, '+' adds them together and leaves the result on the stack, and '.' displays it to the screen.

Visually, Forth is a compact language, well-suited to the size of the Palm screen. Good Forth programming means writing short, well-named definitions, each of which can be tested interactively from the built-in console/interpreter. Each concise, well-tested definition is used to build others; they just snap together like Lego. The result: solid code built on a solid foundation, with a high degree of code re-use.

Here's a complete "Hello World" program written in Quartus Forth:

```
: go
  MainForm page
  ." Hello World!"
  begin key drop again ;

needs ids
' go (id) Helo MakePRC Hello!
```

That's it! Compiles in under a second to a tiny stand-alone PRC that gets copied to your desktop the next time you HotSync; it'll run anywhere, no run-time required. (Note that I've used the creator ID 'Helo' here just as an example; you'd want to register a creator ID from the 3Com site for any application you want to release.)

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Problems with POSE

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Problems with POSE

By [Trevor Steele](#) on Sunday, November 21, 1999 - 03:01 pm:

Hi Neal

I recently downloaded version 3.0a2 of POSE and have been testing my software using, PalmOS33_iii_debug.ROM and Quartus version 1.2.5R. I have encountered a few problems which I thought worth mentioning.

1. The makePrc word generates an Invalid registration code error and will not work. I have double checked the \ quartus.startup memo and all the info in it is correct.
2. When running Quartus I get the following error when exiting via a button push or bye. UIAppShell (unknown version) reports "SystemMgr.c, line 4192, possible memory leak. Use the 'hd0' command to find chunks owned by your app. these chunks have an owner ID of 2".

In addition some of my own applications which run perfectly well under OS ver 3.0 refuse to run at all under OS ver 3.3. I must confess to being a little baffled. Has anyone any suggestions?

Trevor

By [Neal Bridges \(Nbridges\)](#) on Sunday, November 21, 1999 - 05:24 pm:

1. You need to set your username in POSE to the same one you're using on your Palm; then the registration code will work fine.
2. I know about that one. They decided to institute a new test for dynamic RAM not freed by the app. It happens that the dynamic RAM is freed by the system, so it isn't a reason to worry, but I'll be resolving that in the new release.
3. Your apps -- what problems are you having? Please send me any problem apps and I'll have a look. I've encountered no problems to date (with the single exception of the registration-code handling routines in Quartus Forth, which is now resolved).

Neal

By [Neal Bridges \(Nbridges\)](#) on Sunday, November 21, 1999 - 05:34 pm:

Trevor -- also noticed you mention a 'quartus.startup' memo. If that's not a typo, it should be 'startup.quartus'.

Neal

By [Trevor Steele](#) on Monday, November 22, 1999 - 05:53 am:

Hi Neal

The 'quartus.startup' was indeed a typo, I should have learned by now not to try and do things from memory. The problem with .prc generation is indeed due to me forgetting to set the username to the correct one. Thanks.

I will e-mail a problem app to you with details of how to crash it! it seems to work under OS 3.0 but not OS 3.3?

I also encountered a problem which may be useful to others to know about. When using dynamic memory under OS 3.3 I found originally that one app would not run at all. this was due to the ALLOCATE word receiving memory which was out of the 16 bit range. The problem was eliminated by using the 32 bit (allocate) word from the Mem file. Presumably the same could occur when addresses are passed from the system to the app and >rel is used to get a 16 bit address to use?

I look forward to any comments you have on the problem with my app. Hopefully it's just something silly I've done!

Best regards

Trevor

By [Marc](#) on Monday, November 29, 1999 - 06:12 pm:

My application is also reported to break with 3.3

As I have no access to a 3.3 I cannot say much more than that. Anyone knows about change in database handling and/or event changes ?

Problem is either located in the management of the popup lists or in the handling of my preferences database.

Any hint gladly appreciated.

By [Neal Bridges \(Nbridges\)](#) on Monday, November 29, 1999 - 08:06 pm:

Hmm, I can test for you here under OS3.3, if you would like to forward it along.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Reading the battery voltage -- how to!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Reading the battery voltage -- how to!

By [Neal Bridges \(Nbridges\)](#) on Friday, November 19, 1999 - 03:43 pm:

To read the voltage:

```
0. 0. 0. 0. 0. 0. 0. SysBatteryInfo
```

To display it as *n.nn*:

```
: n.nn ( u -- )
  0 <# # # [char] . hold #s #> type
;
```

Neal

By Raul Perez on Friday, November 19, 1999 - 05:16 pm:

The code:

```
0. 0. 0. 0. 0. 0. 0. SysBatteryInfo
```

pushes and then pops the value of zero a total of seven times and then calls SysBatteryInfo, right?

Why do you do that?

Newbie Raul.

By [Neal Bridges \(Nbridges\)](#) on Friday, November 19, 1999 - 06:07 pm:

No, those dots are right after the 0, not separated by spaces. 0. is a double-cell zero.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Palm OS shared libraries

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Palm OS shared libraries](#)

By **Douglas Atique** on **Thursday, November 18, 1999 - 11:16 am:**

Hello, everybody.

I have read about Palm OS shared libraries in Dr. Dobb's latest issue and liked the idea very much. I do not (yet) have a registered version of Quartus Forth, so I don't know exactly how it generates executables. Anyway I would like to ask: can it generate shared libraries too?

Regards,

Douglas

P.S.: I've already posted this question on [comp.lang.forth](#), too.

By **Neal Bridges (Nbridges)** on **Thursday, November 18, 1999 - 11:41 am:**

It is not set up to directly create shared libraries, although you could do it in a similar manner to the way HackMaster hacks can be created -- see the sample source for TickHack.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

A new Quartus Sighting.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): A new Quartus Sighting.](#)

By [E. Ross Helton](#) on Wednesday, November 17, 1999 - 07:10 pm:

Hi;

Just wanted to let you know that some Quartus Forth programs are being sighted out there.

I just received news that "Rtrek" and one of my other programs written in Quartus Forth will soon be on two CDs of programs for the Pilot and other similiar systems.

One of those CDs with be published in the US and the other one will be published in Taiwan for the market there.

Make it a good day!

Ross

By [Neal Bridges \(Nbridges\)](#) on Thursday, November 18, 1999 - 10:37 am:

That's great! :)

Neal

By [E. Ross Helton](#) on Thursday, November 18, 1999 - 06:29 pm:

Hi;

Just wanted to add that I Erwin also has several of his programs being published on CDs by four different companies. That is fantastic and we should give him big KUDOS for that.

His programs are also written in Quartus Forth.

He as well as Neal has been very helpful to several in this discussion group. It would probably be appreciated if we would drop him and email of congradulations.

Make it a good day!

Ross

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

TRY/RECOVER/ENDTRY -- a different mechanism for exception handling

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

TRY/RECOVER/ENDTRY -- a different mechanism for exception handling

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 16, 1999 - 02:06 pm:

Re-posted from comp.lang.forth

```
In article <80jta3$6ij$2@news.tuwien.ac.at>,
  anton@mips.complang.tuwien.ac.at (Anton Ertl) wrote:
> We are currently considering implementing an inline version of CATCH
> that would look like this:
>
> TRY
>   code that can THROW
> RECOVER
>   ( n ) code that deals with a non-zero THROW
> ENDTRY
>
> E.g., CATCH could be implemented like this:
>
> : CATCH ( ... xt -- ... x )
>   TRY
>     execute 0
>   RECOVER
>     nip \ get rid of the xt's stack entry
>   ENDTRY ;
```

Forth is great! I've just implemented this in Quartus Forth for the Palm OS:

```
\ try 99.11.16 12:31 pm NAB

: try ( C: -- try-sys )
  postpone ahead
  cshere
; immediate

: recover ( C: try-sys -- recover-sys ) ( Run-time: -- n | )
  postpone exit
  >r
  postpone then
  r> postpone literal postpone catch
```

```
postpone ?dup postpone if
; immediate

: endtry ( C: recover-sys -- )
postpone then
; immediate
```

Providing for the the single non-Standard word 'cshere', which returns the next compilation address, this should port quite easily to many systems.

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 16, 1999 - 03:31 pm:

Addendum to the above for Quartus Forth users -- the construct above is for experimentation only at present, as it won't compile properly into a stand-alone PRC. I'll enhance it to do that properly.

Neal

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 16, 1999 - 04:02 pm:

Addendum to the addendum: already done. Version 1.2.6 is in internal testing, with an added 'literalxt' word that allows for relocatable xt constants. I'll send out an update after regression testing.

Neal

By **Raul Perez** on Friday, November 19, 1999 - 05:20 pm:

**I'm sure my newbie-ness is coming out,
but does Forth already include the THROW word?
I see where you implemented TRY, ENDTRY, and RECOVER, but what about THROW ?**

By [Neal Bridges \(Nbridges\)](#) on Friday, November 19, 1999 - 06:08 pm:

Yes, THROW is already there as part of the EXCEPTION wordset.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

How do I know the menu is up?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
How do I know the menu is up?

By [Edin Hodzic](#) on Monday, November 15, 1999 - 04:19 am:

Hello folks,

I am novice to both PalmOS and QF. Consider the following program:

```
\ mn
needs ids
needs graphics

: go begin ekey 5 5 at ." hi" . again ;

' go (id) t3dj makeprc mn
```

It is a simple event loop which says hi and shows the event type code. If you launch the program, click the find icon, click cancel, and then click the menu icon, you will notice the menu forms are overwritten by the program?!

So, how do I know when the menu window is posted and then cleared again? Is it WinExitEvent/WinEnterEvent? It seems this should work for the little piece of code I included.

I have a bigger application in which my event loop does not get the WinExitEvent until the menu form is cleared?! What could I be doing wrong?

Thanks.

Edin Hodzic

By [nbridges](#) on Monday, November 15, 1999 - 08:39 am:

EMIT? (note the ? at the end) will return a flag telling you whether it's a good idea to do output right at that moment. Give that a try.

Neal

By [Ron Doerfler](#) on Monday, November 15, 1999 - 01:13 pm:

I've used this word to find if my form's menu is up:

```
needs double
: menuinvisible? ( -- flag)
MenuGetActiveMenu
2dup d0= if \ None activated yet
```

```
2drop true  
else 16 m+ @a (hex) 8000 and 0=  
then ;
```

While I don't have the docs here, this works because there is a bit in the menu structure that indicates whether it is visible or not.

However, there is the overriding question of why the Find menu still exists on your form after the Find function is canceled. I don't know the answer to that, but if you add

```
MainForm
```

right after the word "go" in your code, it "displays the default Quartus form, and establishes a menu event handler for it." I thought you wouldn't have to do this, as it is said to be the default, but if you do you will find like I did that the Find menu doesn't stick around after Find is done. In fact, you don't even have to test with the "menuinvisible?" word in this case, as the output will not overwrite the menu when Find is up anyway. This will work with the blank Quartus form as well, where you would replace "MainForm" with

```
BlankFormID ShowForm
```

Hope this helps,

Ron

By [Neal Bridges \(Nbridges\)](#) on Monday, November 15, 1999 - 01:51 pm:

Ron, to clarify -- the Find menu sticks around after being cancelled on the Quartus Forth default form? Doesn't happen for me. Can you give me some details about your hardware/software?

Neal

By [Neal Bridges \(Nbridges\)](#) on Monday, November 15, 1999 - 02:15 pm:

Hang on -- gave this some thought. If you're running from the console, there's a default active form; in stand-alone apps, there's no default form, but rather, as you say, you must deliberately set one with MainForm or alternate. That would account for what you're seeing. :)

Neal

By [Edin Hodzic](#) on Tuesday, November 16, 1999 - 03:09 am:

Thanks Ron and Neal,

the main form seems to solve the problem for the little mn program's menu.

For my real problem of writing over the posted menu, emit? and few other comparisons on the event type seem to solve the problem.

As a suggestion, winExitEvent and winEnterEvent I see returned from ekey, after the menu is closed, do not seem to be useful, and could be ommited?!

Thanks for your prompt replies.

Edin Hodzic

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 16, 1999 - 03:59 am:

They could indeed, but they're fairly innocuous. I'll make a note however to review them; I see no reason why they can't be passed out of EKEY at the appropriate time, to give yet another way to determine if the current window is active.

Thanks!

Neal

By [Edin Hodzic](#) on Wednesday, November 17, 1999 - 10:45 am:

Could EMIT? consider "Command Status" in addition to the menu status?

Edin Hodzic

By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 17, 1999 - 11:38 am:

You can easily redefine it to do that. I'm not sure what bit to check to see if the status is visible, but have a look -- if you can't find it let me know.

Neal

By [Edin Hodzic](#) on Friday, November 19, 1999 - 08:29 pm:

Hi,

Ron's function "menuinvisible?" does what I was actually looking for. In addition, if 8000 is changed into c000, it will check whether the command status is clear as well. Perhaps this should be the implementation of EMIT? ?!

Edin Hodzic

By [Neal Bridges \(Nbridges\)](#) on Friday, November 19, 1999 - 09:16 pm:

Not a bad idea. In the meantime, creating a new EMIT? including the test from 'menuinvisible?' will give you exactly what you want.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

FplAtoF

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): FplAtoF](#)

By [Ingo Mathyl](#) on Saturday, November 13, 1999 - 11:17 am:

Hi neal!

I'm trying to convert a zstring to a fp-number by FplAtoF :

FplInit drop

```
: test
z" 3.1234567e1" drop <abs FplAtoF ;
test
```

This will end in a Fatal Error.
I think the Parameters are right:

```
floatType FplAToF (char* s );
```

Thanks for Your help
Ingo!

By [Neal Bridges \(Nbridges\)](#) on Saturday, November 13, 1999 - 12:28 pm:

The parameters as given in the header files is not actually correct -- it gets expanded internally in the C compiler. You must also pass it the address of a buffer to store the resulting float. The real parameters (expressed as a Quartus Forth stack diagram) will be

```
FplAToF ( &zstring. &float. -- )
```

so

```
: PalmFloat create 8 chars allot ;
```

```
PalmFloat f
```

```
: num z" 3.14159265" ;
```

```
num drop >abs f >abs FplAToF
```

'f' now contains the float in PalmOS format.

Neal

'+loop' does not comply with ANS Forth?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

'+loop' does not comply with ANS Forth?

By [Folkmar](#) on Friday, November 12, 1999 - 06:45 pm:

I lately had a serious problem with a program of mine which I could finally boil down to the following example:

```
: test ( u -- ) 0 do i u. 10000 +loop ;
30000 test 0 10000 20000 ok
60000 test 0 ok
```

However, the correct output of "60000 test" would be
0 10000 20000 30000 40000 50000

This behavior of Quartus Forth does not comply with ANS Forth in my opinion. The runtime of '+loop' is: "... Add n to the loop index. If the loop index did not cross the boundary between the loop limit minus one and the loop limit, continue execution at the beginning of the loop." Instead of testing for this "crossing" Quartus Forth seems to do some test of signed (!) integers which stops the loop prematurely in the second case. By the way, Win32Forth does what I think is correct---of course, there I translated the example to 32bit cells.

Would it be possible to post a fix of '+loop'? Or is there a simple work-around? Otherwise I will get stuck...

Thanks for any help.

Folkmar

By [Folkmar](#) on Friday, November 12, 1999 - 06:53 pm:

Even more impressive: try and compare

```
32768 test
32767 test
```

Folkmar

By [Neal Bridges \(Nbridges\)](#) on Friday, November 12, 1999 - 07:10 pm:

Yes -- LOOP and +LOOP deal in signed integers. On a 32-bit Forth, of course that range is much greater than it is on a 16-bit Forth. What exactly are you trying to achieve?

Neal

By [Neal Bridges \(Nbridges\)](#) on Friday, November 12, 1999 - 09:13 pm:

Further to that -- both LOOP and +LOOP in Quartus Forth are ANS Standard compliant. If you check, you'll see that both the limit and the index are signed cells.

If you have a need for a larger loop, you can nest two loops or set up a simple BEGIN..WHILE..REPEAT loop. Let me know what you're trying to do and I'll post an example for you.

Neal

By [Erwin Schomburg](#) on Saturday, November 13, 1999 - 12:47 am:

OT, but I work on specifications in standardisation projects sometimes. I know you need to be somewhat analy adjusted during this work to get precise results, and its said that we Germans are specifically (intended pun) good at this. But nothing sets you up worse than a German with the attitude, but in error.

8-)

May the Forth be with you!

/Erwin

By [Folkmar](#) on Saturday, November 13, 1999 - 07:55 am:

I am looking for help and not for being insulted as a German with the attitude but in error. I apologize if my English is misleading about my attitude... In this case I would mail Neal directly instead of posting my question in the discussion forum...

Have you tried '32767 test', Neal? It gives you in Quartus Forth 0 10000 20000 30000 40000 50000 60000 4464 14464 24464 34464 44464 54464 64464 8928 ... and so forth. How can this be explained by looping through signed-integers?

I do not think this behavior complies any intended behavior of +loop whatsoever. So, honestly, it is not my intention to mindlessly claim 'I know it better', but to solve a problem. And in looking for the source of this very problem I thought I have found something worth being discussed. I am not interested in executing standards as if they were laws...

Neal, what I am trying to do is having a loop running from 0x0000 to 0xFFFF in steps of 8. That's it.

Concerning Win32Forth: I changed the example to

```
: test_win32 0 do i u. 1000000000 +loop ;  
-1 test_win32 0 1000000000 2000000000 3000000000 4000000000 ok
```

-1=4294967295 is negative as a signed 32bit-integer. Would +loop test for signs there too, the result would only be 0.

So, is there a problem or I am still in error? And please run '32767 test' before commenting any further.

Folkmar

By [Folkmar](#) on Saturday, November 13, 1999 - 08:28 am:

Just another idea to show that there is indeed a problem with '+loop', at least a certain difference with 'loop' for which I see no explanation...

```
: count1 0 (hex) FFFF 0 do 1+ loop ;
: count2 0 (hex) FFFF 0 do 1+ 1 +loop ;
hex count1 u. FFFF ok
hex count2 u. 1 ok
```

Thus 'loop' loops me in steps of 1 from 0x0000 to 0xFFFF but '1 +loop' just loops once. Is this really ment???

Folkmar

By [Erwin Schomburg](#) on Saturday, November 13, 1999 - 08:52 am:

Like Neal tried to explain, Quartus is a 16bit implementation of standard Forth, and the loop constructs, as per the standard, use signed integers in the framework set by the implementation. Using a loop increment of 10000 starting from zero, you would get 0 10000 20000 30000 -25536 -15536 -5536 4464 etc. in signed 16bit integer. Not the standard's nor the implementation's fault that you display the 16bit values you get on stack as unsigned decimal integers. If you start from 32768 you start in fact from -32768, which is what you get when interpreting it as signed 16bit integer, if it were not terminating immediately (see below what I comment on the "60000" test) it would continue over to -22768 -12768 -2768 7232 etc., for (+)32767 it continues -22769 -12769 -2769 7231 17231 27231 -28305 ... indefinitely, because you can never have a 16bit signed integer greater than 32767 to make the loop termination test come true....

Since 60000 is -5536 as a signed decimal 16bit integer, Zero is a much greater than this, so the loop consequently terminates after displaying "0" and finding the boundary check to have already exceeded the limit.

If the win32 Forth implementation lets you do what you describe in your last sample, write to *them*.

Finally, my posting above was meant as kind of a joke, if it fired back, my apologies.

May the Forth (still) be with you!

/Erwin

By Erwin Schomburg on Saturday, November 13, 1999 - 09:15 am:

You last example is showing Quartus to be strictly standard: loop is supposed to check for equality of index and boundary so it goes once around the range, plus-loop is to check if the index value crosses over the limit, so it terminates.

/Erwin

By [Folkmar](#) on Saturday, November 13, 1999 - 10:03 am:

Erwin, I think we are talking at cross-purposes.

I am perfectly aware of Quartus being a 16bit Forth system. I am also perfectly aware of the difference between signed and unsigned integers.

As you have seen I always adjusted the Win32Forth version of my examples to the 32bit negative numbers. What I wanted to point out is an apparent algorithmic difference in dealing with negative limits. Since ADDITION is the same for both unsigned and signed integers, the point of dispute is just the TERMINATION CRITERION of +loop. I already suspected in my first posting, that Quartus implements a signed test. According to what you have told me the test is precisely:

Stop looping if new-index \geq limit as signed integers.

I think this is debatable. If you look at my last example it leads to a notably difference between 'loop', which test for equality, and '1 +loop'. Second you can have never-ending loops like '32767 test' as you have explained crystally clear having this termination criterion at hand. The people in Win32Forth decided differently for a termination comparing as unsigned integers. Here '1 +loop' behaves like 'loop' for all parameters, no never ending loops.

Now, the question is how to decide what termination criterion should be implemented. The ANS standard does not seem to be particularly helpful, since there is no mention of whether "crossing" should be interpreted as unsigned, as I and apparently the people of Win32Forth did, or signed, as you do. Maybe you are right, and the ANS has to be read like you do it. I have learned this lesson and I think further discussion of ANS compliance is misleading, fruitless and probably provoking: "ANS compliance" is surely a kind of quality tag and I never intended to remove any quality tags from Quartus Forth. It is the best on-board development tool for Palm OS I know of and has proved to be particularly useful for my purposes.

If anyone has read this message that far, I would like to start again differently: let me reup my original question like this: since my programming purposes as well as my intuition ask for a '+loop-non-ans' performing the unsigned termination test, how can I program this using 'postpone' 'immediate' and a run-time '(+loop-non-ans)'? I do not want to work around with a begin-while-repeat for reasons of elegance (that I would know how to do...)

Any help and hints are appreciated!

Folkmar

By [Neal Bridges \(Nbridges\)](#) on Saturday, November 13, 1999 - 11:03 am:

Folkmar, if you need a loop from 0 to FFF8 in steps of 8, here's one simple solution:

```
: folkmar
  8192 0 do i 8 * . loop ;
```

Neal

By **Erwin Schomburg** on Saturday, November 13, 1999 - 01:43 pm:

Talking "elegance", "3 lshift" instead of "8 *" would save two to three seconds over the complete loop.

8-)

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Saturday, November 13, 1999 - 01:55 pm:

Is it faster? I thought of it but didn't bench it out.

Neal

By **Erwin Schomburg** on Saturday, November 13, 1999 - 02:06 pm:

You would hardly notice or be able to bench it without displaying the lot, but yes, its a tad faster to shift, but I would only bother if I were really hard pressed for performance.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Saturday, November 13, 1999 - 03:04 pm:

Folkmar, I will investigate what the standard practice is for boundary-condition testing in +LOOP. I believe it should be handled as signed arithmetic, and that Win32Forth is doing unsigned for whatever reason; I will look into it. Thanks for bringing it to my attention!

Neal

By [Bob Cunningham](#) on Saturday, November 13, 1999 - 05:03 pm:

Isn't the ANS Forth standard being mildly updated right now? It seems like this issue might be exactly the kind of detail an updated "clean" standard should address, if for no other reason than to make the wording completely unambiguous.

Is there an easy way to grab this thread from the Forum and forward it to Elizabeth Rather? It

seems the discussion here defines the related issues very well.

-BobC

By [Neal Bridges \(Nbridges\)](#) on Saturday, November 13, 1999 - 05:05 pm:

It is being updated, yes -- I would suggest raising the issue on comp.lang.forth first, which I shall undertake to do.

Neal

By [Folkmar](#) on Thursday, November 18, 1999 - 12:07 pm:

I apologize in becoming curious about the issue. I had a look on the answer that Bernd Paysan gave in comp.lang.forth to your question there, Neal.

As far as I understand him and a discussion on '+LOOP vs. /LOOP' in comp.lang.forth a month ago, the key word is 'circular arithmetic'. This would fit with my interpretation of what +LOOP should do. Two people involved in that discussion, Bernd Paysan and Anton Ertl, are authoring GForth, the Gnu Forth compiler, that also claims to be fully ANS Forth compliant...

I think, a further key is provided by the ANS standard description of the run-time of DO:

"DO run-time (n1|u1 n2|u2 --)(R: -- loop-sys)

Set up loop control parameters with index n1|u1 and limit n2|u2. An ambiguous condition exists if n1|u1 and n2|u2 are not both of the same type..."

Thus, unsigned loop parameters are explicitly in the scope and should be dealt with accordingly by +LOOP, or is there something I have overlooked?

In a way, as always, Forth treats the programmer serious: if he wants to loop from start to limit, Forth does it by giving start and limit the right type. No preassumptions on the types of your numbers! If you loop in positive steps, start is smaller than limit, this fixes the types.

Example: In '65535 0 DO ... 1 + LOOP' one has to interpret 65535 as positive to get $0 < 65535$ to make sense to looping in steps of +1. In '0 65535 DO ... 1 +LOOP' one would have to interpret 65535 as -1 to get $-1 < 0$.

The implementation that Bernd Paysan is suggesting does exactly this.

So, what do you think out there about this issue?

Folkmar

By [Folkmar](#) on Thursday, November 18, 1999 - 12:28 pm:

Addendum: Implementation of Bernd Paysan's suggestion for +LOOP in Quartus Forth.

For all who want to compare, I have implemented +LOOP as Bernd Paysan suggested it in

comp.lang.forth. The only difference is that I do not change the 'loop-sys' on the return stack which would have meant to also change the implementation of I J and DO. Thus, the implementation is slightly less efficient but sufficient to show what I mean.

```
\ +loop 17.11.99 22:22 Folkmar
\ WARNING: call BEFORE including core-ext
```

```
needs asm68k
(hex) -8000 constant min-n
```

```
code (+loop)
  4 rp d) d0 .w move
  tos 4 rp d) .w add
  6 rp d) d1 .w move
  min-n d1 .w eori
  d1 d0 .w sub
  tos d0 .w add
  d0 svc
  ] drop [
  d0 .b tst
end-code
```

```
code resolve-do
  \ The entry point in code-space
  \ has offset 70 from leave's.
  \ This works with Quartus Forth
  \ versions 1.2.1/1.2.5.
  ' leave (decimal) 70 + cs d) jsr
end-code inline
```

```
: +loop
  ['] (+loop) compile, resolve-do
; immediate
```

Sorry for reverse-engineering your do-loop construction, Neal. However, I think it was legitimate in this context. If you do not like postings like this, please tell me.

Give it a try on the following examples:

```
: count13+ 0 rot rot do 1+ 13 +loop u. ;
: count13- 0 rot rot do 1+ -13 +loop u. ;
```

applied as follows

Example 1: 65535 0 count13+

Example 2: 32767 -32768 count13+

Example 3: 32767 0 count13+

Example 4: 0 -32768 count13+

Example 5: 0 65535 count13-

Example 6: -32768 32767 count13-

Example 7: 0 32767 count13-

Example 8: -32768 0 count13-

The answer should be $\text{ceil}(\text{limit-start}/+-13)$.

The new implementation gives the following 8 answers:

5042 5042 2521 2521

5042 5042 2521 2521

The Quartus Forth +LOOP gives instead:

1 45371 12603 2521

1 DNT 2521 DNT

DNT means the loop Does Not Terminate.

(Erwin, I know how to EXPLAIN this behavior, the question is whether it is desirable...)

So please, tell me your opinion on all this.

Folkmar

By [Erwin Schomburg](#) on Thursday, November 18, 1999 - 02:06 pm:

I have no problems with customized behaviour in custom named words, but I prefer when the words that are standardized behave as the standard prescribes to the letter, even if its PITA in some instances. If the new, desired by the majority, behaviour is to become the new standard, fine with me if it does not break existing code without clear caveats around the new definitions. I was reminded of that principle by Neal when outlining the docinc module, the behaviour of the standard conformant implementation of ALLOCATE *is* PITA for the specific case, but there was no way I could get away with a 32bit memory allocation word in 16bit Quartus and call it ALLOCATE.

May the Forth be with you

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Thursday, November 18, 1999 - 02:15 pm:

No need to apologize, Folkmar. Your postings are fine. Interesting work! I am impressed that you have gone to the trouble of a re-implementation.

Your +LOOP definition passes my internal test suite and is a superset of the existing behaviour of the system. I will look it over with an eye to including it directly in the kernel.

Thanks!

Neal

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Localized error messages -- translations needed!

**[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
Localized error messages -- translations needed!**

By **[Neal Bridges \(Nbridges\)](#)** on Friday, November 12, 1999 - 03:47 pm:

I've had several requests for international versions of Quartus Forth in which the error messages are provided in French, Spanish, etc. If you're familiar with a non-English language and would like to translate the 60 (or so) message strings, please drop me a note.

Neal

By **[Douglas Atique](#)** on Sunday, January 23, 2000 - 05:17 pm:

Hi, Neal.

Just now I've noticed this thread.

One doubt concerning the translations: in my translation I decided not to translate the Forth words as I see them as proper names. Also, when facing an error message in a totally unknown language, it might be comforting to know which word the message is about...

Regards,
Douglas

By **[Neal Bridges \(Nbridges\)](#)** on Sunday, January 23, 2000 - 05:23 pm:

Good thinking, Douglas. This is just what I wanted.

Neal

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Missing forms

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Missing forms

By [Trevor Steele](#) on Wednesday, November 10, 1999 - 03:39 pm:

Hi everyone

I have encountered a minor annoyance when compiling standalone .prc files and I would appreciate any reply which may shed some light on it.

My resource contain forms with IDs from 1000 to 1005, however forms 1001 and 1002 are not linked into the resource file for the .prc and have to be placed there manually using RsrcEdit. When this is done everything runs fine. The curious thing is that the remaining forms 1000, 1003, 1004 and 1005 don't give any problems. Ideas anyone?

Best regards

Trevor

By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 10, 1999 - 04:18 pm:

I presume you're using CopyRsrc to copy the forms into your target PRC... should work fine. If it's not, for some reason CopyRsrc must be having trouble copying over the existing default forms in the target.

I'd be happy to have a look at it if you like; however the simplest fix for you would just be to renumber your forms 2000 to 2005.

Neal

By [Trevor Steele](#) on Thursday, November 11, 1999 - 07:46 am:

Hi Neal

Thanks for the help. I had been a plonker and deleted the default forms at the end of my make-prc file, thus deleting my new resouce files instead!

Best regards

Trevor

By [Neal Bridges \(Nbridges\)](#) on Thursday, November 11, 1999 - 12:30 pm:

Ah, glad it's sorted out! Thanks for letting me know.

Neal

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POSE DB export

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): POSE DB export](#)

By **[Erwin Schomburg](#)** on Wednesday, November 10, 1999 - 12:51 pm:

The new POSE (3.0a2) has the ability to write Palm databases to the host filesystem now. Easy to overlook.

May the Forth be with you!

/Erwin

By **[Neal Bridges \(Nbridges\)](#)** on Wednesday, November 10, 1999 - 01:53 pm:

Neat. There's a way to do it with the old POSE also -- a handy PRC that lets you export any on-board database to a file on the PC.

Neal

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I've been getting a lot of e-mails lately...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

I've been getting a lot of e-mails lately...

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 9, 1999 - 09:44 pm:

...which is terrific, and I don't mind at all if you want to ask questions via email.

I do encourage the use of the message forum wherever possible however, as you'll get a broader range of responses, and also others who have similar questions will benefit.

Neal

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Error on compilation

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Error on compilation

By [Barry Ekstrand](#) on Saturday, November 6, 1999 - 03:28 pm:

Neal,

I am getting an error on compilation that I can't find the problem source on. My code file is in doc format and my make file is in memopad as it has been for some time. I added some code to error-trap user input, just a flag to output a message if the input was too large. Now on compile I get 3 graphic characters (they look like small vertical rectangles) and the characters EXP in an error message as follows:

```
Exception in file: make  
***EXP? undefined word
```

where * is the graphic character.

Nowhere in my code is a word with EXP in it at all. I've commented out all of my recent changes but I'm still getting the error. Other info is that I just updated my OS from 3.0.2 to 3.1 with the Palm patch and I recently loaded Quartus 1.2.5R, although this problem before the OS update and I had successfully compiled under Quartus 1.2.5R before these changes.

Any idea where I should look? There isn't a chance that the doc file is somehow at fault is there (it appears fine in QED and TealDoc).

Any help is appreciated.

Regards,

Barry Ekstrand

By [Neal Bridges \(Nbridges\)](#) on Saturday, November 6, 1999 - 10:49 pm:

Hmm, hard to say. If you do an 'true echo drop' you'll be able to see how far along it gets before it fails; that might help shed some light.

Neal

By [Ron Doerfler](#) on Saturday, November 6, 1999 - 11:06 pm:

Just a thought. You'll sometimes get half-cryptic error messages just like this if you leave the memo database locked from an earlier run of your program. In cases like this, I select the "Go Last Error" menu option to end up in what Quartus thinks is the offending memo (sounds like "make"). Then I edit it (like adding a space) or change the memo category, and exit the memo. This clears the error.

I'm not sure this is your problem, or if you even lock the memo database, and it seems that you have edited some things, but it's worth a try. You might also try to just compile it without making a standalone program to see if a different memo shows up as the source of the error other than "make."

Ron

By [Neal Bridges \(Nbridges\)](#) on Sunday, November 7, 1999 - 12:13 am:

Thanks Ron. I've never encountered this phenomenon; hopefully you've hit it.

Neal

By [Barry Ekstrand](#) on Monday, November 8, 1999 - 12:08 pm:

Well, lets see if this makes any sense. I was unable to get my code to compile again, even after taking out the newest stuff. Luckily for me, I use 2 different PCs and had an older copy of my code (about 10 days older) on the other one. I put a copy of it into a temp directory and did the Instapp to re-load onto my Palm, and it compiled fine - just missing the stuff I had added in the last week and a half. I then copied and pasted from the "bad" file to bring the "working" file up to date and all was fine until I added the following error-trap code:

```
value2 @ fvalue1 f@ f>d d>s
< 0= if
100 10 at
1 font drop
." Too many values!"
else
.....do the other stuff it already did, and add the needed "then"
```

Note that I am trying to compare 2 values, one of which is a floating point value that I am converting to a single cell value. If value2 isn't smaller than fvalue1 I want the error message to come up.

After adding the above code, I get the same kind of error as before, a message about an undefined word (though now it is a different word). I tried Ron's idea and it didn't change anything.

The really odd thing is that once the error occurs, it seems to corrupt the code file - even after taking out the code that I added, it will not compile.

As a side note, one lesson I re-learned is the importance of backing up code on a routine basis. I find RsrcEdit to be great for this, as it will duplicate any file on the Palm. Once I re-corrupted the code and couldn't repair it again, I used RsrcEdit to delete the "bad" copy and change the name of the backup copy.

All this weird stuff being documented, what I really need to know is what have I done wrong with the error-trap code?

Thanks,

Barry Ekstrand

By [Neal Bridges \(Nbridges\)](#) on Monday, November 8, 1999 - 02:23 pm:

Hi Barry. At this point I'd like to try a bunch of things myself to see what's happening -- can you send me any code? If not, we can work together to figure it out, but it'll take longer.

Neal

By [Barry Ekstrand](#) on Monday, November 8, 1999 - 03:01 pm:

Neal,

One more update -- I changed the approach to the error-trap as follows, and now it works:

```
value2 @ s>d d>f fvalue1 f@
f< 0= if
100 10 at
1 font drop
." Too many values!"
else
    .....do the other stuff it already did, and add the needed "then"
```

All I did was change the single cell value to a float and then test using f<, rather than the previous approach of changing the float to a single cell value and testing with <. I don't know why one works and the other doesn't, but that is what it is. I'll send you the actual code to look at with resources.

Barry

By [Neal Bridges \(Nbridges\)](#) on Monday, November 8, 1999 - 03:54 pm:

Thanks Barry. I'll load it up this evening and see if I can shed any light.

Neal

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IrComm prototypes for Quartus?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): IrComm prototypes for Quartus?](#)

By [Erwin Schomburg](#) on Friday, November 5, 1999 - 05:01 am:

Hi, has anybody done work with the new IrDA libraries under PalmOS3.3? I'd like to know the proper names to open the (shared) IrComm Library and the functions (prototypes) available from there, but seem to miss this in Palm's documentation.

May the Forth be with you!

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Friday, November 5, 1999 - 07:51 am:

I shall hunt that information up for you.

Neal

By [Erwin Schomburg](#) on Friday, November 5, 1999 - 08:21 am:

Most grateful.

/Erwin

By [Bob Cunningham](#) on Friday, November 5, 1999 - 05:29 pm:

Yes! And, I've been led to understand that the 3.3 calls will allow me to open BOTH the IR and Serial ports on my upgraded 5000 SIMULTANEOUSLY (since the UART for the IR is on the expansion board, and the UART for the serial is part of the Dragonball CPU). On all other Palms with IR from the factory, a single UART is used for both IR and Serial.

While I don't believe everything I'm told, I'd like to know if the calls APPEAR to support this, and how I might best go about testing it.

-BobC

By [Neal Bridges \(Nbridges\)](#) on Friday, November 5, 1999 - 05:44 pm:

Good question; I'm not sure. The API docs haven't been updated since 3.0. I'll look at the header files and see what I can glean.

Neal

By [Harry Chou](#) on Sunday, December 5, 1999 - 08:18 am:

I am looking for the IR solutions on Quartus too, by now the info. I got is that 3COM had a Irenhance library can turn anything go in/out from UART to IR port, so you can hotsync with PC through the IR but cradle.

The UART hardware in dragonball got a special MISC register that can be set(IR enable) to

turn on the IR port.

If we can program the IR by using the serial library, and if Quartus can provide a WORD named IRredirect or something like that will be nice for people who want to program with IR port.

Harry Chou

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 5, 1999 - 10:21 am:

This comes from the message archives:

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

By [Harry Chou](#) on Sunday, December 5, 1999 - 11:20 pm:

when SerOpen was done, the rs232 line driver was active to TX/RX bit stream, if we do IrEnable, for sure it will turn the IR on, but at this moment, does the rs232 line driver been turn off as we expected?

It is the power consumption issue, not functional.

Harry

By [Neal Bridges \(Nbridges\)](#) on Monday, December 6, 1999 - 12:29 am:

Harry, I'm not entirely sure. Bob Cunningham has done some work with this; perhaps he can chime in if he's reading.

Neal

By [Harry Chou](#) on Tuesday, December 7, 1999 - 09:56 am:

This is the testing result done on my palm V,

initserlib

9600. seropen (rs232 line driver ON)

irenable (..... OFF)

.... (rx signal from IR, fine!)

irdisable (rs232 line driver ON again)

serclose (..... ON still?)

serclose (..... OFF)

there are something wrong in the last 3 commands.

But I am not sure why?

Harry

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 7, 1999 - 10:23 am:

You might try a reset. The serial library keeps track of how many times it has been opened, and won't turn off the rs232 until it's been closed an equal number of times.

Neal

By [Harry](#) on Tuesday, December 7, 1999 - 08:58 pm:

I have try reset, but it got the same effect.

Before seropen, I am sure the rs232 is OFF, so the Quartus is the only user to use the serial port.

There is another case with no IR redirection,

9600. seropen (..ON)

serclose (..ON)

serclose (..OFF)

when we place the serclearerr in between,

9600. seropen (..ON)

serclearerr (..ON)

serclose (..OFF)

I am confused by these different cases

harry

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 7, 1999 - 09:18 pm:

I've never tried it myself, Harry. How are you testing to see if the rs232 line driver is on or off?

Neal

By [Harry](#) on Tuesday, December 7, 1999 - 10:22 pm:

It is simple by using a LED based rs232 tester, plug into the cradle serial outlet, if the rs232 line driver is off, all tx/rx/rts/cts are floating, so you can't see any light on the tester, if you open serial port by command, pin3,RxD(from DTE point of view), will go down to -3V, and red LED on; pin5,CTS, will go up to 3V, and green LED on.

The point is the SP385A(line driver) inside the Palm, this chip got a power shutdown control pin to do the job.

harry

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 7, 1999 - 10:35 pm:

Pretty strange. I'll see if my device behaves so oddly. When the port is dormant, A SerOpen followed by a SerClose should certainly leave it dormant again. I can say that serial.txt doesn't do anything fancy -- just runs the ROM calls in question. No tricks.

Neal

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Questions

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Questions](#)

By **Marc de Groot** on **Thursday, November 4, 1999 - 02:40 pm:**

Hi, Neal. I'm enjoying playing with QF.
Some questions:

I have loaded the assembler and disassembler at the same time. cshare has wrapped around the 64k boundary, and everything still seems to run. Is that right? Can I wrap around like that? And if so, how much space do I have?

Are any of the registers reserved by the Palm OS?

In your list of sysstraps, there are a number that start with Hwr (such as HwrLCDBaseAddr) and I can't find any documentation on them in Palm's docs. Where can I get relevant info?

Thanks!

-Marc

By **Neal Bridges (Nbridges)** on **Thursday, November 4, 1999 - 02:48 pm:**

Glad you're having fun!

The amount of free codespace can be determined at any time with

```
csunused u.
```

a0, d0, d1, and occasionally d2 are trashed by Palm OS ROM calls.

The Hwr* calls are officially undocumented; there be dragons. If you can find a way to do what you want without using them, you'll be happier when it comes time to make your software work on later Palms.

Neal

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Output formatting - columns and alignment

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Output formatting - columns and alignment

By [Barry Ekstrand](#) on Monday, November 1, 1999 - 08:46 am:

I would like to format my output so that multiple variables appear in columns. I would further like to right-align numeric variables within their columns. Any direction on how to get there? I seem to remember seeing some comments about tables and difficulties in using them - is this where I need to go? As always, any help is appreciated.

Barry

By [Raul Perez](#) on Monday, November 1, 1999 - 08:58 am:

isn't there a <# and #> word for formatting numbers within a field?
I seem to recall seeing it, but an example for us newbies would be really cool.

By [Neal Bridges](#) on Monday, November 1, 1999 - 09:20 am:

textalign.txt should give you what you need, Barry. It lets you line up text on a specific pixel column, right, center or left.

I have some code to format numbers with commas, Raul; I'll post that soon as an example of using <# and #>.

Neal

By [Barry Ekstrand](#) on Monday, November 1, 1999 - 12:44 pm:

Neal,

Thanks once again for a quick reply. I should have been more explicit in my question: in addition to output on the display (thanks for the answer to that one!), I am also looking for how to align output in columns when writing to a Memopad text file. I've taken a quick look at Allen Chen's newmemo.txt but it isn't readily obvious to me how to modify WriteNewMemo or AppendCurrentMemo to create the equivalent of opening or appending a memo and writing in aligned columns. Can you point me toward this?

Thanks,

Barry

By [Neal Bridges](#) on Monday, November 1, 1999 - 01:18 pm:

You really can't, Barry, not reliably. All the built-in fonts on the Palm are proportional. Numbers themselves are in fact fixed-width, so if you're careful not to mix text and numbers, you might get away with it. One Standard word that could be useful there is **D.R.**

Neal

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Organizing Projects

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Organizing Projects](#)

By [Raul Perez](#) on Thursday, October 28, 1999 - 07:31 pm:

Are there ways to organize projects in Forth?

One way I was thinking of was doing something like the notebook archive that library is released as. But I don't know how to make one of those.

I assume that when I register my Quartus Forth that I'll get ways to analyze my generated .prc and find out what it calls etc.

(please wait, I'm a starving newbie and figured I can pay once I make a program to sell...)

What other tools are useful in figuring out what is going on in a program? or packaging all the parts of the program?

By [Neal Bridges](#) on Thursday, October 28, 1999 - 07:38 pm:

MPA archives are created using the Windows version of the Palm Desktop software. There are many ways to organize source files on your Palm -- in categories in the MemoPad, or named with a specific prefix, or stored in DOC format, again in various categories.

The registered version of Quartus Forth does in fact have a mechanism for generating full symbols, so you can do amazingly detailed profiling of your stand-alone apps, using the Palm Emulator.

When you speak of packaging -- are you referring to the source, or the stand-alone executable? The executables are self-contained, and require no run-time or supplementary files.

Neal

By [Douglas Atique](#) on Friday, November 19, 1999 - 05:47 am:

BTW, I use the Macintosh version of Palm Desktop. How can I load the library that came with Q4th which is in MPA format?

By [Neal Bridges \(Nbridges\)](#) on Friday, November 19, 1999 - 08:23 am:

The MPA memo archive doesn't work with the Mac. However, there is a straightforward solution using the provided libtxt.zip and this program: [Text to CNOT](#).

Neal

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Newbie needs a 'continue' (C) equivalent in DO...LOOP

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Newbie needs a 'continue' \(C\) equivalent in DO...LOOP](#)

By [Christian Fauchier](#) on Wednesday, October 27, 1999 - 04:14 pm:

Hello, happy Forth coders,

I am currently writing a program that uses a DO...LOOP iterating structure. Depending upon the result of a test, the inner treatment has or has not to be executed. So the basic structure of my loop is :

```
100 0 do
    flag if
        \ ...
        \ instructions...
    \ ...
    then
loop
```

In order to improve the readability and avoid unnecessary nestings, I'd like to use an equivalent of the C instruction 'continue', that, when encountered in a loop, skips to the next iteration. The loop would so become :

```
100 0 do
    flag 0= if
        continue \ leave this iteration, skip to next
    then
    \ ...
    \ instructions...
    \ ...
loop
```

AFAIK, such a word doesn't exist in standard Forth. I guess it should not be too difficult to implement, but so far, I am not an expert in create/does>, postpone/immediate and other Forth mysteries. Could someone help ?

Regards

Christian - Martinique (FWI)

By [Neal Bridges](#) on Wednesday, October 27, 1999 - 05:05 pm:

Hi Christian. In your example above, you're not avoiding any nestings with a 'continue' construct. While I could create such a construct, I think it would only complicate the easy reading of complex conditional structures. For readability I'd recommend the practice of factoring out the thing you want done:

```
: perform
  ...
;

: go
  100 0 do
    condition if perform then
  loop
;
```

Neal

By [Christian Fauchier](#) on Thursday, October 28, 1999 - 03:08 pm:

Hi Neal,

Thank you for your quick reply. I understand your point of view, obviously better "Forth-styled" than mine. What I meant by 'nestings' is, for example, the case when 'perform' contains some other "exception" conditions. The typical structure is :

```
100 0 do
  condition1 if
    \ ....
    \ part of the inner treatment
    \ ...
    condition2 if
      \ ...
      \ inner treatment (continued)
      \ ...
      condition3 if
        \ ...
        \ some more inner treatment (and so on...)
        \ ...
      then
    then
  then
loop
```

The main part of the loop treatment so finds itself gradually indented, which impairs the readability, especially on a narrow screen editor. Of course, the factoring solution may be applied in this case, but my (C-warped ?) mind tends to get a better overall view of the algorithm in a structure like :

```

100 0 do
    condition1 if continue then
        \ ....
    \ part of the inner treatment
    \ ...
    condition2 if continue then
        \ ...
    \ inner treatment (continued)
    \ ...
    condition3 if continue then
        \ ...
    \ some more inner treatment (and so on...)
        \ ...
loop

```

in which all parts of the main inner treatment remain at the same indentation level (no nesting).

I encountered this instruction for the first time in Informix-4GL language, then discovered that it also existed in C, and found that a parcimonious use of it could in some cases yield more legible code. But I'm still too new in Forth programming to figure out if it is good- or evil-style Forth coding...

By [Neal Bridges](#) on Thursday, October 28, 1999 - 04:03 pm:

I mucked around a bit this afternoon trying different implementations of 'continue', and nothing is especially simple or appealing. I think it falls in the 'evil' (i.e. non-structured) category.

Use cond/thens to clean up the stack of 'thens' at the bottom of a multiple conditional structure, and also I suggest you focus on factoring out the conditional code segments into their own words:

```

: go
  cond
  condition1 if do-thing-one
  condition2 if do-thing-two

```

```
condition3 if do-thing-three
thens
;
```

Very readable, I think, and obvious at a glance as to what the structure is, whereas using a 'continue' facility it might not be so clear.

Neal

By **Christian Fauchier** on Thursday, October 28, 1999 - 06:29 pm:

Actually, this construction looks fine. I did not know about cond/thens yet (my Bible is Rather/Conklin's Forth Programmer Handbook and does not mention these words) but I will have a thorough look at them in Quartus Forth samples.

Thanks for advice. I'll probably be back soon !

Christian.

By [Neal Bridges](#) on Thursday, October 28, 1999 - 06:42 pm:

Looking forward to it. Ask any questions that arise as you go!

Neal

By **Raul Perez** on Thursday, October 28, 1999 - 07:12 pm:

Just for my information,
could the CASE be used for Christian's problem?

And if not, what would you use the CASE for?

By [Neal Bridges](#) on Thursday, October 28, 1999 - 07:32 pm:

CASE is a rather primitive structure that can be used when you are matching against a fixed list of choices. If you're doing anything more sophisticated, cond/thens is a useful tool.

Neal

By **Raul Perez** on Monday, November 1, 1999 - 09:47 am:

On the topic of C and 'how to do that' in FORTH,
I have a function, that I don't know how to translate. I include it here:

```
long read_expr(long rparenokay)
/* read s-exp from input-stream */
{
    long w = read_word(), first, last, next;
```

```

if (w < 0) return w; /* error? */
if (w == right_paren)
    if (rparenokay) return w;
    else return nil;
if (w == left_paren)
{ /* explicit list */
    first = last = cons(nil,nil);
    while ((next = read_expr(1)) != right_paren)
    {
        if (next < 0)
            return next; /* error? */
        last = cdr[last] = cons(next,nil);
    }
    return cdr[first];
} /* end if (w == left_paren) */
return w; /* normal atom */
}

```

By the way, I tried to use the pre{} marker on that code, and it got confused by C's } ending markers. I figured out I needed a backslash in front of the end markers so it doesn't get confused. Maybe a note when the page tells folks about the pre{} command would help someone else out.

I figured out several things already.

- 1) It is better to translate a single line of C into a named word in FORTH, it makes things more manageable.**
- 2) I don't know how to code recursion in Forth, but there is a RECURSE word.**
- 3) I don't know how to save variables on a level of the stack so each call gets a new copy of the variables. (first,last,next in the code)**
- 4) Figuring out what the stack looks like all the time is a good idea. It keeps you from being confused. I figured I could just use top-of-stack for the variable w.**
- 5) I'm trying to figure out whether to use the original code's structure in all cases, for example, Chaitin uses static memory allocation for his lists. Instead of dynamic memory allocation, he just allocates a big array at the beginning, and manipulates indexes in the array to simulate dynamic storage. I'll probably use a DB, but haven't gotten that far yet. He uses a car[] and a cdr[] array, and**

```

long cons(long x, long y)
/* get free node & stuff x & y in it */
{ long z;
  /* if y is not a list, then cons is x */
  if ( y != nil && atom[y] ) return x;
  if (next >= SIZE)
  { printf("Storage overflow!\n");
    exit(0);
  }
  z = next++;
  car[z] = x;   cdr[z] = y;
  type[z] = NOT_ATOM & NOT_NUMBER;
  bindings[z] = 0;
  return z;
}

```

5) I am still a newbie.

Ultimately, I'd like to have this as a word that I can follow with a list used like:

S-EXP (#\$isa (#\$func 3 "name") #\$Thing)

But I figured understanding how to code recursion would be the first step. Then I'll work on how to use IMMEDIATE POSTPONE and all those other Forth words to read syntax in.

Can anyone help?

By [Neal Bridges](#) on Monday, November 1, 1999 - 11:07 am:

RECURSE causes the current word to be recursed into. See examples in *tinylocals.txt*, *dblmath.txt*, *fib.txt* and *tools-ext.txt*. If you need a detailed explanation I'll be happy to provide more examples.

In Forth, the data stack is used to hold values when recursing. I recommend against the use of named locals, but if you desperately want them, have a look at *tinylocals.txt*, which provides a simple and elegant implementation of eight named locals (L1 to L8).

How you decide to store your data depends on the size of the list you want to manipulate. For greatest simplicity and speed, use a static buffer. For a list that will grow and shrink unpredictably, dynamic memory and/or a database might be indicated.

At this point you should not worry overmuch about POSTPONE and IMMEDIATE; they are not required all that frequently.

Thanks for the note about `\pre{}`!

Neal

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A question on codespace

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): A question on codespace](#)

By [Folkmar](#) on Wednesday, October 27, 1999 - 08:09 am:

I have looked on how Quartus organizes codespace. The picture I have got is the following: if you define a new word the following is stored at the current 'cshere': (all numbers are hexadecimal, a line are two bytes)

```
00 00
&lfa ( pointer to next linkfield in list )
n char_1
...
char_(n-1) char_n ( if n is odd, else char_n xx )
code_1
...
code_m
12 34
```

Did I get it right? What purpose serve the delimiters 00 00 and 12 34? Is it because there are more than one search list and does it help hashing? Perhaps there is somebody out there who would like to explain this to me.

Since 12 34 is only a kind of delimiter, I suppose one could shorten the 'traplength' in the tickhack example by 2 bytes?

Thanks for any comments which will come.

Folkmar

By [Neal Bridges](#) on Wednesday, October 27, 1999 - 12:25 pm:

Bear in mind the internal dictionary format is not publically documented, and is subject to change at any time.

The (hex) 1234 is a delimiter, yes. Hashing is handled via an entirely different structure.

You can in fact shorten 'traplength' by two at the current time. I left the calculation without an adjustment so that should the dictionary structure change at a future date, the code will not require adjusting; this is worth burning the two bytes.

Neal

By [Folkmar](#) on Wednesday, October 27, 1999 - 03:12 pm:

Thanks for the warning. I certainly agree that this is a good reason to sacrifice just two bytes.

Folkmar

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KVM -vs- Quartus

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

KVM -vs- Quartus

By [Jim Hendricks](#) on Tuesday, October 26, 1999 - 02:15 pm:

Now that Sun has made a pre-beta copy of the Palm KVM available for those of us who did not attend JavaOne, I was wondering if any Quartus Users have played with the KVM and would be interested in sharing some insight on it's performance, ease of use, etc. especially as compared to Quartus. My assumptions based on my work with Quartus is that Quartus will still blow Java off the map for performance, and Quartus is still king of the hill for onboard dev, I beleive the KVM is remote dev. My un-tested opinion on the KVM is that it's best argument as a dev tool for the Palm is the languages knowledge/experience base. If that is true, is the lower performance and less flexible dev environment reasonable tradeoffs to being in a "popular" dev language.

Let me know what you think!

By [Neal Bridges](#) on Tuesday, October 26, 1999 - 03:00 pm:

I have the KVM installed on some of my test equipment. KVM is still off-device development. Apps are somewhat slow, run from interpreted byte-code and require a substantial run-time to be loaded on the device.

In contrast, Quartus Forth generates optimized native-code directly on the device, apps are very fast, and no run-time is required.

As to the language knowledge -- Forth is a small, clean language, easily learned by any programmer. This is not to suggest other languages don't have their charms, but lack of knowledge is a very small obstacle indeed.

Neal

By [Matthew Burke](#) on Thursday, October 28, 1999 - 09:18 am:

Just a minor comment---

Yes, Forth is easy to learn. And it is a tremendously elegant language ('elegant' being the supreme compliment from a mathematician). But it is not an easy language to do well.

It's analogous to learning Japanese. Japanese is an easy language to learn to speak (reading/writing is a different matter), but for someone whose native language is one of the Romance languages, it is not an easy language to learn to speak well. The idioms in Japanese are very different from the idioms in English, French, Spanish, etc.

Forth idioms are strange (to someone brought up in C, Pascal, etc.). Yes, I can bang out some code that works, but it's going to take a (very) long time till I get to the point till I can bang

out well-written Forth.

Of course, someone who can craft well-written Forth is, IMHO, a real programmer...

Matt

By [Neal Bridges](#) on Thursday, October 28, 1999 - 09:52 am:

In my experience the total programming experience takes less effort in Forth than it does in, say, C, but the emphasis is shifted.

That is, while C encourages you to write rambling functions quickly, the lion's share of the effort comes in debugging that quickly-written code.

With Forth, more thought goes into writing each short well-named definition, but with substantially greater odds that each such function is bug-free, thus reducing the amount of time needed for debugging. Plus, those working definitions serve as building blocks for later stages of your app, so the benefit propagates upward.

Forth also enables code re-use almost without any effort at all, which speeds later development efforts.

Many Forth programmers will tell you they are *ten times* more productive in Forth than in any other language; this is the commonly held factor, and my experience backs it up.

The discipline to write short, well-named definitions can be learned through practice, and learning it will make you a better programmer in any language.

Neal

By [Jim Hendricks](#) on Monday, November 1, 1999 - 09:35 am:

I agree from my limited experience that Forth is easy to learn but implementation is quite a different situation. Years of learned Forth hostile programming can make thinking properly when developing something in Forth a real challenge. This does not mean I wish to stop Forth, it's elegance in an "ugly duckling" way intrigues me! I say "ugly duckling" way because when trained in conventional languages, a first look at Forth is "wierd, why would anyone want to code that way", it's not until you do it that you realize this "ugly duckling" is really a swan and much more beautiful then you originally imagined. My interest in the KVM is due to my job. Too many decisions are made not on what is best, but what will make the most amount of money. I recall many years ago working on an Amiga 1000, then the A500, I thought it was far superior to what any other manufacturer could offer. When push came to shove though, my job works with PC's so then so do I. Needless to say that outside of Europe, it seems that the elegant machine has been passed off to obscurity. I see the same with the programming I do. My job has me coding in Java. I pride myself in my skill in the language, and what I can accomplish in a short amount of time. When I play with programming on the Palm though, I work in Forth where I am not so skilled, and have to constantly remind myself about the

different architecture.

Here's what I can see with this situation.

1. I would love to program in Forth on the PC for my business. I can't make that move though because I can't argue support of a "fringe" language (At least that's what non-Forth people see it as) which has limited learning resources available and limited tool offerings. I also don't have the cross platform abilities in Forth as well as I do in Java. Finally, I can't run Forth through a browser. (Yes, I have seen the Java Forth solutions but they are too primitive).
2. I am willing to continue to code in Forth only for my hobby programming, the elegance of the language keeps me coming back for more. My frustrations occur for a few reasons. When programming in Java, I don't need to know the underlying OS, when coding in Quartus, I need to know POS3 if I want to get anything done. It would be fantastic if there were an OS abstraction layer which shields me from the OS's complexity (but then of course you suffer bloat). I think my major frustration though when working in Forth is the lack of idiot guides for Forth programming, guides beyond just a beginners tutorial but still written for someone struggling with the new concepts in Forth. I guess I can say the same for programming with the POS3 API's.

I guess all in all I wish Forth would be more mainstream, then there would be more books etc, there would be more mature offerings for Web and PC, there would be abstraction frameworks released for those of use desiring a more cross platform approach. But alas, it seems that the Forth community at large enjoys being part of a fringe where they can count themselves among the inteligent elite who have found programming near-nirvana.

By [Neal Bridges](#) on Monday, November 1, 1999 - 10:57 am:

Hopefully Quartus Forth represents a step into the light. I'm at work on better tutorial materials. As always, ask any questions that will help!

Neal

By [Neal Bridges \(Nbridges\)](#) on Monday, November 1, 1999 - 06:22 pm:

I have given some thought to your points.

- 1) Running Forth 'mainstream': Forth makes an excellent scripting addition that can be plugged into C -- have a look at FICL. A number of successful infiltrations have been managed that way. :)

Forth can be written cross-platform if you desire; you're right in that it doesn't provide every conceivable abstraction out of the box, but porting Forth can be made quite simple.

At present, only Java can be run through the mainstream browsers. I've done some interesting Forth CGI work, though; it performs admirably there, and fast.

2) A desire for abstraction: I believe direct access to the Palm OS through Quartus Forth is a strength, not a weakness, especially in a resource-constrained environment like the Palm. Rather than only providing only a subset of abstracted facilities, all the system's functions are available to you directly. And yet, should you feel a strong need for layers of abstraction, Forth makes it trivial to add them exactly tailored to your needs.

One approach the Standard favours is defined word-sets that cover a specific problem domain. If you can define a set of words that would concisely and flexibly permit cross-platform access to a widely-available facility of some sort, please make them public; the community will be delighted to review them and suggest changes.

Neal

By [Jim Hendricks](#) on Tuesday, November 2, 1999 - 09:26 am:

Since all our new/cutting edge work is done in Java where Forth as a scripting language with currently available technology is not a good fit, I must wait for a Forth->java compiler that generates either java sources, or more practically, java classes. I have dabbled with it myself but my lack of understanding of the underlying structure of a Forth VM and compiler technology in general means that I will probably not get anywhere with it. Java being a stack based language in it's runtime seems to be a great fit for a Forth->javaclass compiler, the real work would be in figuring out the best ways to fit Forth into the Java OO, and the best way to manage dictionaries etc.

My only real desire for abstraction is to provide the cross platform capabilities. Insolation from the OS is a secondary benefit because I don't have to learn the OS, only the abstraction layer. Since the abstraction layer is designed for multiple platforms, it's learn once code anywhere (hmm, sounds reminiscent of a Sun theme)

When it comes to defining targeted word-sets, I have been thinking of that but since I still have not found a windows Forth VM I am happy with, I have not attempted to turn some of my QForth into some other flavor to see how something like that could work as a solution. Any suggestions for a Win Forth VM from this List would be appreciated, I am looking for one that gives me access to the OS API (or provides an abstraction layer) as well as produces Native executables instead of PCode executables. My goal once I have found this tool is to try and make an argument that many of our background tasks we program in support of our applications would benefit from being coded in Forth.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 2, 1999 - 06:53 pm:

For a Windows Forth, I suggest you download the 30-day evaluation of SwiftForth from www.forth.com.

Also -- as regards getting Forth in the door -- ask and search in the Usenet group comp.lang.forth; there are some success stories there that might provide a few tips.

Neal

By [Jim Hendricks](#) on Wednesday, November 3, 1999 - 09:16 am:

Thanks Neal, I had considered the eval for SwiftForth but was put off by the price. If I can squeeze Forth in the door to the company, the price is not an issue, if Forth remains just my hobby, then the price may not be reasonable on my play money budget! I am downloading the eval as we speak and I will kick the tires and see how she rides. :).

comp.lang.forth. hmmm... Last time I was by there (at least 6 months ago) the group seemed tied up in arguments over Forth stuff way above my head. I will have to give it a peruse again to see what might be there.

Thanks

By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 3, 1999 - 09:44 am:

There are a number of such discussions going on at any particular time. The wheat-to-chaff ratio is a bit higher there than in many groups, though, and a well-placed question can return a lot of useful information.

Neal

By [Jim Hendricks](#) on Wednesday, November 3, 1999 - 11:28 am:

OK, Tks, when my workload allows a few minutes browse time, maybe I will place a question.

Jim

By [E. Ross Helton](#) on Wednesday, November 3, 1999 - 02:09 pm:

Hi Jim;

I downloaded the demo copy of SwiftForth which Neal advised you about, about. The manual as Neal said is helpful.

Because I had downloaded it and had expressed interest in it they gave me a very special price. It was one I couldn't refuse.

You might download the product, and if it meets yours needs, write to their promotions and ask if they will have any special offerings price-wise.

It's worth a try.

Make it a good day!

Ross

By [Douglas Atique](#) on Monday, December 6, 1999 - 03:22 pm:

I have downloaded and installed the KVM just to see it working. It works, but I loved on-board development and one must choose what stays and what doesn't when one runs out of space.

In fact, I am delighted with the flexibility of Forth and think it would be feasible to write a Java compiler (like javac) in Quartus Forth to run onboard. Then one could do the development on this application and run on KVM, all inside the Palm. Unfortunately, I don't think Java source code can be so small and compact as Forth. Anyway, I have seen an onboard C compiler, why not a Java compiler?

**Regards,
Douglas**

By [Neal Bridges \(Nbridges\)](#) on Monday, December 6, 1999 - 03:32 pm:

An interesting project idea, Douglas. Quartus Forth is well-suited to writing compilers, as it is both a symbol-table and a code-generator.

Neal

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TickHack -- source available.

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): TickHack -- source available.](#)

By **[Neal Bridges](#)** on Tuesday, October 26, 1999 - 12:07 pm:

TickHack was recently re-written entirely on-board a Palm Vx, using Quartus Forth. The source is provided, and provide an examples and template for creating new hacks using Quartus Forth and the *asm68k* assembler.

Neal

By **Raul Perez** on Tuesday, October 26, 1999 - 04:01 pm:

I hate to ask an obvious question, but where is the TickHack source ?
I looked in the Quartus Forth Library at
<http://www.quartus.net/files/PalmOS/Forth/Library/>

and didn't find it. Is there another place where
example source is stored?

By **[Neal Bridges](#)** on Tuesday, October 26, 1999 - 04:07 pm:

It's in <http://www.quartus.net/files/PalmOS/Forth/Contrib/>, or download the entire package from the Products page.

Neal

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Quartus Forth update 1.2.5R sent out!

**[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
Quartus Forth update 1.2.5R sent out!**

By [Neal Bridges](#) on Monday, October 25, 1999 - 08:59 pm:

Version 1.2.5R has just been sent out to all registered users. The key change is that this version handles registration codes properly under OS 3.3. In addition, code space is expanded considerably, and the number of definitions that can be exported to a stand-alone app has been raised by 33% to 500.

If you are a registered user and for some reason do not receive the update, email me and I'll get it out to you right away.

Neal

By [Stephen Hutchison](#) on Saturday, November 20, 1999 - 05:55 am:

Using Q4th 1.2.1 (not registered) attempting to do the tutorial for Q4th + RsrcEdit to build apps.
RsrcEdit is Beta 0.998 and OS is 3.3.0

Hello World application A works fine.
Hello World application B (with 'About' window) fails with a memory fault:

MemoryMgrNew.c, Line:4165, NULL Handle.

Reset pin is then required.

Is this one of the manifestations of the resource bug? It's darned annoying. It also makes me nervous that apps built with previous versions of Q4th might die at will on OS 3.3.

By [esc](#) on Saturday, November 20, 1999 - 07:44 am:

No guarantees though, but at least all my stuff compiled under OS3.0 or OS 3.1 runs also under OS3.3. The Quartus upgrade for registered users deals only with registration code recognition, besides the enhanced word capacity.

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Saturday, November 20, 1999 - 08:42 am:

Stephen, I've encountered no problems such as you describe moving to OS 3.3. If you'd like to send me your problem sources, I'd be happy to see what the problem might be.

Neal

By [Neal Bridges \(Nbridges\)](#) on Saturday, November 20, 1999 - 12:50 pm:

By the way -- RsrcEdit is now up to version 1.005. I'd be curious to know if the problems you're encountering happen with the newer version.

Neal

By [Stephen Hutchison](#) on Sunday, November 21, 1999 - 04:09 am:

Hm. The newest version of RsrcEdit I was able to find that would download was the 0.998 beta -- the website was unresponsive. I'll look again. The sources are exactly as provided in the tutorial, which I found in your resources here.

By [Neal Bridges \(Nbridges\)](#) on Sunday, November 21, 1999 - 12:13 pm:

RsrcEdit 1.007 is at <http://www.individeo.net/RsrcEdit.html>. I'd like to see a copy of the resource database you created, to see exactly where the problem occurs; possibly the older version of RsrcEdit may sometimes have mis-created the resources in question.

Neal

By [Stephen Hutchison](#) on Sunday, November 21, 1999 - 06:04 pm:

How do I get such a thing to you?

By [Neal Bridges \(Nbridges\)](#) on Sunday, November 21, 1999 - 07:31 pm:

You can set the backup bit on the resources you have created, HotSync, and they will be exported to your desktop system (in c:\palm\username\backup). Then you can email them to me.

It's very possible that the older version of RsrcEdit is having trouble under OS3.3. I suggest that you try creating your resources with the newer version and see what happens. If you have trouble downloading it, mail me and I'll send it to you directly.

Neal

By [Stephen Hutchison](#) on Monday, November 22, 1999 - 04:21 am:

I tried with the latest, 1.007, version of RsrcEdit, and got the same problem.

I'll mail it tomorrow from work.

By [Stephen Hutchison](#) on Monday, November 29, 1999 - 09:33 pm:

I sent the failing files on the 23d, did they ever get there?

By [Neal Bridges \(Nbridges\)](#) on Monday, November 29, 1999 - 10:17 pm:

They did, Stephen. Sorry for the delay, other matters loomed large.

Neal

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Another DO LOOP question - compile mode

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Another DO LOOP question - compile mode

By [Barry Ekstrand](#) on Monday, October 25, 1999 - 06:26 pm:

Is there any difference in running a DO LOOP code module in interpretive vs. compiled mode? I have worked out the loop the way I need in interpretive mode and cut/pasted in the main program, compiled it and find it acts like it is not running the loop (one pass only??). I cannot find any difference that would cause it - the main difference between the 2 attempts is that in interpretive mode I hard set the values of the variables, and in the compiled version the program takes the values from entry into fields - including the value of the loop limit. I am using the same values for all variables in both cases, and the variable types are the same.

Any thoughts?

Regards,

Barry

By [Neal Bridges](#) on Monday, October 25, 1999 - 06:42 pm:

Well, DO..LOOP must always be compiled, that is, within a colon definition. There is however no difference between a definition executed at the console, and one executed in a stand-alone app. Can you show me the relevant snippet of code?

Neal

By [Neal Bridges](#) on Tuesday, October 26, 1999 - 12:03 pm:

By the way Barry, I just realized I didn't follow up on that 'extra character' problem you were having -- my apologies. I'll get on it.

Neal

By [Barry Ekstrand](#) on Tuesday, October 26, 1999 - 01:42 pm:

Neal,

I never have figured that one out, but I did find that if I wrote a string value to the memo as the last thing (rather than finishing by writing a numeric value) then the extra character doesn't appear. My actual programming needs are to end with a string, so it isn't critical, but I would like to understand what is going on.

Barry

By [Neal Bridges](#) on Tuesday, October 26, 1999 - 01:47 pm:

I'll let you know; I have a hunch already.

Neal

By [Barry Ekstrand](#) on Tuesday, October 26, 1999 - 01:50 pm:

On the DO..LOOP issue, I posted this morning but it looks like it got lost somehow, so here it is again. I found my error <cough, cough> - I had used a field entry routine that converted the entry to a float, then assigned the value of the loop limit as a single cell value. Small wonder the loop didn't seem to run! <red face> I made the simple correction and it runs as expected not.

I looked at the code more times than I care to admit without seeing it. After putting it down for a couple of hours I picked it up and finally saw the mistake.

Apologies for posting when I should have found the mistake, but hopefully it will keep another novice from having the same error (at least, I'll take solace in the belief that I might not be the ONLY one to make such a goof!).

Barry

By [Neal Bridges](#) on Tuesday, October 26, 1999 - 01:59 pm:

It's important to confirm the posting -- the first 'Preview/Post' takes you to a second panel where you confirm the entered text. I've lost a couple that way myself, by forgetting to confirm.

Glad you found the error -- it happens to all of us :)

Neal

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A tip for determining the current numerical BASE

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): A tip for determining the current numerical BASE](#)

By [Neal Bridges](#) on Monday, October 25, 1999 - 01:06 am:

If you do

```
base @ .
```

you'll always see '10' displayed no matter what base you're using -- hex, decimal, octal, etc. This is obvious if you consider it, but not convenient if you're at the console and wonder what the current base is. A trick to display the base more meaningfully is:

```
: .base ( -- ) base @ 1- . ;
```

This function displays '9' when in decimal, 'F' when in hex, '7' when in octal, '1' when in binary, etc.

Neal

By [Erwin Schomburg](#) on Monday, October 25, 1999 - 07:41 am:

You just put a lid on my favorite of the many pitfalls that serve to distinguish the "initiated" from the "no clue" people. 8-)

```
: .base ( --- ) base @ dup decimal . base ! ;
```

is my way to get to see whats on.

May the Forth be with you!

/Erwin

By [Neal Bridges](#) on Monday, October 25, 1999 - 08:45 am:

That's another good .base definition. I prefer the '1-' method I posted, because it also gives a reminder of what the highest digit allowed in the current base.

Neal

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1994 ANSI Forth

Quartus Handheld Software: Discussion Forum: Quartus Forth (PalmOS version): 1994 ANSI Forth

By **Raul Perez** on **Friday, October 22, 1999 - 05:50 pm:**

I was reading the 1994 ANSI Forth printout I picked up somewhere.
It mentions some Forth words that seemed useful but they weren't on the Quartus implementation.

I even said

```
include core-ext
```

but it didn't find them.

are ENVIRONMENT? [IF] [ELSE] and [THEN]
not as useful as they seem to be ?

And the ANSI standard doesn't even tell you what
EVALUATE is supposed to do. (Though it makes a weird printout in directmode)

Continuing to learn...

By **Neal Bridges** on **Friday, October 22, 1999 - 06:55 pm:**

ENVIRONMENT is provided in *environment.txt*. [IF] [ELSE] and [THEN] are provided in *tools-ext.txt*.

EVALUATE is certainly in the Standard -- let me know if it's confusing, I'll go over it in detail for you.

Neal

By **Raul Perez** on **Monday, October 25, 1999 - 08:21 pm:**

Thanks. I found them. I'll look again at the standard, but all I saw was a description of the name, not what it does.

By **Neal Bridges** on **Monday, October 25, 1999 - 08:45 pm:**

Here's the definition, copied from the Standard:

6.1.1360 EVALUATE CORE
(**i*x c-addr u -- j*x**)

Save the current input source specification. Store minus-one (-1) in SOURCE-ID if it is present. Make the string described by c-addr and u both the input source and input buffer, set >IN to zero, and interpret. When the parse area is empty, restore the prior input source specification. Other stack effects are due to the words EVALUATED.

This is a fancy way of saying it interprets the text in the string you pass it.

Neal

By [Erwin Schomburg](#) on Tuesday, October 26, 1999 - 04:10 am:

There is a sample on its usage in the library, see docinc.txt.

May the Forth be with you!

/Erwin

By [Carsten Eckelmann](#) on Tuesday, October 26, 1999 - 09:22 am:

This is a newbie question:

what is the QF equivalent for "SEE"? I started with Leo Wong's SimpleForth tutorial and got halted in the 4th lesson :(

Carsten

By [Neal Bridges](#) on Tuesday, October 26, 1999 - 09:27 am:

SEE is in the *disasm.zip* module, in the [Quartus Forth Library](#).

Neal

By Raul Perez on Thursday, October 28, 1999 - 07:17 pm:

I found out why I couldn't find the definition of EVALUATE. I was looking in the Appendix A definition of the word instead of the main part of the standard.

Sigh. I wondered why discussion of whether to use EVAL vs. EVALUATE vs. INTERPRET was important.

By Raul Perez on Monday, November 1, 1999 - 09:03 am:

I tried using the Simple Forth tutorial this weekend, and tried to use their example of MINE ?

but it doesn't work. I'm a rank newbie, I know, but I didn't expect to be stopped on the first lesson. I searched for : ? in the memopad, thinking I had to include something to define the question-mark command, but I didn't find anything. Am I just clueless, or is the tutorial using something that Quartus doesn't support?

By [Neal Bridges](#) on Monday, November 1, 1999 - 09:17 am:

'?' is a Standard word that isn't in the Quartus Forth kernel. It's very simple. Define it like this:

: ? @ . ;

Neal

By Raul Perez on Monday, November 1, 1999 - 09:52 am:

I added it to my tools-ext memo. Thanks!

By [Neal Bridges](#) on Monday, November 1, 1999 - 11:08 am:

I recommend you add it into a non-library file; that way, should any changes be made in the official *tools-ext* file, you won't have to add your additions back in.

Neal

By Douglas Atique on Friday, November 19, 1999 - 12:32 pm:

I am trying to learn Forth on the fly, as a good interactive environment suggests. So I decided to import the FICL object model into Quartus. It seems that porting is a matter of including a file, looking for words that are not defined and searching them on other files to include before the one or defining them. In one of these cycles, I came across the word (local) which seems to be on the ANS standard but is undefined on Quartus. Any suggestions of where it hides?

Regards,
Douglas

By [Neal Bridges \(Nbridges\)](#) on Friday, November 19, 1999 - 02:01 pm:

Quartus does not have the LOCAL wordset. There is a simple implementation of locals in *tinylocals.txt*, in the File Area.

Beware, however, of the FICL object model -- it depends on the existence of the dictionary for method lookup, and hence will not work in stand-alone apps (where there is no dictionary). Another object model might better suit your needs. Look for Bernd Paysn's 14-line OOF, for starters.

Neal

By Douglas Atique on Monday, November 22, 1999 - 08:32 am:

I have been looking at the FICL sources and some articles and release notes. I read that FICL allocates objects on the dictionary, because it doesn't support heap allocation. Is that THE problem, a problem or not at all?

Thanks for the hint of OOF. I am collecting many OO implementations for Forth.

What I liked most in the FICL model is the orientation towards "everything is an object", including classes and the metaclass. Also the existence of an operator for late binding and

another for early binding gives a lot of insight into the corresponding OO concepts for Forth programmers (in fact I got a lot and I am not more than a Forth newbie).

By the way, do you plan to support all the wordsets of ANS Forth?

Regards,
Douglas

By [Neal Bridges \(Nbridges\)](#) on Monday, November 22, 1999 - 09:27 am:

The problem is that it relies on the dictionary, rather than lookup tables, to late-bind. This is fine from within the Forth console, but stand-alone apps do not contain a dictionary, and so it fails.

The only wordset not represented at all in Quartus Forth is the LOCAL wordset. I may at some point implement it, but there is little demand, and the *tinylocals.txt* library file provides for a simple form of the same functionality -- 8 locals with fixed names.

Neal

By Douglas Atique on Monday, November 22, 1999 - 11:03 am:

Let me see, the principle behind late binding is that a late-bound method invocation compiles to a method lookup word that will be executed at runtime, taking the addresses of the class, of the instance and of the method selector (a string) on the stack. But this lookup routine searches the dictionary, am I right? The difference between the Forth interpreter and the stand-alone app is the existence or lack of the dictionary, but the words should be there anyway, shouldn't they? I mean, if instead of searching the dictionary, the lookup routine searches a table containing the addresses, or xt (if available), of the words then it can work in a stand-alone app. Is this right?

By [Neal Bridges \(Nbridges\)](#) on Monday, November 22, 1999 - 11:23 am:

You are right. A lookup method that did not depend upon the presence of the dictionary would work fine in stand-alone apps. You'll find most OO modules behave in this way.

Neal

By Douglas Atique on Tuesday, November 23, 1999 - 09:01 am:

How about that object model available in Quartus file area? Does it work with stand-alone apps? It seems to late bind the method invocations.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 23, 1999 - 09:56 am:

I haven't made much use of that contributed code; I'd be interested to know what comes of any experiments you might try.

Neal

By Douglas Atique on Tuesday, November 23, 1999 - 12:54 pm:

Oops! I have just noticed that in this object model (OO PocketForth) methods are globally

visible words. In the FICL model, instead, methods are implemented with wordlists (I don't know exactly how that works yet) so that a method defined for a class A won't be visible in any other classes unless those classes B that define a method with the same name and those classes C that are subclasses of the A class.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 23, 1999 - 12:59 pm:

Wordlists are one way to handle compile-time namespaces in an OO system, yes. That's not the problem with FICL and Quartus Forth -- the problem is the late-binding dictionary lookup, as we discussed earlier.

I spoke with FICL's author just after his article appeared in Dr. Dobbs, and he said he was working on another version that does not depend on the dictionary. You might want to drop him a note.

Neal

By Douglas Atique on Tuesday, November 23, 1999 - 02:22 pm:

Thanks for the hint, Neal.

Douglas

By Douglas Atique on Wednesday, November 24, 1999 - 08:53 am:

Really, the use of wordlists is not a problem in FICL, but the lack of them in the OO PocketForth is. I meant that I would like this feature in a model that could run on Quartus Forth.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 24, 1999 - 04:36 pm:

I am sure such a creature exists. A posting on comp.lang.forth might well turn something Standard up that could easily be adapted -- or the OO from PocketForth might be modified in such a manner.

Neal

By [Jim Deakin](#) on Friday, November 26, 1999 - 10:07 am:

Could you just clarify something please?

If I wrote a program which used wordlists, and compiled it (which I can't as I've not yet registered), I understand that I wouldn't be able to use the normal dictionary searches, but would I still be able to use the normal dictionary tools on my own wordlists? Or is the word-header information dumped to save space?

By [Neal Bridges \(Nbridges\)](#) on Friday, November 26, 1999 - 10:43 am:

Correct. Stand-alone apps have no headers on the exported functions; also there are no dictionary hash tables, etc. You can, however, use 'generate-symbols' to generate debugging names on each exported function for profiling and debugging using the Palm OS Emulator.

Neal

By **Douglas Atique** on **Monday, December 13, 1999 - 03:56 pm:**

Neal,

I have been reading *Object-Oriented Forth (Pountain)* and found about some non-ANS words, namely

BODY>

>LINK

LINK>

>NAME

NAME>

etc., words that access individual fields of a word's header. As far as I read, except for **>BODY**, they are really not standard. Does Quartus Forth provide any of these extensions? Could I implement any of them easily?

By [Neal Bridges \(Nbridges\)](#) on **Monday, December 13, 1999 - 04:18 pm:**

Not easily, no. And the resulting code would not be portable to other ANS systems. Pountain has some good ideas in that book, but the methods he uses don't fly in the ANS Standard world. I recommend you look for other ways to implement what he talks about -- there are ways to create wordlists and seal them using ANS methods that would be preferable.

Neal

By [Ed Mittelstedt](#) on **Wednesday, February 23, 2000 - 03:23 pm:**

How would one "seal" a wordlist?

By [Neal Bridges \(Nbridges\)](#) on **Wednesday, February 23, 2000 - 04:40 pm:**

Once a wordlist is taken out of the search-order, the definitions in that wordlist are inaccessible until such time as it is in the search-order again. Is that what you're after?

Neal

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Palm Explorer ?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Palm Explorer ?](#)

By **Raul Perez** on Thursday, October 21, 1999 - 04:53 pm:

Is there something like a Windows Resource Editor or an explorer.exe that gives you info about what is stored on the Palm? I know the Memory box gives you very cursory information, but I was thinking of a tool that tells you more things, like what resources are there, what they look like, etc.

Would this be very hard to write in Forth?

I'm very much a newbie, but want to know more about my palm. (I have a Palm Professional btw)

By **Ron Doerfler** on Thursday, October 21, 1999 - 06:30 pm:

Hi Raul,

I think most all of us use a program called RsrcEdit (Onboard Resource Editor) to view and create resources right on the Palm. It's just great, and allows us to write programs using resources right on the Palm, anywhere we are. You can also use it to copy and paste forms, etc. from other programs into your own. It can be downloaded at

<http://www.individeo.net/RsrcEdit.html>

Steven Donahue wrote a tutorial on writing Quartus Forth apps using RsrcEdit to create resources. It's called Tutorial-v1.02.zip and can be downloaded from the Contributed Quartus File Area at

<http://www.quartus.net/files/PalmOS/Forth/Contrib/>

It's very helpful and highly recommended.

Cheers,

Ron

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Comparison operators and double cell values

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Comparison operators and double cell values](#)

By [Barry Ekstrand](#) on Wednesday, October 20, 1999 - 09:40 am:

Is there a boolean NOT in Quartus? I need to perform a GREATER THAN comparison on a double cell value, and since there isn't a D> word I thought using D< NOT IF would do the trick, but I'm unable to find NOT in the libraries. Am I lost here?

Barry Ekstrand

By [Jim Deakin](#) on Wednesday, October 20, 1999 - 10:15 am:

Use INVERT for a 1's complement conversion.

By [ESC](#) on Wednesday, October 20, 1999 - 11:08 am:

Another way is to use "D< 0= IF"

May the Forth be with you!

/Erwin

By [Barry Ekstrand](#) on Wednesday, October 20, 1999 - 02:12 pm:

Jim & Erwin,

Thanks to both of you for your responses, I learned from both (assuming I have deduced the effects correctly!). Using Jim's "1's complement" approach, I see that INVERT makes the larger of 2 numbers smaller than the other by making a "bigger negative" so to speak (assuming they were both positive), and then I can use the D< word.

Using Erwin's approach, 0= will return true (-1) if there is a value of 0 on the stack or false (0) if there is not, so it effectively reverses the truth test of D<. By testing for equality first with D= and then with D< 0=, I have done what a D> word would have.

Both of these approaches make great use of programming logic. Thanks to both of you for helping this neophyte to take another small step on the journey!

Barry Ekstrand

By [Jim Deakin](#) on Thursday, October 21, 1999 - 06:38 am:

I hadn't read your original note thoroughly enough. Invert is a boolean NOT, which you mentioned in your first sentence. What you really wanted was a conventional logic 'not' (There must be another name for common sense logic!). Erwin's method is the way to go.

Cheers

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DO LOOP question

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

DO LOOP question

By [Barry Ekstrand](#) on Wednesday, October 20, 1999 - 08:57 am:

I have a need to do an iterative calculation, and obviously DO LOOP is the means to construct it. The problem I have is that I potentially need to run the loop as many as 100,000 iterations or more. I understand the DO LOOP parameters allow single cell values for index and limit, which means I can run the loop a maximum of 65,536 iterations. Is there any way around this to increase the number of iterations allowable? Any help will be appreciated.

Regards,

Barry Ekstrand

By [Jim Deakin](#) on Wednesday, October 20, 1999 - 10:07 am:

The simple way would be to run a loop within a loop, then use i and j to get the inner and outer loop indices respectively. That way your inner loop could run to (say) 50,000 and your outer loop could tell you how many 50,000's you've counted. If an exact number is needed, run a final loop for however many the remainder is.

By [Barry Ekstrand](#) on Wednesday, October 20, 1999 - 11:12 am:

Jim,

A simple and elegant approach - thanks for the tip! I assume there isn't a limit to the number of nested loops, is that right? If so, this will easily take care of me, 4 nests of 50,000 iterations should be more than I need.

Barry Ekstrand

By [ESC](#) on Wednesday, October 20, 1999 - 11:24 am:

You could define "2DO" and "2LOOP" etc., but you could also test the loop boundaries directly, like in

```
: test ( upb. lob. --- )
1. d+
\ do what you want to iterate
2over 2over d< 0= until
2drop 2drop ;
```

/Erwin

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LstSetListChoices

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): LstSetListChoices](#)

By [Marc](#) on Tuesday, October 19, 1999 - 05:11 am:

Has anyone an example on using
LstSetListChoices

I can make it to work, there was a thread on this
subject in the old discussion forum but I cannot
get a hand on it.

Anyhow here is the sample code I use

```
1200 ShowForm
z" toto" drop >abs memoLstRefs 2!
1.
memoLstRefs >abs
1201
GetObjectPtr ( objectid -- ptr. )
LstSetListChoices ( &numItems. &itemsText. &list. -- )
begin ekey until
begin ekey until
(bye)
```

The only effect I get is to make the list empty.

Thanks for any advise.

Marc

By [Trevor Steele](#) on Tuesday, October 19, 1999 - 08:07 am:

Hi Marc

The following small change will make your code work:

```
1200 ShowForm
z" toto" drop >abs memoLstRefs 2!
0 0 1
memoLstRefs >abs 1201
GetObjectPtr ( objectid -- ptr. )
```

```
LstSetListChoices ( &numItems. &itemsText.&list. -- )  
begin ekey until  
begin ekey until  
(bye) ;
```

The explanation is as follows:

There is a small error in the stack diagram for the API call. It shows a pointer to the number of items when in fact it should be a simple unsigned integer. Hence the chance to a 1 from the 1. The other two zero's are to keep the API call happy for what reason I'm not quite sure other than without them the API call protests.

I hope this helps you. If you have any further queries I will do my best to help

Best regards

Trevor

By Raul Perez on Thursday, October 21, 1999 - 04:47 pm:

First thing, I'm very very new to this...

I took the hello example and added two commands to a line at the end of it :

1200 ShowForm

and got an error box:

```
HwrRes.c, Line: 69 Form  
rsrc not found
```

```
((Reset))
```

Is there a way to find out what resources you have ? I ended up resetting the Palm, but nothing looked broken...

BTW: hello looks like:

```
\ hello
```

```
: go page ." Hello " ;  
1200 ShowForm  
go
```

**PS: is there a way to write 'safe' programs that check for the things they intend on the stack?
Or is that against the Forth philosophy ?**

By [Neal Bridges](#) on Thursday, October 21, 1999 - 10:19 pm:

Definitely download RsrcEdit; it lets you see exactly what resources are available to you.

Also check out *safe.txt* in the library; it does stack checking of parameters for a number of Forth functions.

Neal

By [ESC](#) on Friday, October 22, 1999 - 04:21 am:

While you are mentioning it, there is a new version of RsrcEdit out (1.004).

By [Trevor Steele](#) on Monday, October 25, 1999 - 12:13 pm:

Hi again Marc

The change I suggested of course will not make your code work!! I left out the vital line to draw the list. Hopefully the following should work

```
1200 ShowForm  
z" toto" drop >abs memoLstRefs 2!  
0 0 1  
memoLstRefs >abs  
1201  
GetObjectPtr ( objectid -- ptr. )  
LstSetListChoices ( &numItems. &itemsText.&list. -- )  
1201 GetObjectptr LstDrawList  
begin ekey until  
begin ekey until  
(bye) ;
```

**That's what I get for hastily testing my code on POSE and then not typing my corrections properly into the posting. Sorry for any inconvenience caused :-(.
Let me know if this works OK.**

Best Regards

Trevor

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Popup Windows and String Entry

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
Popup Windows and String Entry

By [Barry Ekstrand](#) on Monday, October 18, 1999 - 05:31 pm:

I have a need to allow the user of an app to provide string input along the way, and I would like this to occur by a 'window' popping up with a field for string entry. I assume the way to do this is with another form, sized smaller than the Palm screen so it looks like a window. After putting the field on the form, I am concerned that the user will have difficulty correcting his entry (if desired) before submitting it because the field's visible size is smaller than the size allowed for the string entry. It seems that the field "scrolls right" to allow the entry, but backing up appears troublesome. Is there any trick to allow the field to 'wrap around' onto multiple lines on the form? Is there another approach I should consider? Any help is appreciated.

Regards,

Barry Ekstrand

By [Neal Bridges](#) on Monday, October 18, 1999 - 05:44 pm:

Have a look at *input.txt*, provided in the library distribution as "input". That module doesn't provide scrolling multi-line input; unfortunately the PalmOS doesn't provide a simple multi-line input object complete with scrollbars. Scrollbars have to be handled by the application.

If you copy and modify the resources in *qrsrc.zip*, though, you can create your own 'input' routine that at least allows several lines of text, which may well suffice. If you need to go whole hog, you can set up and manage your own scrollbars also.

Neal

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String Variables?

Quartus Handheld Software: Discussion Forum: Quartus Forth (PalmOS version): String Variables?

By [Ron Doerfler](#) on Sunday, October 17, 1999 - 10:12 pm:

Hi Neal,

I've written a fair bit of code in Tcl/TK, and that language (actually the Tcl part of it) handles strings **so** nicely. Variables can either be set to a string or a number--the contents are interpreted at the time an operation is performed with the variable. There are also lists, which are in effect arrays of strings. You can, for example, read a line of text from a file into a variable, split the variable into a list using any specified delimiter, set another variable to a string in the list by giving an index, join this variable to others into a concatenated string with a given separator, and then write this variable out as a text line into a file. This is just great for extracting and creating fields in, say, a flat ASCII database such as CSV files, but it's also nice whenever you are reading from a file (or memo here on the PalmPilot).

It seems to me that Forth doesn't handle strings that nicely. However, the CREATE..DOES> mechanism could be used to make a string variable (STRING <name>) that would take c-addr and the count as input and allocate the space; then when <name> is executed, the string c-addr and count could be returned. So you could say:

```
string >mytext
s" test of string contents" >mytext
>mytext type
```

Then there could be a list construct created, similar to the array construct but with movable address offsets of its members since strings of different lengths could be inserted. Then JOIN and SPLIT could be written, etc.

Does this sort of thing exist anywhere? Do you agree that this could be useful, or am I just not knowledgeable enough yet on strings in Forth to appreciate what can be done?

Thanks!

Ron
(surprised, actually, that the word STRING isn't even used in ANS Forth)

By [Neal Bridges](#) on Sunday, October 17, 1999 - 10:50 pm:

You can certainly create such a string mechanism quite easily, and such things have been done -- I'd have a look at the Forth archive at Taygeta for a start.

Strings are mentioned in the Standard; in fact there's a STRING wordset with some handy tools.

Older Forth standards worked heavily with 'counted' strings, where the length of a string was stored as its first byte, and references to the string were simply the address of this first byte; these are sometimes handy but often limiting, so the '94 Standard has shifted to the use of 'two-cell' strings, where a string is represented by its address and length. This 'two-cell' method gives far greater flexibility.

A dynamic string package, such as you suggest, requires dynamic memory allocation; not all Forths have this, but certainly Quartus Forth does. For backward compatibility, though, remember that dynamic memory is a precious resource, especially in earlier models.

Lists would be a simple extension of a dynamic string package; likewise hashes (a la Perl) could be added quite easily.

As regards translation of numbers to strings and back; certainly this is trivial from a programming standpoint, but in a resource-constrained environment I suggest you try to avoid the overhead of doing it unnecessarily.

Have a look at some of the work that has been done; let me know if you find anything worth bringing over into our camp!

Neal

By [Raul Perez](#) on Thursday, October 28, 1999 - 07:20 pm:

Just for other newbies like me, I found out that S" doesn't work if you type it into the command line of Quartus Forth. You have to put it in a colon definition of some word. Now I know what it means when it says there are no Interpreter semantics for the word.

Could quartus warn newbies about this if you included a newbie package?
or would it just complicate life?
or is it not even possible ?

By [Neal Bridges](#) on Thursday, October 28, 1999 - 07:34 pm:

The *file.txt* module provides a S" that works outside of a colon definition.

Neal

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PalmOS 3.3 -- Quartus Forth update available

**[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
PalmOS 3.3 -- Quartus Forth update available**

By [Neal Bridges](#) on Sunday, October 17, 1999 - 01:18 pm:

If any registered users are testing PalmOS 3.3, let me know -- I'll send you an updated version of Quartus Forth that handles the registration code properly under the new version of the operating system.

This will be going out as a general update shortly; this announcement is for anyone who needs it right away.

Neal

By [BobC](#) on Monday, October 18, 1999 - 11:13 pm:

I just finished upgrading my 5000 + 2 MB Upgrade Card to PalmOS 3.3, and the process went flawlessly.

The only reason I bothered with the upgrade was the changes to the serial API that will allow me to use the Dragonball UART (serial port) and the Upgrade Card UART (IR port) as completely independent devices (and at the same time).

My first "trial" application will be to use QF to turn my Palm into an expensive full-duplex bi-directional serial-to-IrDA converter. If all goes well, my old laptop (which lacks a good serial port) will be able to talk to my desktop (which lacks an IR port). If all goes REALLY well, I'll release it as freeware.

There are several uses for such an application: When the Palm is in its cradle, it can become an IR port merely by running my application and have any desired PC application talk to the appropriate serial port. This would allow people to talk to their IR-capable cell phones without having to buy an expensive serial cable. Two player PC games that would normally use a serial cable between two PCs can be played between a desktop and a laptop without wires.

Before I get too far along, does anybody have any recommendations or advice?

-BobC

By [Neal Bridges](#) on Monday, October 18, 1999 - 11:28 pm:

An initial thought: I don't believe you can do full-duplex with the built-in IR on the Palm.

Neal

By [BobC](#) on Tuesday, October 19, 1999 - 03:01 am:

Doh! Of course not: The transmitter and receiver are in the same module.

Well, that just makes the problem MUCH easier, even if I do keep the serial port full duplex (to handle data rate differences).

By [Alex](#) on Thursday, October 21, 1999 - 05:34 pm:

Hi,

I have a Vx using OS 3.3. Should I wait for the Quartus Forth update to try out the software before registering or am I able to use the version I just downloaded?

Thanks, Alex

By [E. Ross Helton](#) on Thursday, October 21, 1999 - 07:28 pm:

Hi Alex;

The version of Quartus you downloaded with work on any Pilot or Visor

Make it a good day!

Ross

By [LarryDaniels](#) on Friday, October 22, 1999 - 02:53 am:

I downloaded the new version 3.3 for my new Palm V. Anything I need to do or know regarding you software with this new update?... and I installed your LightHack thing that inverts the lighting... I'm having a problem. I want to change it back to lighted background and black letters/numbers but can't seem to do so... tried the pen stroke suggested and all it did was turn on Graffiti... and what about that .8 thing. Tried that too and it didn't work. Am I doing something wrong? Help would be greatly appreciated from someone. Any ideas. Thanks. Larry (Larry@Daniels.net)

By [ESC](#) on Friday, October 22, 1999 - 04:25 am:

The OS3.3 conformant upgrade of Quartus only affects (is required for) registered users to let them (continue to) compile stand alone apps. The evaluation versions are not affected by the OS upgrade.

May the Forth be with you!

/Erwin

By [Neal Bridges](#) on Friday, October 22, 1999 - 09:11 am:

As regards LightHack -- I presume you've installed HackMaster also. If not, please download it and install it, as it's required to activate LightHack (and all other HackMaster hacks). It's available at [DaggerWare](#).

Neal

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Fields, ctlRepeatEvent and Swatch

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)
Fields, ctlRepeatEvent and Swatch

By [Folkmar](#) on Monday, October 11, 1999 - 06:31 pm:

Dear Neal,

I think you will be the person to answer the question below, however, it might be interesting to others.

I was studying carefully the source-code of Swatch (which I haven't found anymore at this new site, by the way). Especially your handling of the repeat-buttons on the Swatch converter form for in- and decreasing the Swatch time field were of interest to me, since I wanted to do something like that myself.

While trying the repeat buttons, the stand-alone version from the web worked fine. Then I compiled the code on board and gave the repeat buttons a test, they did not work. Once you hold down a repeat button, the Swatch time is de- or increased by one, a cursor appears and nothing happens any more until you release the button. No repeating.

Debugging (kind of) the source code led me to the following explanation: The `ctlRepeatEvent` calls `'cbmt-update'` which calls `'#>SwatchField'`. There the word `'string>Field'` from the library is called which ends with `'FlushQueue'` eating all my `ctlRepeatEvents` until I release the button. For some reason this flushing appears to be necessary, all words in `'Fields.txt'` end with it and removing the word only leads to different, quite as serious problems.

So, I guess you have changed some code between compiling the stand-alone and providing the source-code. Could you please explain how to fix this problem and what you did originally in the compiled version? I would really like to learn how to do this kind of thing with Quartus.

Versions of files I have used:

'Fields' has the date 99.2.8 7:51pm

'Swatch' has the date 99.1.30 3:19pm

All the best, Folkmar

By [Neal Bridges](#) on Monday, October 11, 1999 - 08:52 pm:

Thanks for bringing that to my attention. I shall backtrack versions of Quartus Forth and see where the problem lies. At some juncture I introduced the `FlushQueue` code into `Fields.txt`, but didn't notice it had had a negative effect on repeating Ctl messages.

Neal

By Raul Perez on Thursday, October 28, 1999 - 07:22 pm:

Is this code useful to newbies like the DUCO code is? or is it just a special purpose program that would be confusing?

By [Neal Bridges](#) on Thursday, October 28, 1999 - 07:34 pm:

What code are you referring to exactly, Raul?

Neal

By Raul Perez on Monday, November 1, 1999 - 09:06 am:

Folkmar was saying that he was studying carefully the source-code of Swatch (which he hadn't found anymore at this new site). I tried looking, and didn't see it myself.

Speaking of this new site, will the new release of quartus have this address in the about box instead of the old address?

By [Neal Bridges](#) on Monday, November 1, 1999 - 09:25 am:

Ah! The source did not make the transition, I see. Thanks, I missed that earlier. I'll fix it.

The About box will indeed be updated in all products.

Neal

By [Neal Bridges](#) on Monday, November 1, 1999 - 09:32 am:

The source is now available in the Contrib file area -- or find it with a quick search in the search engine for "swatch source".

Neal

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A common signature?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): A common signature?](#)

By [Hans Nordstrom](#) on Monday, October 11, 1999 - 03:37 pm:

I've looked at different programs as .PRC files. I noticed then that some programs made by Pila tools have an eye-catching addition to the file. In the namespace, the 32 first chars, they've borrowed the last four of these to sneak in the name Pila there.

Then it struck me, why not make the same for Quartus generated programs.

Put the signature, Q4th, in the last four chars of the namespace. I think all of the Quartus society would gladly give away that space to have a common signature.

PS. I understand that the work to do this is dropped on Neal's desk. I hope it's not to much work. Maybe it could get into version 2 of Quartus? DS.

By [Neal Bridges](#) on Tuesday, October 12, 1999 - 09:30 am:

Hans, a good idea, and easily implemented. Thanks!

Neal

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Forth and CGI

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Forth and CGI](#)

By [Neal Bridges](#) on Monday, October 11, 1999 - 01:01 pm:

A point of interest -- if you look at the bottom of the [Quartus Home Page](#) you'll see the date displayed in Roman numerals. This is done dynamically via server-side CGI written in Forth, using gforth and the Quartus Forth library module, "roman.txt".

Neal

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Handspring Visor, anyone?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Handspring Visor, anyone?](#)

By [BobC](#) on Monday, October 11, 1999 - 07:16 am:

I just downloaded what few specs are available for the Handspring Visor, and I've pretty much decided I'll make the jump as soon as I know the Visor is truly "ready for prime time".

The Visor "Springboard" expansion interface greatly simplifies the agony I've been going through trying to mux several hardware devices into the Palm serial port. Using Springboards, I can put everything in one module and just give each hardware device its own address area. Since the Springboard bus operates at the full speed of the Dragonball memory bus, the CPU cannot detect any performance difference between internal and external hardware. Plus, Springboard supports live insertion and removal, with full CPU notification and peripheral initialization.

Best of all, I can connect my protoboard to the Springboard connector by using a common PCMCIA adapter/connector. Way too easy. Do you realize it would take only a simple (but not trivial) adapter to connect any PCMCIA device to the Visor?

Does anyone know if there will be any problem with QF on the Visor?

How hard will it be to add the Handspring API extensions to QF?

-BobC

By [Neal Bridges](#) on Monday, October 11, 1999 - 08:58 am:

Quartus Forth should run without any trouble on the Visor; I'll be adding any new API calls to the built-in list. Looking forward to playing with it myself!

Neal

By [Winchell Chung](#) on Tuesday, December 21, 1999 - 11:11 am:

I just got my registered copy of Quartus last saturday.

However, I had read about one minor fly in the ointment for Visor developement in general. The Palm OS Emulator currently does not work with the Visor ROMs. Handspring is working on a Visor friendly version of POSE even as we speak.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 21, 1999 - 01:50 pm:

Quite right. The Visor OS is functionally identical to the 3.1 version of the Palm OS, so you can use POSE with that if you wish.

Neal

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If QF can save its state, I might not need stack switching...

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): If QF can save its state, I might not need stack switching...](#)

By [BobC](#) on Monday, October 11, 1999 - 06:50 am:

I was just looking over the process required to switch from one PalmOS task to another and back again. If QF were enhanced to save and restore its state to and from an appropriate database, then it would not be unreasonable to have a QF master program that would temporarily register itself as the launcher app, then be able to manage the naming of multiple QF state databases.

In effect, this would allow multiple QF programs to run completely independently. These programs could be clones with different initialization parameters, or completely different programs. If any data needed to be shared, there are several ways it can safely be done using PalmOS databases (or Memo files, or almost anything else).

The master program I mentioned could also be used to provide a true QF launch front end, where the user can select to restore any previous QF state, or just use the default state of a cold QF initialization.

Is this a better track to follow than stack switching? It certainly seems to offer more benefits, and may well have additional benefits I haven't fully thought through (such as on-the-fly state saving and the off-line debugging/analysis of saved states).

I have no real insight into what it would take to implement a state-preserving QF, but since the majority of PalmOS apps seem to do it, it should be a fairly well-known program feature.

State saving also has the advantage of moving multi-tasking functionality almost completely outside the QF domain and into the PalmOS domain, so if an end-user multitasking version of PalmOS ever appears, QF will be instantly ready for it.

So, how crazy am I?

By [Neal Bridges](#) on Monday, October 11, 1999 - 08:57 am:

Fairly crazy Bob, but nonetheless it's an interesting thought. I can't think of a specific application for what you're suggesting. I'll mull it over.

Neal

By [BobC](#) on Monday, October 11, 1999 - 04:31 pm:

My application involves getting input from multiple independent sensors, processing it in an asynchronous data-driven manner, then displaying it only when an update is needed.

To eliminate the need for the Palm to poll the hardware (and hopefully give the CPU time to

snooze now and then), each sensor will interrupt the CPU whenever its value has changed "enough" (a configurable setting). If a sensor is changing rapidly, and it is important to obtain readings as rapidly as possible, then sensor will be placed on a fast polling loop and will not be interrupt driven (thereby eliminating the interrupt overhead).

This time domain variability combined with access method choices (polled/interrupt) makes it a real pain to write one monolithic piece of software that will adequately manage each sensor.

Then there are the algorithms I need to process. First, each sensor needs to be dynamically compensated for various calibration errors, age and temperature factors. Next, the values will be combined in several algorithms on an as-needed (data-driven) basis.

It is impossible to determine, in advance, which sensor will need to be read next, including those in polling loops. Thus, it is also impossible to determine, in advance, when each data processing algorithm will need to be run.

My goal is to build an application that performs exactly the work required, and nothing more. That means a minimum number of CPU cycles will be used, thus maximizing the time the CPU can sleep and thereby maximize battery life.

With multitasking, I can hook one compensation task to each sensor, then use scoreboarding to determine when each of the various data processing tasks needs to run. The scoreboard is updated whenever new sensor data becomes available, and any appropriate processing task(s) can be fired at that time.

If a sensor needs to be read while a data processing task is running, the data processing must halt IMMEDIATELY, and the CPU must be given to the appropriate sensor processing task. When the scoreboard is updated, any new tasks to be fired will be added to a priority queue.

I have found no way to implement such dynamic processing within a single QF program (which is not too surprising, given that I am still very much a Forth newbie). If this were running on hardware with a wall plug, I'd just use fast polling and a few DFMs and be done with it. But on the Palm platform, I don't want my application to chew through a set of batteries in one day.

So, I see multitasking/multi-threading as a very good way to make it easy to save CPU cycles. While I may be a Forth newbie, I've been doing embedded real-time systems for 15 years. In one system for a small satellite, I had to run a full set of avionics and payload software on just 6 AA alkaline batteries for 6 months, so I've had to wrestle with every power management technique available.

And yes, I can place much of the required processing on an additional CPU dedicated to the sensors, but that would complicate the hardware design and greatly enlarge the total software effort. If possible, I want to have dead simple sensor hardware (I want anyone to be able to build it), and all software running on the Palm (to make it easier to maintain and distribute).

The Palm CPU has more than enough power to do all the work needed, in real time. I just need

to access that processing power in a more flexible way than either PalmOS or QF presently provide.

I think multitasking/multi-threading is the best way to go. Do you know of others I should be researching? I'm willing to pursue just about any idea, no matter how far out (obviously).

Thanks!

-BobC

By [Neal Bridges](#) on Monday, October 11, 1999 - 05:33 pm:

At first glance, I think I'd try a finite-state machine approach. Simpler, and easier to maintain.

Neal

By [BobC](#) on Tuesday, October 12, 1999 - 01:36 am:

I beg to differ, since the "simple" implementation would be a hierarchy of nested DFMs (more accurately, NDFMs or AFAs). Interrupting and saving calculations in progress to service sensors, then continuing with whatever calculation is most important at that point in time (often not the one that was interrupted) would require breaking long calculations into a series of discrete steps, between each of which any and all state information would have to be saved so that the DFM may be queried and the path of execution changed.

This would lead to an explosion of DFM states, since each itty-bitty portion of each calculation would have to have its state managed. How bad could this be? Well, no portion of any software operation should take longer to perform than the minimum sensor servicing request interarrival time + the minimum latency time (before sensor data is lost) for the worst case set (or sequence) of sensor inputs. This constraint must be met to ensure no sensor data can be lost AND all data can be processed.

Clearly, each "itty-bitty" part would be a single Forth word, leading to an explosion of entries in the dictionary (since that is the only way a large calculation can be broken up). Furthermore, the saving of the state between each part in the chain of parts forming a long calculation would have to be saved by the exiting part and loaded by the next part. This overhead, combined with the DFM processing, could possibly use more CPU horsepower than the application itself.

Multitasking and multi-threading (MT&MT) provide a very efficient way to eliminate the vast majority of the prior overhead. The complex DFM is replaced by a far simpler priority scheduler. The myriad state saves are replaced by the centralized task switching capability, and the many parts can be recombined into single words for each calculation, eliminating the dictionary overload.

For handling multiple interleaved asynchronous data and calculation streams, MT&MT beat DFMs and "algorithm dicing" every time. Furthermore, the task of debugging is greatly

simplified, since there is so much less to verify (fewer words and less code).

I'm assuming the only MT&MT support I have will be whatever I construct using whatever primitives you (Neal) choose to provide. Were I doing this project in C/C++, the MT&MT features I need would be done already, since C/C++ allows me to easily program down to the bare metal, and I have implemented several MT&MT kernels in the past. But why use C on the Palm when Forth is available? If I had detailed knowledge of the QF internals, I'm certain I could implement MT&MT in QF (with a bit more work, since C/C++ uses only one stack).

It seems odd that a "bare metal" language like Forth has somehow lost that capability in QF, at least where QF itself is concerned. Of course, this is due to the amount of information that is not shared with the QF community. And this, in turn, has lead to Neal's having to do all the high-level work on his own, with all users relegated to merely reporting bugs or asking for desired features. That is why Neal has been working so hard to get the "AddHoursToTheDay" word to compile: We can't help him modify QF itself.

With sufficient information concerning QF internals (with and without compilation), I'm certain I can implement a usable form of MT&MT in QF "user" space. Neal could then examine the resulting code, and incorporate any useful parts of it into future versions of QF, or just add it to the repository of contributed QF code. Without such information, I can only whine and moan and beg and argue and type...

-BobC

By [Neal Bridges](#) on Sunday, October 17, 1999 - 02:37 pm:

Thinking about this a bit, I'd suggest you set up routines hooked to the interrupts for your sensors, and buffer incoming data for each sensor -- much the way incoming serial data is handled by the OS. Then your 'foreground' processing task can simply wait for data to appear in the appropriate buffers, and calculate accordingly.

From what you've told me it looks like that solution would be simple and efficient. What do you think?

Neal

By [BobC](#) on Sunday, October 17, 1999 - 07:02 pm:

I think I did a fair job summarizing my needs in prior posts, but perhaps a more explicit list of the specific features of my application will help.

The application is an all-in-one instrument for soaring aircraft of all types (paraglider, hang glider, sailplane).

The raw sensors are:

Absolute Pressure

Relative Pressure
Instrument Temperature
Atmosphere Temperature
Atmosphere Humidity
Magnetic Heading (may be 3-axis magnetometer)
GPS (standard NMEA-183 data stream)
APRS data link (optional)
DGPS data link (future)

The hardware outputs are:

LCD graphic display
Audio indicators
APRS data link (optional)

The "internal" outputs are:

24 hour (minimum) detailed data log
Status and failure log

The calculations are:

Layer 0 - Sensor linearization and unit conversion
Sensor (and ADC) Temperature
External Temperature
Magnetic Vectors
Raw GPS Data

Layer 1 - Derived physical measurements
Atmospheric Pressure
Speed Pressure
Uncorrected Magnetic Heading
GPS Altitude (averaged)
Position (GPS, averaged)
Ground velocity (heading + speed, from GPS)

Layer 2 - Model-driven measurements
Pressure Altitude (per Standard Atmosphere Model)
Variometer (d/dt altitude)
Airspeed
Magnetic Declination (from Position + WGS model)
Magnetic Heading (declination corrected)

Layer 3 - High-Level Calculations

3.0 Weather

Wind Speed and Direction (vector difference of air velocity and ground velocity)

Location of Thermal Inversion (top of thermals)

3.1 Aircraft Performance

Current Glide Ratio (L/D, from speed table)

3.2 Navigation

Distance from launch

Distance and bearing to next waypoint or goal

Distance and bearing to other pilots (optional)

3.3 Pilot Assistance

Speed to Fly (large calc to optimize performance)

Thermal Assistant (calculates position and size of thermal from flight data)

3.4 Display functions

There will be many display modes (organized into screens) which can be switched automatically or manually. Most data values have both numeric and graphical displays, depending on the screen being displayed.

Layer 4 - Support Functions

Configuration edit/upload/download (lots & lots)

Archived data download

System Calibration (self + bench)

And that's just the outline of the project. I've already determined that the Palm has more than enough computational horsepower to do everything that's needed, but that neglects to include architectural limitations.

For example, the serial and IR ports (separate hardware ports on my upgraded 5000) will require a fair amount of work to get all the data in and out, meaning muxing and additional intelligence outside the Palm. This may cease to be an issue after I get a good look at the Visor and its Springboards.

I'm also not sure how fast and how often I can update the Palm LCD. How fast and how expensive are the PalmOS text and drawing routines? How fast do the physical LCD pixels flip?

Anyway, the final output needs to be "real-time" only in the sense of the pilot using it. Variations of a hundred milliseconds either way in the display of data won't matter too much. But the input must be "hard" real-time, in the sense that incoming data must never be lost. That means getting the data to the higher-level calculations is a high priority.

With the number of inputs to be obtained and calculations to be performed, at various levels and with varying time dependencies, I have not been able to come up with any "simple" set of

DFMs that will enable me to meet my fundamental goals:

- 1. Drive the display as rapidly as possible.**
- 2. Lose no data.**
- 3. Sleep as much as possible.**

The fundamental problem with using DFMs in complex real-time computational environments is the state explosion that easily occurs when the needs for time and space conflict. The decisions needed must be abstracted from the calculations themselves and incorporated into the DFMs. When the calculations change, or evolve, the task of maintaining the DFMs becomes unwieldy, if not impossible.

Using multitasking, on the other hand, every algorithm knows all about itself, and can tailor its execution to fit the availability of data and the time to process it. The common abstraction of "priority" vastly simplifies the decision process without resorting to complex DFMs.

Or, to use a more practical example: Have you ever had to debug and tune the performance of a system based on complex DFMs (I'm not talking about simple DFMs here, but ones with well over 100 states)? How difficult was it compared to tuning an equivalent multitasking system of, say, 20 tasks? In my experience, the multitasking route was always easier and more successful.

I've only seen DFMs used in the "real" world to control relatively simple state-driven systems such as elevators (anywhere you could use a PLC) or subsystems (switch & light panels).

There are, of course, exceptions: Many weapon systems rely on state machines only because they can be PROVEN correct. The extreme cost of these systems and need for extreme performance can justify the use of DFMs. Or, where the risk is extremely high, such as in some medical systems.

Just look at my system, with its 6 main inputs. The state space for inputs alone is $6! = 720$ states! Combine that with each computational algorithm needing only a subset of that set, and producing one or more outputs that get ADDED to that set (for use by other calculations).

I believe using multitasking with scoreboarding (essentially flattening the DFM state space into a table that can be quickly and easily queried and tested) will, for this particular project, be far more effective than even attempting to use DFMs.

The next question is: What is the minimal number of tasks my project will require? Simple: One for each layer of calculations, plus one each for input and output management, for a total of 6. But that's minimal: I'd prefer to use more to allow me to split up Layer 3 a bit, making the total around 10.

If we assume a "sloppy" 100 ms maximum update rate, then all tasks must be able to run to completion within 100 ms. The main calculations will run in 40 ms or less, leaving up to 60 ms for display manipulation and task switching. Though I have no idea what the display overhead

will be (I need to do a display mock-up soon - quite easy in QF!), I think it would be easy to allocate at least 1 ms for each state switch. For the 2 MIP Dragonball processor, that's 2,000 instructions! Surely, that should be enough to do even the most difficult task swap.

Still, add it all up, and it looks like I may have used up nearly all of the Palm CPU cycles, which means the CPU won't get to sleep very often when things are happening at max throughput. Which is OK, since I expect the smarts in the sensors to eliminate the need for non-essential calculation loops, and thus allow for lots of sleep time in the actual instrument.

Now, did that answer your question, or will you force me to write yet another book of dubious value?

By [Neal Bridges](#) on Sunday, October 17, 1999 - 07:46 pm:

I wasn't suggesting DFMs again -- though they may still have some applicability for your problem. Rather, I was suggesting interrupt-driven buffering of each input source, with the interrupt handlers written in assembler for maximum responsiveness.

The potential task-switching mechanism we're discussing will be round-robin and cooperative, i.e. using the common-usage Forth word 'pause', which would require that your input handlers be interrupt-driven to ensure that you don't miss any incoming data.

As to how long it takes to draw pixels on the Palm LCD -- I suggest you run some bench tests. If you had to, flipping bits yourself would be fastest, though that makes your code non-portable and will cause the Emulator to complain about the direct video-buffer access. The PalmOS Win* routines may well be fast enough, though.

Neal

By [BobC](#) on Monday, October 18, 1999 - 02:51 am:

Damn! I just wrote a VERY detailed reply, and an accidental browser window resize caused it to go away!

Is there another mode for the text entry box that will make its contents "sticky"? If necessary, use Javascript (ECMAScript) to pump the data to a private storage area as it is entered, and restore it whenever any significant window event occurs.

This pulls a major vacuum. I'll try again another time.

By [Neal Bridges](#) on Monday, October 18, 1999 - 08:51 am:

Bob, you're a special case -- when you lose a message, it can represent the loss of several pages of text! :) I'll see what I can do about the text input, but in the meantime you might consider writing those enormous missives in, say, NotePad and copying them across.

Neal

By [BobC](#) on Monday, October 18, 1999 - 03:58 pm:

Or, I could try to say the same thing in fewer words...

As for my being a "special case", of course I am! It comes from all my Special Education!

My verbosity comes from a couple of truisms:

- 1. If you can't dazzle 'em with brilliance, baffle 'em with BS.**
- 2. The best way to make an argument unassailable is to make it incomprehensible.**

And I'm still not quite recovered from the loss of my earlier verbiage. I think I'm in mourning, hoping my words somehow made it to that great bit-bucket in the sky.

-BobC

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"File" I/O

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

"File" I/O

By [Daryl Lee](#) on Friday, October 8, 1999 - 11:30 pm:

I have started a new project that cries out for C-like file operations on memo pads. You know, things like `get()`, `put()`, `read()`, `readln()`, `write()`, `writeln()`. I've looked at the MEMO module, and it has some good stuff in it, but I have two questions to start with.

1. How do I figure out what the integer associated with a memo category is?

The `FindMemoInCategory` word wants a category id, but I've been all over my Palm with `RscEdit`, and can find nothing. If it's defined in the SDK documentation, maybe a little help locating it would be all I need. I created a `FindMemoAnyCategory` version that got me past the hurdle, but that's not very satisfying.

2. Is there a pre-existing set of definitions like I described above? I have this nagging feeling that another wheel is on the verge of re-invention.

Daryl

By [Ron Doerfler](#) on Saturday, October 9, 1999 - 10:58 pm:

Hi Darryl,

The file `newmemo.txt` by Allen Chen has some higher-level functions that would help you. I am also trying to cleanly extract some memo functions from my `ActiveKey` app to post here, including one to sort a new memo after it's created.

> 1. How do I figure out what the integer associated with a memo category is?

The possible category numbers are 0-15 and 255, where 0 is Unfiled (I believe) and 255 is All (I know). To find the number for a particular category name, I go through each of the first 16 possibilities and check for a string match. Example code is below--note that the backslash that is the character for a comment line shows up as `^#92;` instead (love that preview option!).

Ron

Example code for finding the category number, if any, of "ScoutTrack". After executing `findSTcatnum` the variable `stcatnum` will either contain the category number if it exists, or -1 if it doesn't. "MemoDBR" and the routines to open the memo database (which I do prior to this) and to close the memo database (which comes later) are located in `newmemo`. This file was in the file area of the old Quartus site, so it should be at this new site as well.

```

needs newmemo
needs zstrings

variable stcatnum
create catname 16 allot

: STcatname ( -- zaddr u )
z" ScoutTrack" ;

: get-catname ( catindex -- )
\ Stores category name as string.
\ Only 16 chars are allowed when
\ the user creates the category.
catname >abs rot
MemoDBR CategoryGetName ;

: STcat? ( -- flag )
\ Returns 1 if category is ScoutTrack
STcatname drop >abs
catname >abs StrCompare 0= ;

: findSTcatnum ( -- )
-1 stcatnum ! 16 0 do
i get-catname STcat?
if i stcatnum ! then
loop ;

```

By [Ron Doerfler](#) on Saturday, October 9, 1999 - 11:16 pm:

Hi again,

Hmm, I suppose I should have reviewed my code for for style before I pasted it. I see that an EXIT before the THEN in findSTcatnum would exit the loop once the category number is found, which would save a bit of time. Also, you may find it better to re-write findSTcatnum to leave the category number or -1 on the stack when it's executed, for clarity, rather than storing the result in a variable.

Ron

By [Raul Perez](#) on Wednesday, October 20, 1999 - 10:06 pm:

Ron,
for the newbies among us,
could you re-write your code like you describe?

By [Ron Doerfler](#) on Thursday, October 21, 1999 - 03:03 am:

Hi Raul,

I see that you may have had some problems with my comments, as I said you could put EXIT in front of the THEN to exit the loop early. I should have said LEAVE, which does leave the loop. EXIT exits the current definition and returns to the calling definition, and in any event you have to use UNLOOP first to discard the loop parameters if you're EXITing from within a loop. In my earlier example code, where the findSTcatnum definition ends with LOOP, you could put UNLOOP EXIT before the THEN and you would be all right. In my re-written code below, I added the OpenMemoDB and CloseMemoDB words at the start and end of findSTcatnum rather than assuming that other code took care of it, so I just use LEAVE inside so I don't skip the CloseMemoDB at the end.

A minor change I made was to leave the category number (or -1 if the category isn't found) on the stack when findSTcatnum is called, rather than storing this value into a variable. I also made catmatch?, a more general word than STcat?.

Sorry about confusing LEAVE with EXIT. Let me know if I've created any more confusion 8^).

Ron

```
needs newmemo
needs zstrings

create catname 16 allot

: STcatname ( -- zaddr u )
z" ScoutTrack" ;

: get-catname ( catindex -- )
\ Stores category name as string.
\ Only 16 chars are allowed when
\ the user creates the category.
catname >abs rot
MemoDBR CategoryGetName ;

: catmatch? ( zaddr u -- flag )
\ Returns true if passed string is the
\ same as string in catname buffer.
drop >abs catname >abs
StrCompare 0= ;

: findSTcatnum ( -- catnum | -1 )
\ Returns ScoutTrack category number
\ or -1 if category is not found.
```

```
OpenMemoDB \ Remove if DB open
-1 \ Left on stack if cat not found
16 0 do
  i get-catname \ Name -->buffer
  STcatname catmatch?
  if \ Category found
    drop i \ Replace -1 with cat number
    leave \ Can leave loop early
  then
loop
\ Remove below if leaving DB open
CloseMemoDB ;
```

By Raul Perez on Thursday, October 21, 1999 - 04:37 pm:

I'll try it and get back to you.

By [Ekkehard Skirl](#) on Sunday, November 14, 1999 - 07:19 am:

Hi There,

I'm looking for QuartusFeatures like provided in Standartwordsets FILE and FILE EXT for my PalmPilot.

Is there any file that provides this ?

I try Quartus privat and for fun. I don't know handling C-Compiler. Also I didn't mind the Palm-OS-Calls. But for working with files I think are the Standartwords sufficient.

Thanks for helping me.

Ekkehard

By [Neal Bridges \(Nbridges\)](#) on Sunday, November 14, 1999 - 08:34 am:

It is difficult (not impossible, but difficult) to map a Standard FILE interface on top of the Palm OS database ("file") structure, especially in a way that supports pre-Palm III devices (the Palm III already supports a form of streaming file I/O).

I would recommend that to best work with internal Palm OS databases, you familiarize yourself with the official SDK docs, particularly the Dm* OS calls.

If anyone would like to attempt part or all of the FILE wordsets, though, as an extension of Quartus Forth, I would be happy to support the effort.

Neal

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Welcome to the Discussion Forum!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\):](#)

Welcome to the Discussion Forum!

By [Neal Bridges](#) on Tuesday, October 5, 1999 - 09:11 pm:

Hi! Along with the new domain name, and the new look, comes a new message forum. Let me know what you think.

By Gary Wiese on Friday, January 7, 2000 - 07:14 pm:

Hello every one:

I am just learning to program my palm and need to know a lot of things to get started. For one, how do I use the libraries? Do I use them in programs or are they just for ideas?

On one of the tutorials I found a program on converting fahrenheit to celcius, but I can't get it to work. I kind of understand the programming of it but the math does not work.

If I enter 100 for celcius I should get 212 for fahrenheit. I don't. Neal has told me Forth uses integer math. So how do I make it use real numbers.

Here is what I tried:

```
100 9 5 / * 32 + . <ret> 132 ok
```

So how do I make it right. There are lot more where this came from.

Thanks

Gary

By [Neal Bridges \(Nbridges\)](#) on Friday, January 7, 2000 - 07:26 pm:

```
100 9 5 / * 32 +
```

does the following:

```
9 5 / -> 1
100 * -> 100
32 + -> 132
```

This is clearly not what you want.

There is a 'scaling' operator called `*/` that will do the trick for integers:

```
100 9 5 */ 32 + -> 212
```

Floating point is another matter:

```
100e 9e 5e f/ f* 32e f+ fs. -> .21200000E3
```

Neal

By **Gary Wiese** on **Friday, January 7, 2000 - 09:08 pm:**

Thanks I get it:

That's the way it was in the program too, but I thought it was a typo. I didn't realize that */ were not seperated by a space.

In the floating point example is there a speacial Word to use, when scientic notation isn't wanted. Or is this something that I have to define my self through programming.

Thanks
Gary

By **Neal Bridges (Nbridges)** on **Friday, January 7, 2000 - 11:04 pm:**

F. is the word you want. It's in *float-ext*.

needs float-ext

100e 9e 5e f/ f* 32e f+ f. -> 213.

Neal

By **Gary Wiese** on **Saturday, January 8, 2000 - 12:21 am:**

I keep getting an error message.

100e 9e 5e f/ f* 32e f+ f. <ret>
f.? undefined word

Tried f . same thing and just plan f same answer.

I assume f is for fixed and fs is for scientic notation.

Thanks
Gary

By **Neal Bridges (Nbridges)** on **Saturday, January 8, 2000 - 12:27 am:**

The 'needs float-ext' from the example above is important. It brings in a few additional float words, including **F.**

Neal

By **Gary Wiese** on **Saturday, January 8, 2000 - 12:27 am:**

Forget the last post, now I know what the librarys are for.

include float-ext ok
100e 9e 5e f/ f* 32e f+ f.-->212. ok

I am getting there.

Gary

By [Gary Wiese](#) on Saturday, January 8, 2000 - 12:29 am:

you beat me by a hair

Thanks
Gary

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Documentation

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(PalmOS version\): Documentation](#)

By [Gary Wiese](#) on Wednesday, January 12, 2000 - 09:30 pm:

When I downloaded the evaluation version I received a bunch of HTML pages. One of them has descriptions of the words and how they are used. Giving the short and the long version of the description. I seen it once and haven't been able to find it sense. Can anyone help me find it again? I've been practicing and I find this page very useful.

Gary

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 23, 2000 - 08:34 am:

Gary, I'm not clear on what you're asking about -- Standard words or Quartus-specific words?

Neal

By [Gary Wiese](#) on Sunday, January 23, 2000 - 12:41 pm:

When I was going through the html docuements that came with forth I found a page with the dicriptions of forth words. For example, how " is used, it gave the proper way to use the word and a summary of what it does. A short version which gave a breif discription and a longer version that discribed it in more detail.

I also ordered the book Starting Forth by Leo Brodie. I haven't been able to find any more help on the language for beginners, so I am waiting for it to arrive.

The one thing that I really don't understand is the floating point math. I have been watching the post and seen a few things on it, but nothing in detail.

I understand how to define words and how to use the them in a program, but I found a word for square roots and I haven't been able to get it to work.

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 23, 2000 - 12:44 pm:

Give me a specific example of what you're having problems with, Gary, and I'll go through it in detail to show you what's happening.

Neal

By [Gary Wiese](#) on Sunday, January 23, 2000 - 01:47 pm:

I been learning how to difine words, like squaring a number. I can do this with the stack, but about finding the square root of a number. I guess I could define it using the stack, but it would be very hard. Finding the square root on paper is sort of like long division with a lot of stack mulipulations. I found a word called sqrt, but I can not get it to work. For example,

\ hypotenuse

: sq dup * ;

: sumofsquares sq swap sq + ;

: hypt sumofsquares sqrt ;

I hope I did this right, sq works and so does sumofsquares, but sqrt does not.

Thanks

Gary

By [Gary Wiese](#) on Sunday, January 23, 2000 - 02:36 pm:

Sorry wrong word, this is how it is written.

\ hypotenuse

: sq dup * ;

: ssq sq swap sq + ;

: hyp ssq FSQRT ;

This is how I have it written and here is my results.

include hypotenuse ok

3 4 hyp . 25 ok

I expected 3 4 hyp . 5 ok

Thanks

Gary

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 23, 2000 - 05:10 pm:

You're mixing float and integer operations. To use FSQRT:

needs float-ext

: fsq fdup f* ;

: fssq fsq fswap fsq f+ ;

: fhyp fssq fsqrt ;

3e 4e fhyp f. -> 5.

Neal

By [Gary Wiese](#) on Sunday, January 23, 2000 - 05:44 pm:

Quartus Forth (Royal daVinci version)

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(Royal daVinci version\)](#)

Welcome to *Quartus Forth (Royal daVinci version)*, for questions, comments and discussion of the Royal daVinci version of the [Quartus Forth](#) on-board compiler.

You may enter any of the discussions below by clicking on the appropriate link. Or, to start a new discussion of your own, click on the "Create New Conversation" button.

- [How do you read Text out of the memo applikation?](#) February 28 - 06:54 am
- [Loading text into emulator?](#) February 7 - 04:10 pm
- [Cancel bug](#) March 15 - 07:42 pm
- [Source code compatibility??](#) January 3 - 06:19 pm
- [Help with dV Forth](#) January 3 - 08:49 am
- [Quartus daVinci Forth version 1.1 now available!](#) January 10 - 06:02 pm
- [New processor?](#) October 28 - 12:31 am
- [Welcome!](#) December 8 - 10:35 am

How do you read Text out of the memo applikation?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(Royal daVinci version\)](#): How do you read Text out of the memo applikation?

By [iron_at](#) on Thursday, February 24, 2000 - 09:51 am:

I need help with reading datas out of the davincis standart applikation databases. I see that it is possible in DVFORTH do read out of the Memo applikation.

Thank you

[iron_at](#)

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 24, 2000 - 10:04 am:

Do you want to know how to do this using Quartus daVinci Forth, or just how it is done? If your question is more general, you might better ask in the Developer's forum at <http://www.davinciworld.com>.

Neal

By [iron_at](#) on Friday, February 25, 2000 - 04:45 am:

Hi Neal,
I just want do know how this is done. The reason is that i want do write some usefull Apps but there are useless if i cannot sync the data.

thanks

[iron_at](#)

By [Neal Bridges \(Nbridges\)](#) on Friday, February 25, 2000 - 10:32 am:

I can give you a very quick sketch:

The internal databases can be opened like any other -- for instance, the memopad is called 'Memo Database'. Use **DmFindDatabase** and **DmOpenDatabase** to open them -- **FDmOpenDatabase** is required instead on the 2 megabyte model. When finished, **DmCloseDatabase** or **FDmCloseDatabase** to close.

Once opened, **DmNumRecords**/**FDmNumRecords** reports the number of records in the database. Records are accessed for read via **DmQueryRecord**/**FDmQueryRecord**. Lock the returned handles open with **MemHandleLock**/**FMemHandleLock**, and **MemHandleUnlock**/**FMemHandleUnlock** to release.

I don't have my daVinci materials in front of me here, but there's a bit more involved in writing a new database record, and modifying an existing one. The general sequence is the same.

Neal

By [iron_at](#) on **Monday, February 28, 2000 - 06:54 am:**

Thanks !!

Someone have published a solution of this Problem.

(see Developer's forum)

I know that this is not the righth forum for this kind of Question. You have right with the Developer Forum. Maybe i have sometime a Question about Forth. (Is a very unusal languages :))

sorry that i wasting your time

iron_at

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Loading text into emulator?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(Royal daVinci version\): Loading text into emulator?](#)

By [username](#) on Wednesday, January 12, 2000 - 05:06 pm:

Hi Neal,

Have you found a way (which you could share with us) of loading text into the emulator? It would be useful to be able to do development on the desktop machine where one could just cut and paste from a text editor instead of needing to sync to a real daVinci or do the development on the daVinci itself.

Thanks,
Mark Tillotson

By [Neal Bridges \(Nbridges\)](#) on Thursday, January 13, 2000 - 06:48 am:

Mark --

As far as I know there is no way to do this. The emulator is quite primitive and it looks like it'll never be updated by Royal.

Neal

By [username](#) on Monday, January 17, 2000 - 08:10 pm:

Hi Neal,

Just to prove it could be done, I went through the process and managed to load some files into it. The process is complex however and certainly is not 'cut and paste'. First I create some 1k memos in the emulator (just periods and spaces). then I run the 'dvemu1024.ram' file through a byte swap program. Then I cut out a section of a 1k memo in a hex editor and paste in my text. After running the result again through byte swapping, it is ready to run in the emulator. I may try to automate the process somewhat, but that may take me a while to get around to.

Cheers,
Mark Tillotson

By [Neal Bridges \(Nbridges\)](#) on Sunday, January 23, 2000 - 08:35 am:

Clever. My greatest complaint about the emulator is that it doesn't let you pop-up the on-screen keyboard for data-entry, nor does it let you type on the PC keyboard.

Neal

By [Mark Tillotson](#) on Monday, February 7, 2000 - 04:05 pm:

Hi Neal,

Well, it took long enough but I now have a version of the davinci.rom file for the emulator which allows the pop-up on-screen keyboard to activate. The problem was that the davinci creates nil events when the pen is still down but the co-ordinates have not changed while the emulator only gets passed co-ordinates which are different. My patch is to jump to the point at which nil events are processed at the end of each pen move event. If you want a copy of it, I will send it to you, just let me know.

Mark

By [Neal Bridges \(Nbridges\)](#) on Monday, February 7, 2000 - 04:10 pm:

I sure would, Mark. That's quite clever.

Neal

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Cancel bug

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(Royal daVinci version\): Cancel bug](#)

By [username](#) on Saturday, January 8, 2000 - 12:17 am:

Hi Neal,

There seems to be a bug in the 'cancel' operation when executing a word created by 'bitmap'. In a word with a 'begin ... 0 until' loop (which I break out of with 'cancel'), if I have a word 'y @ x @ ball' (where ball was created by 'bitmap'), 'cancel' causes a lock-up crash after printing the normal 'exception...', but not the underlined name of the word followed by the '? user interupt'. If I comment out the line with 'y @ x @ ball' on it, 'cancel' works ok. If you can't reproduce this yourself, I would be happy to post it or e-mail it to you.

Mark Tillotson

By [Neal Bridges \(Nbridges\)](#) on Saturday, January 8, 2000 - 12:20 am:

Mark, please post or mail your code. I suspect you're either underflowing or overflowing the stack inside your loop. Happy to have a look at it.

Neal

By [Neal Bridges \(Nbridges\)](#) on Saturday, January 8, 2000 - 12:32 am:

Another thought -- are you drawing the bitmap off the screen at any point? Even partially?

Neal

By [Username](#) on Sunday, January 9, 2000 - 01:51 am:

Hi Neal,

Here is the code. It actually works as is, but I have found that it is not just the bitmap words. If I change the empty do loop from 500 to 5000, it causes it to lock up on cancel. Strange eh?

Mark

```
\ ball 00.1.7 MAT
needs bitmap
```

```
decimal
16 16 bitmap ball
2 base ! \ switch to binary
0000001111000000 w,
0000111111111000 w,
0001111111111000 w,
```

0011111111111100 w,
0111111111111110 w,
0111111111111110 w,
1111111111111111 w,
1111111111111111 w,
1111111111111111 w,
1111111111111111 w,
0111111111111110 w,
0111111111111110 w,
0011111111111100 w,
0001111111111000 w,
0000111111110000 w,
0000001111000000 w,
decimal

\ invball 00.1.7 MAT
needs bitmap

decimal
16 16 bitmap invball

0 w,
0 w,

\ pong 00.1.7 MAT
needs core-ext
needs ball
needs invball

variable bx
variable by
variable dx

variable dy

```
: bounce? ( xory-addr inc-addr -- )  
over @ over @ +  
1 143 within invert if  
dup @ negate over !  
then @ swap +! ;
```

```
: pong  
30 bx ! 80 by ! 3 dx ! 1 dy !  
begin  
1 (ekey) 0= while  
bx dx bounce?  
by dy bounce?  
by @ bx @ ball  
1 (ekey) drop  
500 0 do loop  
by @ bx @ invball  
repeat  
;  
pong
```

By [Francois Vignon](#) on Sunday, January 9, 2000 - 10:13 am:

Tell me if I'm wrong: (ekey) expect a double cell, not a single cell, so correction is:

1. (ekey)

your "0 (ekey)" cause a lock up, because stack underflow, etc.

By [Francois Vignon](#) on Sunday, January 9, 2000 - 10:14 am:

sorry: when I write "0 (ekey)" , I must write "1 (ekey)" :-)

By [username](#) on Monday, March 13, 2000 - 05:22 pm:

Hi Neal,

This is still an outstanding issue. I have tried deleting and reinstalling Quartus, and that is not it. If I change the line in the version posted above from:

```
1 (ekey) 0= while
```

to:

```
1 (ekey) 3 = invert while
```

The 'pong' word exits correctly (with no over or underflow of the stack) on a pen event and yet pressing cancel locks up the daVinci. Actually, I also dropped the 'needs core-ext' and explicitly included the code for 'within' as well to no effect. Any ideas?

Mark

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 06:27 pm:

Mark, I was waiting for your reply to my question -- are you at any time drawing the ball offscreen by even one pixel?

I have run through your code, and the `bounce?` word will in fact allow the ball to be drawn at at negative coordinate. I think that's what's causing your crash. When I redefine `bounce?` as:

: bounce? 2drop ;

I can't cause it to fail under any circumstances.

The crash is happening not because of Quartus Forth, but because the second-rate OS in the daVinci doesn't do any clipping when drawing on-screen; it happily trashes memory instead.

Neal

By [Username](#) on Tuesday, March 14, 2000 - 12:38 pm:

Hi Neal,

Sorry, I just don't see it. I have copied the code into win32forth (deleting the references to `ekey`) with the `ball` and `invball` words redefined as `: ball . . ; : invball . . ;` and I never get any negative numbers. Note also that the word works fine on the daVinci if I exit with a pen event, it only crashes if I press cancel.

Mark

By [Neal Bridges \(Nbridges\)](#) on Tuesday, March 14, 2000 - 02:53 pm:

Equally important is not drawing off the right-hand or bottom edge of the screen.

I have run it a number of different ways on my system, and have not yet been able to reproduce your crash -- what ROM and model of daVinci are you using? I have both the original 256K and the 2MB DragonBall versions, both with the latest ROM.

Neal

By [Username](#) on Tuesday, March 14, 2000 - 04:19 pm:

Hi Neal,

No, I don't seem to be drawing it off of the screen at all. I have an original 256k with its original ROM which I have checked as being the same as the `ez2910.bin` file included in the 1st `osupdate.zip` file which Royal released. This bug is a strange one since seemingly minor changes can cause it to stop happening. As I said earlier, using 500 in the empty do loop lets cancel work correctly, while changing it to 5000 causes it to lock-up when cancel is tapped. Would you mind describing how Quartus is trapping the cancel event?

Mark

By [Neal Bridges \(Nbridges\)](#) on Tuesday, March 14, 2000 - 04:30 pm:

The CANCEL button is detected during the (EKEY) loop, and propagated upward as a Forth exception. When it reaches the default CATCH in the console code, it is reported as a 'user interrupt'.

The size of the empty do-loop should be completely irrelevant.

I would like to be able to reproduce your error; even using your code exactly as shown, I have no problems. Let me re-build the Quartus daVinci Forth kernel and send it to you, to be sure we're testing against the same base.

Neal

By [Neal Bridges \(Nbridges\)](#) on Wednesday, March 15, 2000 - 07:42 pm:

I just mailed you an up-to-date build of Quartus daVinci Forth -- let me know if you're having the same difficulty.

Neal

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Source code compatibility??

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(Royal daVinci version\): Source code compatibility??](#)

By [aos](#) on Monday, January 3, 2000 - 04:40 am:

Hi, Neal (and rest of the listeners).

Happy new year to all.

Main question is: Could we get a source code from Pilot and download into daVinci, and make it work?

Are system calls similar?

And, by the way, has anybody written a small spreadsheet we could use in the daVinci?

If written in Forth, I think I could have a look at the code and port it.

Best regards, and thanks for a job well done,

By [Neal Bridges \(Nbridges\)](#) on Monday, January 3, 2000 - 08:47 am:

Thanks! The system calls on the daVinci and the PalmOS have very little overlap, despite 3Com's successful injunction against them.

The Palm OS provides a much larger range of functions; any complex app would require a large bit of work to port over to the daVinci. Talk to Scott Ludwig (PocketChess) if you want to hear the horror stories.

There are a couple of such tiny spreadsheet apps for the Palm, but as far as I know none yet written in Forth.

Neal

By [Penree](#) on Monday, January 3, 2000 - 05:49 pm:

Can you take the examples from your Palm archive and run them on DV Forth? (Is that what aos was talking about?)

By [Neal Bridges \(Nbridges\)](#) on Monday, January 3, 2000 - 06:19 pm:

For simple programs, like *beer*, there is no problem, the program will run in both places. When you start using OS features built into the ROM of the devices, though, your programs become non-portable. So no, in general terms Palm software will not run directly on the daVinci.

Neal

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Help with dV Forth

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(Royal daVinci version\): Help with dV Forth](#)

By **nick Penree** on **Friday, December 31, 1999 - 09:52 am:**

I am totally new at this stuff so I need help. I want to know how to actually make stuff with the compiler.

By [Neal Bridges \(Nbridges\)](#) on **Friday, December 31, 1999 - 11:23 am:**

Well, give the manual a read first to get the basics of how it operates. Read the FAQ, and ask any questions you have after that!

Neal

By **Nick Penree** on **Friday, December 31, 1999 - 12:27 pm:**

Is there a special language or something?

By [Neal Bridges \(Nbridges\)](#) on **Friday, December 31, 1999 - 12:35 pm:**

Have a look at the first page of the manual, Nick, I think it'll answer your question.

Neal

By **Nick Penree** on **Friday, December 31, 1999 - 04:04 pm:**

is that manual.htm? I know it is but I don't know the language. Where is that? I am sorry for any inconvenience this causes you

By [Neal Bridges \(Nbridges\)](#) on **Friday, December 31, 1999 - 04:43 pm:**

manual.htm is an HTML file that you read using your web browser -- same one you're using right now to read this forum.

Enter `c:\dvforth\manual\manual.htm` (or whatever path is right for your system) and you'll be able to read the entire manual.

Neal

By **Nick** on **Friday, December 31, 1999 - 04:51 pm:**

I was wondering how to use *arcfour*?

By [Neal Bridges \(Nbridges\)](#) on **Friday, December 31, 1999 - 04:52 pm:**

arcfour is a library module that provides the ArcFour encryption algorithm -- it's a set of functions you could use to encrypt data within your own applications.

Neal

By **Nick Penree** on Friday, December 31, 1999 - 05:14 pm:

could I encrypt my \startup just to test it how could that work anyway?I still can't find out how to proram. i looked at the whole manual if you could give me the exact .htm file included.Can you send me some more examples?

By [Neal Bridges \(Nbridges\)](#) on Friday, December 31, 1999 - 05:29 pm:

The *arcfour* library source isn't a stand-alone tool for encrypting memos. Here's a short example of how it works:

```
\ arcfourdemo

needs arcfour

: K s" ABCDE" ; ( key )
: M s" Secret" ; ( message )

\ Display the original message:
M type cr

\ Encrypt it and re-display:
K arcfourkey M arcfour
M type cr

\ Decrypt it and re-display:
K arcfourkey M arcfour
M type cr
```

Neal

By **Penree** on Friday, December 31, 1999 - 05:45 pm:

so how do you view the encrypted data?

By [Neal Bridges \(Nbridges\)](#) on Friday, December 31, 1999 - 06:15 pm:

Did you try the example above?

I recommend you have a look at some of the pointers in the "Online Resources" section, get a copy of the ANSI Forth Standard, read some of the beginner's documents, get a feel for the Forth programming language itself. It's a powerful, elegant, expressive language, well worth learning.

Neal

By **Penree** on Friday, December 31, 1999 - 08:31 pm:

Where can I download a copy of Forth for the PC? I download what you recommended and I'm gonna read the docs Thanx!

By [Neal Bridges \(Nbridges\)](#) on Friday, December 31, 1999 - 10:02 pm:

Drop by <http://www.forth.org> -- there are a number of PC implementations there.

By Penree on Friday, December 31, 1999 - 10:29 pm:

I downloaded Pygmy is that a good one?

By [Neal Bridges \(Nbridges\)](#) on Friday, December 31, 1999 - 10:58 pm:

Pygmy is a small Forth that is not Standard-compliant, as far as I can recall. I recommend GForth, or if you're feeling adventurous, Win32Forth.

Neal

By [dennis](#) on Monday, January 3, 2000 - 03:51 am:

i'm having problems in the initial sync of my 2mb davinci. i get the msg...error, time out whenever i try the initial sync. i have configured the com1 port as stated in the help section of the davinci link and still could not sync.

what should i do? pls help.

By [Neal Bridges \(Nbridges\)](#) on Monday, January 3, 2000 - 08:49 am:

Hi Dennis. I recommend you post this question at <http://www.davinciworld.com>, they have a whole section there to deal with sync problems. Rest assured you're not alone!

Neal

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Quartus daVinci Forth version 1.1 now available!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(Royal daVinci version\): Quartus daVinci Forth version 1.1 now available!](#)

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 25, 1999 - 10:38 am:

The long-awaited Quartus daVinci Forth is now available in the File Area:

<http://www.quartus.net/files/daVinci/dvForth>

This is a free evaluation version. If there is sufficient interest, an expanded version may be made available later.

Note that this compiler operates only on the first two Royal daVinci models -- those with a Motorola DragonBall processor (the 256K and 2MB versions). The model currently being sold -- the one Royal has released since the 3Com lawsuit -- has a Sharp processor and is not compatible with this compiler.

The .zip contains the compiler itself, the manual, library code, and examples.

Enjoy!

Neal

By [jsgraham](#) on Monday, December 27, 1999 - 11:01 am:

Neal,

I've watched with interest your creation of Forth for PDA's. How would you compare the daVinci with Palm's offerings? Inasmuch as Royal is no longer manufacturing units which will run your version of Forth, are you going to create a version for their current model?

Thanks.

Steve Graham

By [Neal Bridges \(Nbridges\)](#) on Monday, December 27, 1999 - 04:06 pm:

The original daVinci unit had problems, but showed some promise as a Palm competitor. However, it was hammered flat by lack of proper support from Royal, and a lawsuit from 3Com regarding the SDK.

They have retooled and are now producing what they call a 'daVinci', but which has a Sharp processor in it instead of the Motorola DragonBall, meaning all the existing third-party software is completely incompatible with it. Rumour has it they've decided not to produce an SDK for it, out of concern for another lawsuit. This means it's a closed system, and as such, in my view, has very little future.

This may of course change, and if it does I'll re-evaluate.

Quartus daVinci Forth was released out of consideration for those daVinci users who have been orphaned by Royal, in as much as the DragonBall-based daVinci product has a past and no future.

Neal

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 29, 1999 - 03:45 pm:

One user has reported trouble running the Quartus daVinci Forth compiler on his 2MB DragonBall daVinci. It turns out he had never installed the updated ROM versions provided by Royal -- and with the ROM as it shipped on the device, there are problems.

Quartus daVinci Forth has been fully tested under the newest ROM available for the 2MB daVinci. If you're experiencing any difficulties running apps on your 2MB daVinci, installing the new ROM is recommended.

Neal

By [Username](#) on Thursday, December 30, 1999 - 06:37 pm:

Hi Neal,

I am very impressed. Thank you very much for still releasing this. I definitely will be making good use of your efforts. Off the top of my head, the first things I would like to work on are: access to notes bitmaps and a 'visual' program writing workspace. A separate windows program to move a directory full of .txt files into an access database for uploading to the daVinci would also be very usefull. Along this line, you might want to consider releasing a memo.mdb file containing all of the included source, to save everyone from having to do all that cutting and pasting. Anyway, thanks again for releasing the most impressive daVinci application yet.

By [maverick](#) on Monday, January 10, 2000 - 05:30 pm:

Hi Neal,

I sent you a note earlier and posted to the DavinciWorld site about my problem before I found your Discussion Board.

I'm having trouble getting dvForth to run on my dv. What version of ROM is supported? I have the factory installed version. I just discovered I can't find the version # of it. I saw the post about the factory ROM so I guess I'll try that first.

Maverick

By maverick on Monday, January 10, 2000 - 06:02 pm:

Hi Neal,

I downloaded the latest ROM for the 2M DV and dvForth is now working as advertized.

**Thanks for the ROM upgrade tip,
Maverick**

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New processor?

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(Royal daVinci version\): New processor?](#)

By **Bob Wada** on **Wednesday, October 27, 1999 - 08:24 pm:**

Neal -
When Royal begins to ship the revised daVinci, will it contain a processor other than the Dragonball?

If not, will you go back to the drawing board one more time for yet another Quartus version for this machine?

-- Bob Wada

By **Neal Bridges** on **Thursday, October 28, 1999 - 12:31 am:**

I'm not in the know as to what processor they'll use; I'd guess, though, that they'll keep the factories tooled as they already are, to minimize the cost of the change. If they come out with yet another device, though, I'll have to see what it looks like before deciding whether to encompass it.

Neal

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Welcome!

[Quartus Handheld Software: Discussion Forum: Quartus Forth \(Royal daVinci version\): Welcome!](#)

By [Neal Bridges](#) on Tuesday, October 5, 1999 - 09:41 pm:

Hi -- this topic is for discussion and questions concerning the Royal daVinci version of Quartus Forth.

By [Wayne Henning](#) on Sunday, October 10, 1999 - 10:55 am:

When can I get the Royal daVinci version.

By [Neal Bridges](#) on Sunday, October 10, 1999 - 12:49 pm:

Very soon. I am finishing the packaging and distribution arrangements as we speak.

Neal

By [Mark Tillotson](#) on Monday, November 8, 1999 - 02:39 pm:

Given the recent news regarding the replacement of the daVinci processor with a different one, are you still going to release the version you have been working on?

By [Neal Bridges \(Nbridges\)](#) on Monday, November 8, 1999 - 03:55 pm:

Mark -- I've given that much thought, and decided to go ahead and release it at any rate. I don't think at this stage if I'll put any effort into the new platform, at least not until and unless proves itself in the market.

Neal

By [Larry Huddleston](#) on Tuesday, November 23, 1999 - 07:44 pm:

Please forgive my ignorance on your product, I am trying to find an SDK for my DaVinci is that what quartus fourth is

By [Neal Bridges \(Nbridges\)](#) on Tuesday, November 23, 1999 - 07:54 pm:

Quartus daVinci Forth is an on-board development environment that lets you develop software right on-board the daVinci (the DragonBall versions). At present it has not yet been released; I have had certain concerns about the future of the platform. At this point those are resolved, and I'll be posting it soon.

It does not yet create stand-alone applications; at some stage it may, if there's sufficient interest.

Neal

By [Larry Huddleston](#) on Wednesday, November 24, 1999 - 11:25 am:

How can I tell which version of the DaVinci I have. Mine is a 2Meg and I purchased it about 2 - 3 months ago.

By [Neal Bridges \(Nbridges\)](#) on Wednesday, November 24, 1999 - 11:40 am:

As far as I know, the newest re-designed model (in response to the lawsuit) is not yet shipping, so all the existing daVincis are DragonBall-based.

Neal

By [Larry Huddleston](#) on Wednesday, December 1, 1999 - 12:50 am:

Neal, I am patiently awaiting Fourth for the DaVinci and checking back every day could hint at when it may possibly be on the site.

Larry

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 1, 1999 - 09:52 pm:

Hi Larry. Good of you to ask. With luck, I'll post it tomorrow.

Neal

By [Larry Huddleston](#) on Wednesday, December 1, 1999 - 10:15 pm:

awesome, I look forward to it.

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 2, 1999 - 10:17 pm:

Give me another day, Larry. I've been struggling with a common cold.

Neal

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 4, 1999 - 07:48 pm:

Turns out this cold is uncommon -- uncommonly tenacious. I am however banging away on the keyboard; do not lose hope. :)

Neal

By [Neal Bridges \(Nbridges\)](#) on Wednesday, December 8, 1999 - 10:35 am:

Ok, good news -- cold is mostly gone. What is holding it up at this point is documentation revisions subsequent to some late changes in the code.

After seeing the lawsuit put forward by 3Com to Royal for their SDK, I have been working to ensure that any proprietary information is external to the Quartus daVinci Forth kernel itself. This is done, but the docs don't reflect it yet.

I would release the binaries and partial docs now, but I would rather release the entire package at once. Please bear with me.

Neal

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Other Quartus Products

[Quartus Handheld Software: Discussion Forum](#): Other Quartus Products

Welcome to *Other Quartus Products*, for questions, comments and discussion of all non-Forth [Quartus](#) software products.

You may enter any of the discussions below by clicking on the appropriate link. Or, to start a new discussion of your own, click on the "Create New Conversation" button.

- [SCX Calculator -- updated for color!](#) March 3 - 01:03 am
- [The Oracle -- in color!](#) February 28 - 04:34 pm
- [SwatchHack ans Swatch incompatible](#) February 6 - 06:58 pm
- [New product: SecretAgent](#) February 2 - 10:07 am
- [New product: PassPhrase!](#) January 4 - 09:23 am
- [LeftHack and ClearHack](#) December 28 - 05:00 pm
- [TickHack under Palm OS 3.3](#) November 1 - 03:59 pm

SCX Calculator -- updated for color!

[Quartus Handheld Software: Discussion Forum](#): [Other Quartus Products](#): **SCX Calculator -- updated for color!**

By [Neal Bridges \(Nbridges\)](#) on Friday, March 3, 2000 - 01:03 am:

I've sent out the color update to the SCX calculator -- it's a small change, but it looks nice on the IIIc. If you're a registered user and didn't get your update, please drop me a note!

Neal

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The Oracle -- in color!

[Quartus Handheld Software: Discussion Forum](#): [Other Quartus Products](#): **The Oracle -- in color!**

By **[Neal Bridges \(Nbridges\)](#)** on **Saturday, February 26, 2000 - 08:56 pm:**

Check out the Oracle, version 2.0 -- it's now in color for the Palm IIIc!

<http://quartus.net/products/oracle>

Neal

By **[Erwin Schomburg](#)** on **Sunday, February 27, 2000 - 10:46 am:**

Only comment that comes to mind is one out of the program itself: Outlook not so good.

Oh well, what to expect if one converts a magic black eight ball to color

8-)

/Erwin

By **[Neal Bridges \(Nbridges\)](#)** on **Sunday, February 27, 2000 - 01:59 pm:**

You don't like it? I think it looks great on the colour screen, and the messages come up in an authentic blue.

Neal

By **[Erwin Schomburg](#)** on **Monday, February 28, 2000 - 04:34 pm:**

As a jest trumping the upcoming color hype its excellent, however, how about Swatch displaying in sort of puke green digits within an appropriately colored background? 8-)

/Erwin

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SwatchHack ans Swatch incompatible

[Quartus Handheld Software: Discussion Forum](#): [Other Quartus Products](#):
SwatchHack ans Swatch incompatible

By [Adalipu](#) on Sunday, February 6, 2000 - 06:19 pm:

Why does Swatch display internet time instead of local time when Swatchhack is active? It just doesn't make sense?

By [Neal Bridges \(Nbridges\)](#) on Sunday, February 6, 2000 - 06:58 pm:

SwatchHack replaces **all** local time on the device with Swatch time. Swatch would have to specifically work around it in order to display local time. It'd be handier perhaps if it did return local time; you are the first to mention it, actually.

Neal

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New product: SecretAgent

[Quartus Handheld Software: Discussion Forum](#): [Other Quartus Products](#): **New product: SecretAgent**

By [Neal Bridges \(Nbridges\)](#) on Monday, January 31, 2000 - 05:15 pm:

Who's looking over your shoulder while you enter your password?

The "Off & Lock" feature of the Palm is quite a good one, but perhaps you're like me -- I stopped using it because when entering the password, it shows plainly on-screen! I'd always be glancing around to see if the Palm screen was visible to anybody else nearby.

With SecretAgent, there's no reason to worry. SecretAgent shows only ********* on the screen while you enter your Security password. It works with either Graffiti or the pop-up keyboard, so if your Graffiti skills aren't perfect, you can still enter your password easily.

SecretAgent was written entirely using the on-board [Quartus Forth](#) compiler.

REQUIREMENTS

SecretAgent works only on Palm OS version 3.0 and later. SecretAgent is a HackMaster-module, so you need to have HackMaster installed on your Palm to activate it. If you do not already have HackMaster, download it now from www.daggerware.com.

INSTALLATION

After installing SecretAgent and HackMaster, you can activate SecretAgent from the HackMaster panel. It's as simple as that! Once activated, you can enter your password in the Security app safe from prying eyes.

SecretAgent is 'try before you buy'. Download it now from the [SecretAgent page](#), try it, and register it for only \$6 US!

Neal

By [E.](#) on Tuesday, February 1, 2000 - 01:08 am:

Using Quartus Forth 2, were you?

Just in case you weren't, you wanna explain to us mere mortals how you made a hack with QF? :)

By [Matthew Blair \(Blair\)](#) on Tuesday, February 1, 2000 - 07:43 am:

E.: I wouldn't know if he was using the much anticipated version 2 of QF, but I think the answer to your question lies in the **TickHack** source code in the file area. The hack is actually m68k assembler, but exists in a QF-readable memo, so I guess you could say it was "written"

in QF...

Matt

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 1, 2000 - 08:19 am:

It's written *using* Quartus Forth -- version 1. The actual code is in 68k assembler, yes. TickHack is the reference you want.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, February 1, 2000 - 12:14 pm:

Neal -- I hope you didn't think that I was denigrating QF in any way. Just merely trying to point out that you put the utility of the QF environment to work in this case, and not the power of Forth specifically (sounds like a *Star Wars* quote doesn't it? *Trust in the Forth, Hackmaster...*)

My apologies for any perceived slights...

Matt

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 1, 2000 - 01:33 pm:

Didn't think that Matt -- but thanks. :)

Neal

By [E.](#) on Tuesday, February 1, 2000 - 09:38 pm:

Um. Then I've been WAY off base all this time about how hacks work.

I thought it was a startup flag issue.

Damn damn damn.

Well, better go get TickHack.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 1, 2000 - 10:12 pm:

You'll see from looking at TickHack -- HackMaster hacks are little code routines that are chained into existing system calls, thereby modifying the behaviour of the system in interesting and useful ways. They must be written carefully.

Neal

By [E.](#) on Wednesday, February 2, 2000 - 10:07 am:

Well, yeah, I mean I knew that that was HOW hacks worked. I was wrong about how they were invoked. I figured there was a "okay, here's a system call, what are you gonna do about it?" flag, similar to they "hey, I've just been through a reset, what now?" flag.

Yeah, I'm GREAT with technical terms when I first wake up.

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Password:

E-mail:

New product: PassPhrase!

[Quartus Handheld Software: Discussion Forum](#): [Other Quartus Products](#): **New product: PassPhrase!**

By **[Neal Bridges \(Nbridges\)](#)** on **Tuesday, December 28, 1999 - 01:22 am:**

Ever have trouble coming up with a new password? PassPhrase helps you choose secure passwords and passphrases for logins, encrypted data, web sites, and so on.

Each time you tap 'Generate', seven items are randomly selected from a self-contained dictionary of over nine-thousand common words, numbers, abbreviations, and symbols. The selection is extremely random, using a strong random-number generator seeded by the exact timing and position of your stylus taps.

PassPhrase offers nearly 7 octillion possible seven-item sequences! (An 'octillion' is a 1 followed by 27 zeroes.)

For added security, working memory is scrubbed when PassPhrase exits; no trace of the selected phrase remains in the Palm's memory.

PassPhrase is freeware. Download it here:

<http://www.quartus.net/files/PalmOS/Apps/passphrs.zip>

PassPhrase was written using the on-board Quartus Forth compiler!

Neal

By **[Neal Bridges \(Nbridges\)](#)** on **Tuesday, December 28, 1999 - 10:02 am:**

From e-mail:

>No password that appears in a dictionary, either
>English or foreign can be considered a "good" password, because it's
>too easily broken by a dictionary attack. Why not build a password
>generator that produces easy to remember phrases that you can use the
>first letters of. For example: "I like icecream better than Spam!"
>becomes "IlibtS!" Now that's an unbreakable password.

Actually while your suggestion appears to make sense at first glance, your password is not more secure than a sequence of random words.

Subject to a dictionary attack, your complete passphrase

"I like icecream better than Spam!"

even assuming your attacker knew you were using words separated by spaces, and with a

known dictionary of 10,000 words, would take 1,000,000,000,000,000,000,000 searches to find. Your short form, "IlibtS!" would take a character-searching breaker only 562,949,953,421,312 tries -- it's 1,776,356,839 times easier to break.

Neal

By [Bill Marcy](#) on Tuesday, December 28, 1999 - 11:05 am:

Where is the source Neal <s>.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 28, 1999 - 11:09 am:

Finished studying the other sources already? :)

Neal

By [Bill Marcy](#) on Tuesday, December 28, 1999 - 02:54 pm:

Getting there, by this weekend, I hope to have a framework for my own program finished...Yes, I know, we are talking simple stuff here, but I keep trying to do things liek I would In C or C++ and as you all know, that kind of programming don't work here <s>.

By [Erwin Schomburg](#) on Tuesday, December 28, 1999 - 04:31 pm:

Referring to the pseudo-security of a random charcter sequence, and in an attempt to beat cheap dictionary lookup sequences, I usually pick a random selection of Forth words from the standard....

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 4, 2000 - 09:23 am:

At 10:03 PM 1/4/00 +0800, you wrote:

>Just downloaded it. It is **very** spartan.

>There are a few things I'd prefer changed:

>

>1. really good passwords and passphrases do **not** contain any

>proper words, as dictionary attacks (mixed with letter frequency analysis

>etc)

>can easily ferret those out, even with interspersed special characters.

>A better solution are just a jumble of slphanumeric characters and special

>characters

>without any meaning. As those are very difficult to remember, a compromise

>is usually to generate pronounceable (but not meaningful) strings

>interspersed

>with multiple special characters.

Even if your attacker knew you were using PassPhrase, and knew you were using two words separated by one of only, say, 16 characters, it would still take 1,434,288,384 guesses to find your password. For login systems with multiple-failure lockouts and delays between retries,

such passwords are very secure.

For encryption purposes, longer passphrases are desirable. A nine-word passphrase, even from a known dictionary of 10,000 words, is equivalent to 128-bit encryption in terms of the number of trials it takes to break it.

**>I would love this tool if it had options to select the length of generated
>passphrase,
>the character set to be used, whether to create pronounceable strings or not
>etc.**

I may extend it. But bear in mind, a 10-character password from a known 'dictionary' (character set) of 127 characters would require a character-searcher to make 1,091,533,853,073,393,531,649 guesses. A 6-word passphrase (far easier to remember), even from a known dictionary of 9,468 words, would require 720,359,844,313,318,231,117,824 -- so the 6-word passphrase is nearly 660 times harder to crack than the 10-character random password. A 7-word passphrase is 6,248,424 times harder to crack than the 10-character random password. And that's assuming your attacker knows that your passphrase consists of only words from the PassPhrase dictionary, spelled in lower-case, separated by one space each.

Neal

Add a Message

Username: This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

LeftHack and ClearHack

Quartus Handheld Software: Discussion Forum: Other Quartus Products: LeftHack and ClearHack

By **Howard Wagner** on Sunday, November 21, 1999 - 10:52 am:

Are LeftHack and ClearHack compatible with Palm OS 3.3?

By **Neal Bridges (Nbridges)** on Sunday, November 21, 1999 - 12:13 pm:

They are indeed!

Neal

By **GregSwartz** on Thursday, December 9, 1999 - 01:15 pm:

I'm having trouble with LeftHack and MemoPLUS. The MemoPLUS website claims that you are aware of this issue and might have a fix. Can you update me on this situation? Also, I've found LeftHack to be quite useful and would like to register (regardless of its interaction with MemoPLUS), can you please provide the best way to accomplish this? The app is wonderfully nag-free so I'm not sure how level the books.

Thanks,

Greg Swartz
greg.swartz@quantum.com

By **Neal Bridges (Nbridges)** on Thursday, December 9, 1999 - 01:59 pm:

Hi Greg. The best way to register LeftHack is via the LeftHack page:
<http://www.quartus.net/products/lefthack>

I am aware of the conflict with MemoPlus. The ideal solution would be for the MemoPlus developer to make his app "Lefty" aware -- Lefty is a simple app that sets a global flag on the Palm, so that applications can notice the flag and redesign their forms accordingly. They seem reticent to do this, however, so I am left holding the ball.

I'm working on a new version of LeftHack that will exclude certain troublesome apps entirely. I have one or two other ideas also which may work. It's in progress!

Neal

By **GregSwartz** on Thursday, December 9, 1999 - 05:02 pm:

I look forward to your new version. I also found that I did indeed register back near the end of March! I guess we know why I rely on the Palm so much! Let me know when you get the "ignore nasty apps" feature working.

Many Thanks on the quick response,

Greg

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 9, 1999 - 11:18 pm:

You indeed did register LeftHack, March 24th 1999. Thank you! :)

Neal

By **Greg Gibson** on Tuesday, December 28, 1999 - 01:12 pm:

I am trying LeftHack, loaded last night. Being left handed I can see this is really going to help. One issue that came up is that the scroll bar for AvantGo stays on the right side. Is this app left savvy?

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 28, 1999 - 05:00 pm:

AvantGo is not left-savvy. It drops your machine into grayscale mode and draws all its own controls.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

TickHack under Palm OS 3.3

[Quartus Handheld Software: Discussion Forum](#): [Other Quartus Products](#): **TickHack under Palm OS 3.3**

By [Stephen C. Gilardi](#) on Saturday, October 23, 1999 - 06:17 pm:

I like the new discussion software very much!

I use TickHack. I recently upgraded my Palm IIIx to Palm OS 3.3 and I noticed that TickHack now ticks periodically even when there is no corresponding user input. I just confirmed that even with the Palm completely without input, I hear a tick about once a minute or so in both Launcher III and MineHunt. I believe this is true no matter what App is running. I also confirmed that the periodic ticking goes away when I turn off TickHack in HackMaster.

I assume OS 3.3 is producing some kind of event every minute or so that TickHack is interpreting as something it should tick for.

Has anyone else experienced this?

Might there be a future update to TickHack to avoid this?

I noticed that TickHack is not listed as a Quartus Product in the product listing, but it is still in the file area. I'd appreciate hearing any discussion or advice about this.

Thanks,

--Steve

By [Neal Bridges](#) on Saturday, October 23, 1999 - 11:45 pm:

I re-wrote it on the plane, using Quartus Forth on my new Palm Vx. I'll make it available -- with source -- tomorrow!

Neal

By [squeegee@usa.net](#) on Sunday, October 24, 1999 - 12:35 am:

Cool. Thanks!

--Steve

By [Neal Bridges](#) on Sunday, October 24, 1999 - 12:56 am:

It's available in the File Area -- give it a try, let me know what you think! I wrote it on the plane back from PalmSource '99.

Neal

By [Stephen C. Gilardi](#) on Monday, November 1, 1999 - 03:50 pm:

It works great! Thanks!

I noticed from the source that you now ignore keystrokes with the "command" attribute. Is that the fundamental difference with TickHack 2.0?

Did you ever figure out what "command keystroke" is being issued by the new Palm OS 3.3 every mintue or so?

Thanks again for updating TickHack!

--Steve

By [Neal Bridges](#) on Monday, November 1, 1999 - 03:52 pm:

You're welcome! And yes, that is the major enhancement, though I also spent the time during the flight making the code tighter and cleaner.

I'm not sure what the extra tick is; perhaps it's power status notifications. I'll see if I can find out.

Neal

By [Neal Bridges](#) on Monday, November 1, 1999 - 03:59 pm:

That was it, in fact -- it's a low-battery message, but it's sent even when the battery is not low, and hence doesn't cause the 'battery low' dialog. Likely it was introduced to increase the diligence of the power-status logic.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Everything else!

[Quartus Handheld Software: Discussion Forum](#): Everything else!

Welcome to *Everything else!*. You may enter any of the discussions below by clicking on the appropriate link. Or, to start a new discussion of your own, click on the "Create New Conversation" button.

- [User Contributions](#) March 13 - 10:43 am
- [Best Development Palm for Quartus](#) March 1 - 11:39 am
- [Forth Word Archive](#) February 23 - 08:38 am
- [Number or Defined words?](#) February 18 - 10:32 pm
- [Forth Wiki now online](#) February 16 - 08:55 am
- [Pedit and pedit32 for palm Qartus development](#) February 10 - 10:46 am
- [Serial IR](#) February 10 - 09:47 pm
- [Palm V battery life](#) February 1 - 09:39 am
- [Y2K](#) January 28 - 01:58 pm
- [Quartus discus UserNames](#) January 25 - 01:08 pm
- [Help on abbreviations](#) January 24 - 08:40 pm
- [Creator ID?](#) January 13 - 07:12 pm
- [Corrupt database](#) January 9 - 04:36 pm
- [Selling apps on PalmGear -- What is their cut?](#) January 3 - 01:01 pm
- [Interesting thread going on about Forth at slashdot...](#) January 2 - 08:23 pm
- [Argghhh, The Palm Creator ID database is still down!](#) January 2 - 08:22 pm
- [OS 3.3 fix duplicate shortcuts problem?](#) December 30 - 11:24 am
- [Application ideas](#) December 28 - 08:26 am
- [Palm Vx buttons](#) December 28 - 09:17 am
- [CMOVE and string concatenation](#) December 25 - 02:48 pm
- [Demo Model and Graffiti on Palm III](#) January 31 - 08:48 am
- [DOC Format and Compression Algorithms](#) December 23 - 09:13 pm
- [D** and F**](#) December 20 - 11:41 am
- [Other Forths](#) December 12 - 09:50 am
- [Part II: The Non Sequitur.](#) December 12 - 04:10 pm
- [Idiotic Forth \(not QF-specific\) question.](#) December 9 - 03:42 pm

- [Proxy Server compatilby with Palm using AOL and AvantGo software application](#)
November 11 - 10:50 pm

User Contributions

[Quartus Handheld Software: Discussion Forum: Everything else!:](#) User Contributions

By [Jim Hendricks \(Jimh\)](#) on Monday, March 13, 2000 - 10:00 am:

Neal,

What is the procedure for submission of a User Contribution to the files area? I have a clock I threw together from some "C" source available through the astrasoft website. I used it as my basis but changed the code drastically so I beleive I can release it under my own copyright. I wanted to release it as User contributed as freeware to return to this community for all the help it has provided me (besides it's the first Quartus App I actually can consider finished out of the 5-7 apps I have bakeing...)

Thanks, Jim

By [Neal Bridges \(Nbridges\)](#) on Monday, March 13, 2000 - 10:31 am:

Great, Jim! Mail it to support@quartus.net and I'll post it.

Neal

By [Jim Hendricks \(Jimh\)](#) on Monday, March 13, 2000 - 10:43 am:

OK, later today, just cleaning up the code and moving it from DOC to memo.

Jim

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Best Development Palm for Quartus

Quartus Handheld Software: Discussion Forum: Everything else!: Best Development Palm for Quartus

By [Alex Alava](#) on Monday, February 28, 2000 - 06:19 pm:

Neal, what is the best development Palm for Quartus? I know that you have several and have tried them all.

Palm IIIx

Palm IIIx w/ TRG xtra xtra Pro

Palm Vx

Palm IIIc

Palm IIIxe

I am considering getting a Palm Vx.

By [Neal Bridges \(Nbridges\)](#) on Monday, February 28, 2000 - 07:44 pm:

I like the Vx. It's fast and has very clean lines; the screen is excellent and the battery life is good. The screen surface feels better for writing than do some of the other units. It's size makes it extremely portable, and it has 8 megs of RAM. Unless you're specifically developing for colour, I'd recommend the Vx as the top unit to get.

If size isn't a factor, the IIIxe looks attractive on paper -- I haven't used one yet though.

Neal

By [Alex Alava](#) on Tuesday, February 29, 2000 - 01:34 am:

Thanks for the input. What about a case. What would you recommend for carrying it around? I'd hate to end up getting a bulky case that would detract from the nice lines of the Vx.

By [Neal Bridges \(Nbridges\)](#) on Tuesday, February 29, 2000 - 07:22 am:

The Dooney & Bourke leather case.

<http://www.the-gadgeteer.com/dooney&bourke-review.html>

Neal

By [Barry Ekstrand](#) on Wednesday, March 1, 2000 - 08:11 am:

A second nod to both the Vx and the Dooney&Bourke leather case from my house as well - great machine, case looks nice and offers good protection without too much bulk, also allows you to put a couple of business cards in it also.

Barry Ekstrand

By [Erwin Schomburg](#) on Wednesday, March 1, 2000 - 09:41 am:

I beg to differ, various series III units (now up to IIIc) with nothing but the flip cover gave me the optimum in portability combined with (screen) protection. As an extra theft/crash from shirtpocket protection I learned to love the ForceBond clasp cum neckstrap.

But as always, YMMV, to each his own.

/Erwin

By [Alex Alava](#) on Wednesday, March 1, 2000 - 11:05 am:

Thanks for everyones input. Fry's here in Silicon Valley is advertising the IIIxe for \$249 but I have my mind set on the Vx. Trying to get to a friend of a friend who works at Palm. Trying to get a good price.

By [Matthew Blair \(Blair\)](#) on Wednesday, March 1, 2000 - 11:39 am:

And if you get a good price, maybe you could be our friend who knows a friend who knows a friend who works at Palm... :^)

(All these levels of indirection are starting to remind me of C -- gack!)

Matt

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Forth Word Archive

Quartus Handheld Software: Discussion Forum: Everything else!: Forth Word Archive

By [martian](#) on Monday, February 21, 2000 - 08:21 pm:

Hi All

I've spent the last few days porting a web forum I wrote a while back to be an archive of Forth words. I've done this because I'm a Forth newbie who really needs a resource like this.

The original forum allowed for threaded discussion, so this does too. These threaded discussions are attached to the description of a particular Forth word. I envision people asking questions about the implementation of specific words, and the threaded answers building up to become a useful resource for new Forthers (like me).

The port is not complete; however, it's far enough gone that I can ask people to come and add new words to the system. I've been adding the ANS standard words (I'm up to 'I' or thereabouts) but I've added categories for all the files that come in the Quartus library. (I may have missed some, and some may be there twice...)

The system needs moderators. Moderators can approve new words for inclusion in the main list, and words they post get approved automatically. They will also have other functions available to administer the site.

If you would like to be a moderator, please [Mail me](#)

The system additionally requires people to post new words and their meanings- mainly the ones in the Quartus libraries but I can add new categories which represent other Forth dialects or whatever - eventually the categories will be controlled by the moderators. (Mail me at martian@marsbard.com to add new categories)

So come and have a look at the development system: [SoForth](#) - don't expect it to be a polished app... things may change in front of your very eyes, since this is my development version (and if I am working on it, the site will almost definitely exhibit strange bugs) but you should be able to add words to the system, play around and feedback any relevant opinions to me.

The (very) beta system is at [SoForth](#)

By [martian](#) on Monday, February 21, 2000 - 08:23 pm:

BTW, if you're looking, you will only find words defined in the 'ANS core' category at the moment - feel free to add words from the Quartus libs to other sections

By [Neal Bridges \(Nbridges\)](#) on Monday, February 21, 2000 - 08:24 pm:

You might want to title it "Quartus Forth Words and their Meanings" so as not to confuse users of other Forths who happen upon your site.

Neal

By [martian](#) on Wednesday, February 23, 2000 - 04:51 am:

Not a bad idea, since I've mainly focussed on the files that come with the Quartus library for my group headings; although this might not be such a great plan since the ANS core section is so big compared to the number of words in most of the library files.

I might yet group the Quartus files together; and allow categories for other Forths.

BTW is it ANS Forth or ANSI Forth, or either?

By [Neal Bridges \(Nbridges\)](#) on Wednesday, February 23, 2000 - 08:38 am:

I prefer "ANSI Forth", though "ANS Forth" is more correct.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Number or Defined words?

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Number or Defined words?

By [Harry](#) on Friday, February 18, 2000 - 09:41 pm:

The following code in my program took me a few hours to find the bug!

```
hex
create foo 10 c, 20 c, A0 c, B0 c,
decimal
```

Finally, I found the problem is that the A0 is not a NUMBER! my god!

I like the eforth convention to make HEX number with a \$ sign prefix. It is a more straight forward way to write program. Is'nt it, Neal.

Harry

By [Neal Bridges \(Nbridges\)](#) on Friday, February 18, 2000 - 10:23 pm:

It may be, but it's not Standard. Best practice is to prefix all hex numbers with a 0, as in:

```
hex
create foo 010 c, 020 c, 0A0 c, 0B0 c,
decimal
```

Then there's no chance for confusion. If you'd rather, redefine A0 and D0:

```
: registerA0 a0 ; inline
: a0 (hex) a0 ; inline
: registerD0 d0 ; inline
: d0 (hex) d0 ; inline
```

Neal

By [Neal Bridges \(Nbridges\)](#) on Friday, February 18, 2000 - 10:32 pm:

Another option:

```
create foo (hex) 10 c, (hex) 20 c, (hex) a0 c, (hex) b0 c,
```

Neal

Add a Message

Username:

Password:

E-mail:

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Forth Wiki now online

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Forth Wiki now online

By [Tim Chase](#) on Wednesday, February 16, 2000 - 08:55 am:

Ulrich Hoffmann has set up a Forth wiki at
<http://hammer.prohosting.com/~uho/wiki/html/Forth/FrontPage.htm>.

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Pedit and pedit32 for palm Qartus development

Quartus Handheld Software: Discussion Forum: Everything else!: Pedit and pedit32 for palm Qartus development

By [Paul Nevai](#) on Thursday, February 10, 2000 - 10:46 am:

Hi Guys:

Will you kill me if I plug my pedit and pedit32?
I'll be very short. Please visit
<http://www.math.ohio-state.edu/~nevai/palm/>
and you life on the palm will never be the same.

Best regards, Paul

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Serial IR

[Quartus Handheld Software: Discussion Forum: Everything else!: Serial IR](#)

By [Francois Vignon](#) on Thursday, February 3, 2000 - 03:28 am:

Hi everybody

I'm looking how to send and receive data to/from IR without IrDa (serial standard communication, like rs232 but with IR) ?

Many thanks in advance

By [Neal Bridges \(Nbridges\)](#) on Thursday, February 3, 2000 - 11:48 am:

Start here:

<http://www.quartus.net/discus/messages/23/67.html?TuesdayDecember719991035pm#POST419>

Neal

By [Francois Vignon](#) on Friday, February 4, 2000 - 03:06 am:

Thanks Neal.

I try this (taken from a other discussion thread) but it's appear it's doesn't work (perhaps my test are wrong ..., i'm using OS 3.3)

if you say it's work, I go to make better test ...

Have nice day.

Francois

By [Neal Bridges \(Nbridges\)](#) on Friday, February 4, 2000 - 09:38 am:

It evidently works, though as you can see from the earlier thread, there's some question as to whether the port stays open after you switch off the IR. But it reportedly does make the IR work.

Neal

By [Francois Vignon](#) on Friday, February 4, 2000 - 11:21 am:

yes but I have found some strange behavior: my test prog works fine on a PV but not on a PIII: it's something like:

```
create buf 65 c, 66 c, 67 c, 68 c, 20 c,
```

```
: go ( - )
```

```
2400. serOpen
```

```
irEnable
```

```
buf 4 serSend drop
```

```
1000 set-timeout
```

```
buf 4 serRecv drop
```

```
buf 4 type
```

**irDisable
serClose**

;

on a P3, the program exit directly after showing ABCD (and with irEnable/Disable removed it's work on a rs232)

and on a P5 it's work fine ...

if you have some idea ...

By [Neal Bridges \(Nbridges\)](#) on Friday, February 4, 2000 - 11:31 am:

Is it exiting after the irDisable, or after the serClose? And is that the entire program?

Neal

By [Francois Vignon](#) on Saturday, February 5, 2000 - 02:59 am:

oh sorry for the misunderstanding. When I say exit, it's the exit of 'go', not quartus. it's run without waiting something in serRecv (I have not test the result of serRecv, maybe it's a error code ;-))

and yes, it's the entire program (only for test purpose, of course, and without irEnable/Disable definition, nor some needs like serial and so ...)

Bye

By [harry chou](#) on Thursday, February 10, 2000 - 09:47 pm:

Hi,

My previous test was done on [Palm V], it was operating fine except the problem of serclose.

Add a Message

Username:

Password:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

E-mail:

Palm V battery life

[Quartus Handheld Software: Discussion Forum: Everything else!:](#) Palm V battery life

By [Francois Vignon](#) on Monday, January 31, 2000 - 10:08 am:

I'm looking to change my Palm III for a Palm V and I want your opinion about battery life. Is the battery life of P5 (without recharge) 2 or 5 or 10 times shorter than alkaline of P3, by example ?

By [Jim Hendricks \(Jimh\)](#) on Monday, January 31, 2000 - 01:07 pm:

The V does seem to consume battery at a faster rate. I base this on heavy use of my V on the weekend without recharge(meaning also no sync) and by Monday am, the V was at 38%. On my old III, I could do a heavy weekend and still enjoy 55-60% battery by Monday. Kinda hard to measure though since I don't know if I was possibly using the V longer than my benchmark heavy weekend with my III. Now we are talking extensive amounts of time, I was sick that weekend so all I had to do was play around with a few games and experiment in Quartus so overall you are probably talking 10 - 15 hours of use over the weekend. What makes measuring the difference even harder is I drop my V into it's cradle at work so I can leave it on and use it on charge. My personal opinion is that the smaller form factor, better screen & backlight, and built-in rechargeable cells rechargeable from the cradle is worth the move from the III to the V (I did it). Additionally since I travel alot, I purchased the V travel kit which also gives me a recharge plug I can set up at home so I can leave my V on charge overnight if I want.

Hope this helps, Jim.

By [francois vignon](#) on Tuesday, February 1, 2000 - 03:01 am:

Many thanks for your help.

when you say, for P3, 55-60% battery, you talk alkaline battery or rechargeable battery ? (my english is bad, maybe the answer is in the word, but you use "battery" for Palm V and Palm III :-)

By [Jim Hendricks \(Jimh\)](#) on Tuesday, February 1, 2000 - 09:39 am:

When refering to the Palm III, I am using battery to mean alkaline. I only used alkaline batteries for a short time on my Palm III before I converted first to NiCad's then to NMHy. With alkaline, I usually got 4 weeks, with NiCad's 2.5 weeks, NMHy 3 weeks. With the rechargeables though I found that the voltage drop off at the end of the discharge cycle was much quicker than alkaline so I always kept a spare set handy. Since I was already used to the shorter charge span of rechargeables with my Palm III, when I purchased the Palm V with built-in rechargeables, I expected a shorter charge time but looked forward to not having to charge since the charge occurs when the Palm sits in the cradle (which is something I always do at the office anyway for easy access to the unit).

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Y2K

Quartus Handheld Software: Discussion Forum: Everything else!: Y2K

By **Yaakov** on **Friday, January 28, 2000 - 12:37 pm:**

Just have noticed that on the page <http://www.quartus.net/files/PalmOS/Forth/> the date in the Contrib line is 100/1/4

:)

By **Neal Bridges (Nbridges)** on **Friday, January 28, 2000 - 01:54 pm:**

Wow! My own Y2K bug! :)

Neal

By **Neal Bridges (Nbridges)** on **Friday, January 28, 2000 - 01:58 pm:**

Fixed now. Thanks!

Neal

Add a Message

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Password:

E-mail:

Quartus discus UserNames

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Quartus discus UserNames

By [Jim Hendricks](#) on Tuesday, January 25, 2000 - 11:38 am:

Neal, I seem to recall awhile back (I searched and didn't seem to find unless it's in the archives) someone requesting a username and password for this board. At the time I didn't see any need for it but now I am interested since with a username, I can do a review of new messages since the last time I checked based on my username. Let me know if this is still available and what I need to provide you for issue of an un/pw.

Thanks, Jim

By [Neal Bridges \(Nbridges\)](#) on Tuesday, January 25, 2000 - 01:08 pm:

Send me an email, Jim, with your desired userid and password.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Help on abbreviations

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Help on abbreviations

By [Matthew Blair \(Blair\)](#) on Monday, January 24, 2000 - 12:30 pm:

Hi,

I'm generating bookmarks for the Quartus Systraps DOC file. I've come across several abbreviations that I'm not sure of. Can you help?

Dlk
Imc

I am doing this because, in general, I know which call I want, but not the stack diagram. So I have to scroll down or up until I get to where I want, which can take a while... Hence, I'm putting in bookmarks for every class of functions.

Thanks,

Matt

By [Neal Bridges \(Nbridges\)](#) on Monday, January 24, 2000 - 08:40 pm:

Dlk = Desktop Link
Imc = Internet Mail Consortium

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box

Password:

empty. Your e-mail address is optional.

E-mail:

Creator ID?

[Quartus Handheld Software: Discussion Forum: Everything else!:](#) Creator ID?

By [Bill Marcy](#) on Wednesday, January 12, 2000 - 09:07 am:

What is up with Palm, their creator ID database has been down for what, going on three weeks now?

Anyone have any idea how long it is going to remain down?

By [LGLisle](#) on Wednesday, January 12, 2000 - 04:13 pm:

Bill,

I've set them EMail twice now with no reply. I looked at the discussion board and could find no mention of the problem. The Knowledge base is down too.

---- Greg

By [Mark Beckman](#) on Wednesday, January 12, 2000 - 05:03 pm:

"They" (Palm) have mentioned that the server that handles "active" content (I.E. Knowledge base and creator ID) is down. It was about to be replaced anyway so they are just trying to get the replacment up instead of fixing the old one. As far as when I thing they have just been saying "Soon"

By [LGLisle](#) on Wednesday, January 12, 2000 - 05:34 pm:

Mark,

Thanks much for the info. We all know what "real soon now" means.

---- Greg

By [Mark Beckman](#) on Thursday, January 13, 2000 - 10:11 am:

From the palm-dev-forum:

We had a rather catastrophic failure on our database server (which is why its been down so long). The current ETA is the end of this week. We should have database access by Thursday evening but I'll need a bit of time to test everything.

I'm really hoping to have the KB, Creator ID pages, and Email Pages back up by Friday afternoon.

Ryan Robertson
Palm Development Support

By [Mark Beckman](#) on Thursday, January 13, 2000 - 07:12 pm:

From the palm-dev-forum:

Hello Everyone,

Under-promise and over-deliver -- that's our new philosophy. The Knowledge Base, Creator ID, and Technical Questions pages are back up and working! Please email me with any problems you come across. Thanks for being patient!
Ryan Robertson Palm Development Support

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Corrupt database

[Quartus Handheld Software: Discussion Forum: Everything else!:](#) [Corrupt database](#)

By [Jim Hendricks](#) on Friday, January 7, 2000 - 12:02 pm:

I guess I must now include myself in the selected group of people called "developers", I have officially corrupted my first palm database (actually 2 of them since I just had to do it again to see if I really did the dirty deed!)

What I did was change a databases resource flag from rsrcredit, apparently not a brilliant choice since now anytime I attempt to access the database I get a fatal exception! Now what I need to find out is how to recover from this situation. I had hoped to just delete the offending database but I can't even do that. If a hard reset is required and reload from backup then so be it but I hoped there would be another solution. Thanks, Jim

By [Neal Bridges \(Nbridges\)](#) on Friday, January 7, 2000 - 06:02 pm:

An interesting problem. If you knew what memory location that flag was at, you could over-write it from Quartus Forth with a bit of clever code. Trick would be trying to find the address.

Neal

By [Neal Bridges \(Nbridges\)](#) on Saturday, January 8, 2000 - 12:31 am:

Hmm, you could determine the location in the database header of that flag, search the entire Palm memory for the name of the database, locate that byte, switch off the memory protection semaphore, re-write the byte, and switch memory protection back on. That'd do it. So it's technically possible, just very painful to achive. :)

Neal

By [Jim Hendricks](#) on Saturday, January 8, 2000 - 02:10 pm:

Thanks for the idea's, just decided to do a hard reset and reload (thank God for BackupBuddy!)

This will teach me next time not to change the resource flag!

By [Wade Carlson](#) on Sunday, January 9, 2000 - 12:47 am:

For the benefit of other users, so that we will not make the same mistake, what exactly did you do? Did you just check or uncheck the ResourceDB box and hit apply? Thanks

By [Jim Hendricks](#) on Sunday, January 9, 2000 - 04:36 pm:

Well, I did both, check on one database, uncheck on another, kinda stupid I know but I just couldn't believe that an incorrect resource setting could cause the db to be unreadable.

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Selling apps on PalmGear -- What is their cut?

[Quartus Handheld Software: Discussion Forum: Everything else!:](#) **Selling apps on PalmGear -- What is their cut?**

By **[Matthew Blair \(Blair\)](#)** on Monday, January 3, 2000 - 12:07 pm:

Hi,

Just wondering how PalmGear gets paid for the apps it sells on their web site. Do they get a percentage of each sale, or a flat fee, or what? Hoping some of the more experienced members of this site can enlighten...

Also, if one wanted to designate an app as "char-ware", how would they do that?

Thanks,

Matthew

By **[Neal Bridges \(Nbridges\)](#)** on Monday, January 3, 2000 - 12:25 pm:

PalmGear's rates are all detailed at their site. For special considerations, like donating the proceeds from software to charity, I suggest you write to Kenny West at kennyw@palmgear.com.

Neal

By **[Matthew Blair \(Blair\)](#)** on Monday, January 3, 2000 - 12:38 pm:

I had taken a look at the **Partner Information** page; hence the first post here. I only did not understand the statement that "PalmGear H.Q. retains 20% of the cost in return for processing...". Is that 20% of the cost of the title, one time only? Or is that a recurring monthly cost? Or is that a percentage of the sale?

I asked here since there are more than a few participants in this forum who have gone through this process, most notably yourself... :^)

Matthew

By **[Neal Bridges \(Nbridges\)](#)** on Monday, January 3, 2000 - 01:01 pm:

Oh sorry, didn't know what you were confused about :) It's a percentage of each sale. It's quite a bite, but they do handle all the aspects of the sale in exchange.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Interesting thread going on about Forth at slashdot...

[Quartus Handheld Software: Discussion Forum: Everything else!:](#) Interesting thread going on about Forth at slashdot...

By [Bill Marcy](#) on Sunday, January 2, 2000 - 08:23 pm:

Follow this link for an interesting thread on Forth.

<http://slashdot.org/article.pl?sid=00/01/02/1517200&mode=thread>

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Argghhh, The Palm Creator ID database is still down!

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Argghhh, The Palm Creator ID database is still down!

By **[Bill Marcy](#)** on Sunday, January 2, 2000 - 08:10 pm:

Title says it all. Very annoying.

By **[Neal Bridges \(Nbridges\)](#)** on Sunday, January 2, 2000 - 08:22 pm:

No kidding. Annoying for me also.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

OS 3.3 fix duplicate shortcuts problem?

[Quartus Handheld Software: Discussion Forum: Everything else!](#): OS 3.3 fix duplicate shortcuts problem?

By [Matthew Blair \(Blair\)](#) on Thursday, December 30, 1999 - 10:53 am:

Just wondering if OS 3.3 fixed the duplicate shortcuts problem. I noticed that the dbScan program reports no duplicate shortcuts after I've reset my Palm III quite a few times...

Matt

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 30, 1999 - 11:24 am:

Yes, that's one of the things fixed in 3.3.

Neal

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Application ideas

Quartus Handheld Software: Discussion Forum: Everything else!: Application ideas

By [Matthew Blair](#) on Monday, December 27, 1999 - 12:29 pm:

Hi,

There used to be a site where Palm users would submit their "wish list" for applications. That site went stale. Does anyone know of another site which is continuing that bridge between developers and the potential users?

Thanks,

Matt

By [Neal Bridges \(Nbridges\)](#) on Monday, December 27, 1999 - 03:58 pm:

Here's a good place -- as is the UseNet group comp.sys.palmtops.pilot.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, December 28, 1999 - 07:51 am:

Thanks. I'll check out the Usenet group. Was there supposed to be a link at the bottom of your post?

Also, I found a site yesterday:

[The Palm Tree](#)

Matt

By [Neal Bridges \(Nbridges\)](#) on Tuesday, December 28, 1999 - 08:14 am:

I think you mean

<http://www.thepalmtree.com>

And no -- no link in my message, I meant here, this discussion forum.

Neal

By [Matthew Blair \(Blair\)](#) on Tuesday, December 28, 1999 - 08:26 am:

I could've meant that, yes... I'm trying to get the hang of the formatting codes...

Thanks for the pointers!

Matthew

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Palm Vx buttons

[Quartus Handheld Software: Discussion Forum: Everything else!:](#) Palm Vx buttons

By [Jim Hendricks](#) on Monday, December 27, 1999 - 08:16 am:

Yah Hoo, Santa was kind and put a Palm Vx under my tree for Christmas. Already own the palm III but the Vx is a great upgrade. Just experiencing an annoyance of the new design and was wondering if any other owners were experiencing the same thing. When I have the Vx in my pocket, it turns on and starts beeping. Turns out any pressure to the lower part of the cover presses one of the 4 hard app buttons and turns the unit on. Once the unit is on, any additional pressure on the cover presses the up button causing the beeping. Anyone else experiencing this problem? Any proposed solutions? Any hacks out there that turn off the hard buttons when the unit is off? Thanks, now I gotta go play with the unit!

Jim

By [Neal Bridges \(Nbridges\)](#) on Monday, December 27, 1999 - 08:59 am:

Try PalmVHack, at <http://www.rgps.com>. It's what I use.

Neal

By [Jim Hendricks](#) on Tuesday, December 28, 1999 - 09:17 am:

Thanks, I will give it a try and see how it works. I was hoping I wasn't the only one having this problem.

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

CMOVE and string concatenation

[Quartus Handheld Software: Discussion Forum: Everything else!:](#) CMOVE and string concatenation

By [Philippe de Rochembeau](#) on Saturday, December 25, 1999 - 02:44 pm:

What is the equivalent of CMOVE in QForth?

How do you concatenate strings in QForth? I would like to concatenate a string, a value, and another string and copy the resulting string to a field:

." The final value is " value @ ." %" string>Field

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 25, 1999 - 02:48 pm:

For most every purpose, **MOVE** will do the trick as well as **CMOVE**. **CMOVE** can be used in a tricky way to fill a range of memory with a certain character, but there are better ways to do that with the Palm OS anyway (**MemSet**).

For appending strings, check out **append** in the *toolkit.txt* library module.

Neal

Add a Message

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Password:

E-mail:

Demo Model and Graffiti on Palm III

[Quartus Handheld Software: Discussion Forum: Everything else!:](#) Demo Model and Graffiti on Palm III

By [Harry Gleitz](#) on Saturday, December 25, 1999 - 12:38 pm:

Neil,
Can you share with me the program which you mentioned to Carpenter on alt.comp.sys.palmtops. pilot? I find myself in the same fix with a Palm III

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 25, 1999 - 02:03 pm:

Harry, I will send you the Demo-Off! program, but it'll have to wait 'till tomorrow evening.

Neal

By [Doug Turner](#) on Monday, January 31, 2000 - 12:22 am:

Will this Demo-Off! program work with older models? I have a Palm Pilot Professional running system 1.0.6 and 128k. Will it fit with that little memory?

By [Neal Bridges \(Nbridges\)](#) on Monday, January 31, 2000 - 08:48 am:

Should do. Would you like to try it?

Neal

Add a Message

Username:

Password:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

E-mail:

DOC Format and Compression Algorithms

[Quartus Handheld Software: Discussion Forum: Everything else!](#): DOC Format and Compression Algorithms

By [Matthew Blair](#) on Thursday, December 23, 1999 - 10:14 am:

Hi,

Just wondered if anybody knew the format of DOC files and the compression algorithm associated with it. I'm toying with the idea of creating a DOC reader/editor (reinventing the wheel!), and I have not been able to find any information about the format.

Thanks,

Matt

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 23, 1999 - 10:33 am:

The *doc* library module can read and decompress them. I have somewhere a link that details the compression/decompression methods; I'll search for it.

Neal

By [Zvlv](#) on Thursday, December 23, 1999 - 11:34 am:

Enjoy,
<http://pyrite.linuxbox.com/>

By [Zvlv](#) on Thursday, December 23, 1999 - 11:36 am:

Huge thanks to both of you. I learn every day from you hehehe.

Hope the previous post will help.

By [Zvlv](#) on Thursday, December 23, 1999 - 11:38 am:

Huh ?? The link does not seem to work...

Let's try again...

`link{http://pyrite.linuxbox.com/}`

Yup !!! Apologies about previous unworking link.

By [Matthew Blair](#) on Thursday, December 23, 1999 - 01:56 pm:

Thanks!

I don't understand, however, what to do when one encounters a "type A command" (byte

codes 0x01 through 0x08). Can you explain?

Thanks again,

Matthew

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 23, 1999 - 04:31 pm:

Take a look at the *doc.txt* library source; it should help you understand the decompression a bit better.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 23, 1999 - 09:13 pm:

Had a chance to review it myself. The 1 through 8 codes indicate that the next 1 through 8 bytes are to be transcribed verbatim... kind of an extended 'escape'.

Neal

Add a Message

Username:

Password:

E-mail:

This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

D** and F**

[Quartus Handheld Software: Discussion Forum: Everything else!: D** and F**](#)

By [Philippe de Rochambeau](#) on Saturday, December 18, 1999 - 06:52 pm:

How would you implement D** (d1. to the power of d2.) and F** (same thing with floats) in Quartus Forth?

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 18, 1999 - 09:12 pm:

FEXP is a Standard word, an implementation of which is in the Contrib library --

<http://www.quartus.net/files/PalmOS/Forth/Library/FEL.txt>

I'd implement the integer one with a simple loop.

Neal

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 18, 1999 - 09:24 pm:

Sorry Philippe, disregard that message completely. I appear to have broken my own rule of not trying to think on an empty stomach. F** is of course a Standard word that has nothing to do with FEXP, or not much.

I'll eat now and then get back to you. :)

Neal

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 18, 1999 - 10:05 pm:

Ah, much better. Now to make amends.

<http://www.quartus.net/files/PalmOS/Forth/Library/FEL.txt>

contains FX^Y, which is actually F** under a different name. To my small relief, it uses FEXP, so I was at least in the ballpark. :)

Give it a try.

Neal

By [Philippe de Rochambeau](#) on Sunday, December 19, 1999 - 04:48 am:

I have implemented s** (single to the power of ind) and d** (double to the power of ind) words. s** works fine, but d** crashes. I have a few questions (sorry, they are very basic):

- what do you use to multiply doubles, not * obviously (um* ?)
- is there a more efficient way to write the code below without using variables? How do you keep a copy of nbr within the do loop without losing it?

Finally, a more general question, is there a way to check whether a value is single or double (except than by checking if it is < or > 32000) in order to avoid duplicating functions such as the ones below?

Many thanks.

Philippe de Rochambeau

=====

```
variable nbr
variable prev
variable 2nbr
variable 2prev
```

```
: s** (u ind -- u**ind)
0 prev !
swap dup nbr ! prev !
1 - 0 do
prev @
;
```

```
: d** ( d ind -- d**ind)
swap dup 2nbr 2! 2prev 2!
1 0 do
2nbr 2@ 2prev 2@ * <-- do I use * here?
2prev 2!
loop
2prev 2@
;
```

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 19, 1999 - 10:51 am:

I think you have some code missing from your S** as it is presented here -- you have a DO with no LOOP.

Neal

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 19, 1999 - 04:02 pm:

The easiest way to write D** is to leverage the existing Fx^y. This gives you both positive and negative powers with no extra coding.

needs FEL

```
: D** ( d1. d2. -- d3. )
  2swap d>f d>f fx^y f>d ;
```

Then I'd write **S**** as a special case of **D****:

```
: s** ( n1 n2 -- n3 )
  >r s>d r> s>d d** d>s ;
```

To write a purely integer-based **D**** would require a **D*** routine first. I'd start there. Keeping the power as a single-cell integer will, however, suffice for your needs. 65536 is the first integer that requires a double-cell representation, and even 2 raised to that power overflows a double-cell result.

To multiply a double-celled value by a single-celled value, look at **M*/**, or see the library file *dblmath.txt*.

Neal

By [Ron Doerfler](#) on Sunday, December 19, 1999 - 04:49 pm:

Hi Philippe,

I use the following words for **D*** and **D/**. I don't guarantee that they are the most efficient, but they work for me.

Ron

```
needs double
needs dblmath
```

```
: dd>+ddsign
\ Makes two doubles positive and
\ adds a flag to tell if their product
\ and quotient should be negative.
( d1. d2. -- +d1. +d2. negflag )
2over 2over d0< rot rot d0< xor >r
2swap dabs 2swap dabs r> ;
```

```
\ From 072299 Quartus Forum post,
\ but modified as the posted version
\ didn't work for negative d2.
```

```
: d* (d1. d2. -- d1*d2. )
```

```
dd>+ddsign >r
>r >r 2dup
r> dm* 2swap
r> dm* drop 0 swap d+
r> if dnegate then ;
```

```
: d/ ( d1. d2. -- d1/d2. )  
dd>+ddsign >r  
ud/mod ( ud1 ud2 -- udr udq )  
2swap 2drop r> if dnegate then ;
```

By [Ron Doerfler](#) on Monday, December 20, 1999 - 11:41 am:

Oh, one more thing that I found out--don't be tempted to replace >R >R in the code with 2>R, as the latter swaps the order on the return stack. This is alright if you extract them with 2R>, but not in the case above where they are extracted one at a time.

Ron

Add a Message

Username:

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Password:

E-mail:

Other Forths

Quartus Handheld Software: Discussion Forum: Everything else!: Other Forths

By [Ben Snitkoff](#) on Saturday, December 11, 1999 - 09:51 am:

Does anyone know of a forth compiler for the Mac? If so it would be greatly appreciated! Also I'm looking for an Online tutorial that deals with not only text based forth, but forth with images(if it's possible).

Thanks
snitty

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 11, 1999 - 10:34 am:

There are several Mac Forths; have a look at <http://www.forth.org/compilers.html> for a start.

As for images -- can you provide more detail on what you want to do? Handling bitmaps in Forth is quite straightforward, both on the Mac and in Quartus Forth.

Neal

By [Ben Snitkoff](#) on Saturday, December 11, 1999 - 12:59 pm:

well, the easiest way is this,
<http://www.vogon.com/guide>, either one. . .I'm a Hitchhiker Geek, and want to be able to access the Guide anywhere any time. . .

Thanks
Snitty

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 11, 1999 - 01:07 pm:

If you like the Guide, I hope you've checked out <http://www.h2g2.com>.

Neal

By [Ben Snitkoff](#) on Saturday, December 11, 1999 - 03:28 pm:

well that didn't quiet answer my question, but thaks anyway

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 11, 1999 - 03:41 pm:

Sorry Ben, I wasn't clear on what you were after. I assume you want to port the HitchHiker's guide as it appears on the site you named to the Mac. Any Forth that allows you access to the Mac system calls should make that possible -- PocketForth is another one that comes to mind, I'm not sure if it's listed at the first site I gave you.

As for a tutorial for using images in Forth -- I can tell you I have never seen such a thing. However, the interface through to the underlying Mac system calls is quite clean for most Forth systems, and thus an understanding of how the Mac handles images would be valuable, along with some basic Forth knowledge. From there, it's a matter of experimentation and building.

Neal

By [Ben Snitkoff](#) on Saturday, December 11, 1999 - 05:28 pm:

Wow, if you had any idea how much of that went right over my head. . . but it dosent't matter. If you can suggest any good tutorials, I've found two really bad ones so far, so any help would be appreciated!

Thanks

Snitty

By [Serg](#) on Sunday, December 12, 1999 - 09:50 am:

For an excellent (and well supported) FORTH for the Mac, I'd suggest Mops: <http://www.netaxs.com/~jayfar> (and follow the links.)

It's non-ANSI, but it has some VERY nice features, an excellent manual and tutorial, and its own newsgroup.

**Cheers,
S**

Add a Message

Username:

This is a public posting area. If you do not have an account, enter your full name into the

Password:

"Username" box and leave the "Password" box empty. Your e-mail address is optional.

E-mail:

Part II: The Non Sequitur.

Quartus Handheld Software: Discussion Forum: Everything else!: Part II: The Non Sequitur.

By [E.](#) on Friday, December 10, 1999 - 07:13 pm:

Someone asked me what VALUE and TO were for. I felt fairly confident in saying that they were for making variable CONSTANTS. This should have been enough. But since one of my plethora of annoying habits is that to understand a Forth word/concept, I must re-write it, that's what I tried next. Writing MY-VALUE was fairly trivial.

```
: my-value
  constant
;
```

Of course, now that I'm posting it, I imagine it'd fail in compilation mode or something, yes? It can't be THAT trivial.

Anyway, I then went to write MY-TO. I can do it in interpretation mode really easily.

```
23 ' FOO >BODY !
```

What I CANNOT do is make a word that will do this for an arbitrary variable.

I gave up (after trying some amazingly naive things) and took a look at core-ext.txt, where I saw

```
: TO ( x "name" --)
  ' >body state @
  if postpone literal postpone !
  else ! then ; immediate
```

...which I THINK I understand, except for STATE.

What it looks like is that if STATE holds TRUE, then it will postpone storing the value in the name until it gets executed(? ...hits the semicolon?). Otherwise, it stores the value.

The problem is that, no matter what I try, I can't seem to get a true value in STATE. The ANS document says that it should be true if I'm in a compilation state.

```
STATE @ . 0 ok
: foo STATE @ ; ok
foo . 0 ok
: bar foo ; ok
```

```
bar . 0 ok
: baz foo . ; ok
baz 0 ok
```

I'm sure this is (in part) because of my confusion about POSTPONE, IMMEDIATE and friends. If someone felt like either explaining it or (hopefully) giving a pointer to a document containing a decent tutorial to this sort of "playing with the internals" stuff, I'd severely appreciate it.

By [Neal Bridges \(Nbridges\)](#) on Friday, December 10, 1999 - 07:46 pm:

You're dealing with some tricky stuff, interesting certainly, but just to reassure beginners, let me say it isn't all quite this hairy. :)

Ok. First, CONSTANTS are not defined internally using CREATE, so >BODY doesn't work with them. You'd need to redefine CONSTANT first.

```
: CONSTANT CREATE , DOES> @ ;
```

Note that you wouldn't really want to do this; while this is functionally equivalent, it is considerably slower in use than the CONSTANT that is built into Quartus Forth, as the resulting constants are not self-optimizing. Also, CONSTANTS defined with the above definition occupy dataspace, whereas 'native' constants created by the Quartus Forth kernel don't -- they live entirely in codespace. The above is provided merely by way of illustration to help you understand how it works on a surface level.

Anyway, let's talk about TO. It is an IMMEDIATE word, which means it executes during compilation instead of being compiled itself. It checks the current value of STATE to see whether we are compiling, or interpreting, and does the appropriate thing. If we are interpreting, it simply stores a cell from the stack into the VALUE that follows. If we are compiling, it uses POSTPONE to lay down code that will do this later.

Now, lastly, for peeking at the value of STATE, make your 'foo' word IMMEDIATE. Normally, definition names encountered when compiling cause the generation of code to call those definitions later; however, IMMEDIATE words are *executed* while compiling instead.

```
: foo state @ . ; immediate
```

Then

```
: bar foo ;
```

will display a non-zero value, as foo is encountered here while compiling; and

```
foo
```

used at the console will display a zero value (not compiling). Definitions flagged with IMMEDIATE do the same thing while interpreting as any normal non-IMMEDIATE definitions. The flag makes no difference while interpreting.

Hopefully this will spawn more questions. Fire away. :)

Neal

By [E.](#) on Saturday, December 11, 1999 - 03:39 am:

Apologies in advance for this quoting style. It's horrible, but I couldn't come up with anything better that was guaranteed to work, and I felt quoting this would be a Good Thing.

 Ok. First, CONSTANTS are not defined internally using CREATE, so >BODY doesn't work with them. You'd need to redefine CONSTANT first.

 Then gforth (which I use for exploring, since I'm much faster at it) does things differently.

```
12 constant lame ok
' lame ok
.s <1> 67339184 ok
dup @ ok
.s <2> 67339184 -57675800 ok
drop ok
dup >body ok
.s <2> 67339184 67339192 ok
@ ok
.s <2> 67339184 12 ok
```

This does not bode well for my strategy of using gforth to sort of prototype my Quartus programs.

 : CONSTANT CREATE , DOES> @ ;

This is Quartus' VALUE, yes?

 Note that you wouldn't really want to do this; while this is functionally equivalent, it is considerably slower in use than the CONSTANT that is built into Quartus Forth, as the resulting constants are not self-optimizing.

So the lesson here is that CONSTANTS are better (in Quartus) than VALUEs, if you can get away with them?

Side note: What about VARIABLES? In terms of efficiency, I mean.

The above is provided merely by way of illustration to help you understand how it works on a surface level.

That's exactly what I try to do to gain understanding. :)

Anyway, let's talk about TO. It is an IMMEDIATE word, which means it executes during compilation instead of being compiled itself.

Oh, wait. So you can execute code while compiling. Kinda of like, uh, #define in C? [I tried to think of something in perl, because I don't really speak C, but couldn't.]

It checks the current value of STATE to see whether we are compiling, or interpreting, and does the appropriate thing. If we are interpreting, it simply stores a cell from the stack into the VALUE that follows. If we are compiling, it uses POSTPONE to lay down code that will do this later.

So if IMMEDIATE code is run during compilation (vice runtime), POSTPONEd code isn't touched until runtime, or what?

Now, lastly, for peeking at the value of STATE, make your 'foo' word IMMEDIATE. Normally, definition names encountered when compiling cause the generation of code to call those definitions later; however, IMMEDIATE words are executed while compiling instead.

I THINK this is what I tried to say above, mod the crappy C analogy, yes?

: foo state @ . ; immediate

Ah. Because when I'm compiling that (my previous version), it just inserts the appropriate code into the definition of FOO, without actually executing it. STATE never actually gets checked during compilation. But with your code, it actually executes during compilation, which is when

STATE is set. Yes?

: bar foo ;

will display a non-zero value, as foo is encountered here while compiling;

As opposed to mine, which was checking STATE (through 2 layers of indirection) while I was actually running it from console?

and

foo

used at the console will display a zero value (not compiling).

Wow, I think I'm actually following this. <cross fingers>

Definitions flagged with IMMEDIATE do the same thing while interpreting as any normal non-IMMEDIATE definitions. The flag makes no difference while interpreting.

So IMMEDIATE means "If we're compiling, and you see this code, go ahead and run it. Otherwise, treat it normally."?

Hopefully this will spawn more questions.

Heh. Okay. If I can sum up IMMEDIATE (and I hope I'm doing it correctly) into a nice small sound bite, as in the last paragraph, can you do the same for POSTPONE?

Fire away. :)

You're a braver man than I am, Gunga Din.

(Yes, I'm aware it's a misquote, but hey. It fits.)

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 11, 1999 - 08:14 am:

1. You can certainly use GForth to prototype if you so choose; it is also a Standard Forth. The Standard does not require that CONSTANT be implemented using CREATE; some systems do it that way, some don't, but on all Standard systems CONSTANT works the same way regardless.
2. Yes, VALUE is implemented using CREATE in Quartus Forth. Again, this is implementation-specific; as long as VALUE has the semantics defined for it in the Standard, as an implementor I am free to use any technique to make it happen.
3. VALUEs are ever so slightly less efficient than CONSTANTs, yes, but they offer you the ability to alter them -- 'variable constants', as you said in your earlier posting. The lesson is not that CONSTANTs are better than VALUEs, but rather that you should refrain from arbitrarily re-implementing parts of the Quartus Forth kernel, as you will lose some of the integrated optimizations. As a bit of an aside, here is a more accurate version of the CONSTANT that lives in the version 1.2.6 kernel:

```

: CONSTANT
  >R : R>
  POSTPONE LITERAL
  POSTPONE ;
  INLINE
;

```

4. Yes, you can execute code while compiling. That is what IMMEDIATE words do. They execute 'immediately' instead of being compiled to be run later. There's no direct counterpart in C, though I suppose the preprocessor #defines, etc. are something like it.

It's important to remember that Forth does not operate in the same way that, say, C does. In C, the source is massaged at least twice, once by the preprocessor, and once by the compiler. A symbol table is built, and a series of passes are performed over the tokenized source to produce the final executable. By contrast, Forth is a single-pass compiler with no pre-processing step; this is one reason for its great speed.

Every 'token' in Forth is actually a subroutine that, while interpreting, is executed as it is encountered. For instance, the word : (colon) is in fact a small subroutine that writes a new definition header in the dictionary and sets STATE to a non-zero value, indicating to the interpreter that subsequent words are to be compiled instead of executed (unless they're IMMEDIATE, of course). ; (semicolon) is an IMMEDIATE word that compiles an EXIT, and then sets STATE back to zero.

5. POSTPONE is a word that lays down new code later, when the definition containing the POSTPONE is executed. For this reason, definitions containing POSTPONE are usually IMMEDIATE words, so they can execute during compilation.
6. About STATE -- yes. When you were checking it, you were always interpreting, so it was always 0.

7. Your thumbnail sketch of IMMEDIATE is accurate. Here's one for POSTPONE:

POSTPONE means 'compile the next word later'. Here's a contrived example:

```
: hello ." Hello!" ;  
  
: compile-hello postpone hello ; immediate  
  
: demo  
  compile-hello  
;
```

In demo, the word **compile-hello** does the same thing that a simple **hello** would achieve.

Neal

By [Neal Bridges \(Nbridges\)](#) on Saturday, December 11, 1999 - 08:26 am:

By the way, you can quote text using `\quote{}`.

Quote:

And you can quote me on that!

Neal

By [E.](#) on Saturday, December 11, 1999 - 11:33 pm:

Yay for a decent quoting style. Not so much yay for the length of this post.

Quote:

1. You can certainly use GForth to prototype if you so choose; it is also a Standard Forth. The Standard does not require that CONSTANT be implemented using CREATE; some systems do it that way, some don't, but on all Standard systems CONSTANT works the same way regardless.

So all I have to worry about (unless I get completely stupid) is the behavior as shown to me, the end user? That's good.

Quote:

2. Yes, VALUE is implemented using CREATE in Quartus Forth. Again, this is implementation-specific; as long as VALUE has the semantics defined for it in the

Standard, as an implementor I am free to use any technique to make it happen.

Ergo "yes" to my question above. Cool.

Quote:

3. VALUEs are ever so slightly less efficient than CONSTANTs, yes, but they offer you the ability to alter them -- 'variable constants', as you said in your earlier posting.

Well, "variable CONSTANTs". Otherwise, they're just VARIABLEs. <grin>

Quote:

The lesson is not that CONSTANTs are better than VALUEs, but rather that you should refrain from arbitrarily re-implementing parts of the Quartus Forth kernel, as you will lose some of the integrated optimizations.

This is mostly academic, as my Forth skill is not yet to the point where I worry too much about optimizations.

Quote:

As a bit of an aside, here is a more accurate version of the CONSTANT that lives in the version 1.2.6 kernel:

```
: CONSTANT  
>R : R>  
POSTPONE LITERAL  
POSTPONE ;  
INLINE  
;
```

Hm. So you've just POSTPONEd a definition of the word handed to you?

And you can >R/R> a whole word? This is better than endless thrashing around with NAME, as I've been doing. There's yet another word I have only the most tenuous of grasps on.

Quote:

4. Yes, you can execute code while compiling. That is what IMMEDIATE words do. They execute 'immediately' instead of being compiled to be run later. There's no

direct counterpart in C, though I suppose the preprocessor #defines, etc. are something like it.

Yeah. As far as I know, there's no direct counterpart in any language. Of course, I've only ever seen the "regular" languages.

Quote:

[snip]

By contrast, Forth is a single-pass compiler with no pre-processing step; this is one reason for its great speed.

And part of what makes it so difficult to explain to other people.

"So is it interpreted like perl, or compiled like C?"

"Not really. Or rather, yes."

Quote:

5. POSTPONE is a word that lays down new code later, when the definition containing the POSTPONE is executed. For this reason, definitions containing POSTPONE are usually IMMEDIATE words, so they can execute during compilation.

So IMMEDIATE lets you run at compiletime, and POSTPONE lets you compile at runtime(?). But this is "usually" at compiletime?

What would be the benefit of such a thing?

Quote:

6. About STATE -- yes. When you were checking it, you were always interpreting, so it was always 0.

Good to know I understand something. Sorta.

Quote:

7. Your thumbnail sketch of IMMEDIATE is accurate.

Hooray. :)

Quote:

Here's one for POSTPONE:

POSTPONE means 'compile the next word later'.

Where "later" is when? At runtime?

Quote:

Here's a contrived example:

: hello ." Hello!" ;

: compile-hello postpone hello ; immediate

**: demo
compile-hello
;**

In demo, the word compile-hello does the same thing that a simple hello would achieve.

So IMMEDIATE and POSTPONE are (very roughly) opposites?

Okay, wait. I think I see a use for it. I tried, a while back, to rewrite LOOP to do something. I forget what. But I'd have to have

```
: stupid-loop  
  [...]  
  postpone loop \ more likely +LOOP or something  
  postpone ;  
  immediate  
;
```

So that my new code is compiled at runtime, which is actually compiletime.

Am I close?

I hope so, because this is getting interesting again. :)

Ah. I see you do similar things when rewriting : and ; in safe.txt, which is vaguely similar. So I think I'm starting to see the light. Hm.

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 12, 1999 - 12:18 am:

1. Yes, don't worry about implementation details. By definition they will vary from implementation to implementation.

3. I provided the internal definition of CONSTANT merely by way of illustration -- but let me break it down further for you.

```
: CONSTANT ( x "name" -- ) \ "name" runtime: x
\ Put x someplace safe:
>R ( R: x )
\ Start defining "name":
:
\ Get x back:
R> ( x )
\ Compile x into "name" as a literal:
POSTPONE LITERAL ( )
\ End the definition of "name":
POSTPONE ;
\ Mark the new definition INLINE:
INLINE
;
```

5. POSTPONE and IMMEDIATE are implementation tools that allow you control over the internals of the compiler itself. They let things like *safe.txt* be written.

7. "later" is when the definition containing the POSTPONE is executed.

If at this stage you really want to dig further, try some examples of your own, and study the library files that use POSTPONE and IMMEDIATE. Here's a list of a few:

assert.txt
case.txt
condthens.txt
core-ext.txt
de.txt
do.txt
doe.txt
kit.txt
pre-ext.txt
regs.txt

Neal

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 12, 1999 - 12:31 am:

A further thought for you as regards CONSTANT: in Quartus Forth,

15 constant fifteen

is exactly equivalent to

```
: fifteen 15 ; inline
```

Neal

By [E.](#) on Sunday, December 12, 1999 - 12:57 am:

Dammit. I had this whole post typed out, and accidentally erased it.

Highlights:

Okay, I'll go off and poke around on my own, but... [Hydra mode on]

Quote:

```
: CONSTANT ( x "name" -- ) \ "name" runtime: x
\ Put x someplace safe:
>R ( R: x )
\ Start defining "name":
:
\ Get x back:
R> ( x )
```

If you have (x "name"), and do a >R, why does that grab x and not "name"?

[Not bothering to recreate some blather about LITERAL...]

After finding Julian Noble's basic Forth tutorial, I tried this:

```
: fool 5 6 + ; ok
: foo2 [ 5 6 + ] literal ; ok
see fool \ Reformatted to save some space
: fool
  5 6 +
; ok
see foo2
: foo2
  11
; ok
```

So other than a way of "pseudo-commenting" your code, there's got to be a REAL use for it, yes? I see it a lot in POSTPONEd stuff, but don't really see WHY.

By [E.](#) on **Sunday, December 12, 1999 - 04:21 am:**

Wait, wait, wait. I came back to take another look at it, and I think I get it. The first part, anyway.

[I've removed INLINE and comments...]

Quote:

```

: CONSTANT
  >R
  :
  R>
  POSTPONE LITERAL
  POSTPONE ;
;

```

The

```
>R : R>
```

bit that was confusing me is put in the same place where CONSTANT was.

This means that we go from

```
17 CONSTANT fuh
```

to

```
17 >R : fuh R>
```

[Because : reads "fuh" in from from the input-stream(?).]

So right before it gets handed off to be compiled, it's

```
: fuh 17 literal ;
```

(but see below again). And (because of the POSTPONES) it gets handed off to be compiled when "CONSTANT" is run. So by using CONSTANT, a word with the name "name" is compiled, and all it does is put (the LITERAL) x on the stack.

Am I getting closer?

So LITERAL is necessary here why? I know it's not just a style issue, because without it,

```
: my-constant
  >R : R> postpone ;
;
```

doesn't work, even though

```
: fuh 17 ;
```

does.

Below again: It is actually... what?

```
\pre
: fuh [ 17 ] literal ;
}
```

...with the brackets?

[and] seem to manipulate (in gforth, anyway) both STATE and some VARIABLE I can't identify. It looks as if [switches to interpret mode (a version of IMMEDIATE?) and] switches back to compile mode (which gives me similar errors to those I get when playing around too much with POSTPONE).

It seems to only be a FORM of IMMEDIATE, because it behaves slightly differently. More IMMEDIATEly, as it were.

```
: fool ." Hi!" cr ; immediate ok
fool Hi!
ok
: foo2 [ ." Hi!" cr ] ; Hi!
ok
: foo3 fool ; snuh!
ok
see foo2
: foo2
; ok
```

The really weird thing is that I think I understand what's happening.

Just not why [and] are used when making a LITERAL, nor what good LITERALS are.

The ANS draft seems to say "compile in some code that will produce the following number on

the stack at runtime". Unfortunately, this doesn't explain anything to me.

By [E.](#) on Sunday, December 12, 1999 - 05:11 am:

Oops. Change the "snuh!" in the last code example to a "Hi!". I need to either learn to edit better, or choose better metasyntactic variables. :/

By [Erwin Schomburg](#) on Sunday, December 12, 1999 - 09:38 am:

Open square bracket is "suspend compilation", i.e. revert back to interpreter, close square bracket is "resume compilation". LITERAL takes what is on stack at compile time and compiles code to push that very literal value on stack at runtime.

```
: e1 15 ;
: e2 [ 15 ] literal ;
15 : e3 literal ;
15 constant e4
```

e1 through e4 all produce the same result when called, "15" put on stack. The differences are, if in e1 the compiler does not find a word called "15", it tries if it could be a number in the current base and compiles the code for LITERAL with the value 15 if it is so. In e2 you explicitly instruct the compile to take the value for compiling the literal from stack, where it does not make a functional difference if you temporarily suspend compilation to put that value on stack or if you put that value on stack before you enter the definition, like in e3. For e4, the actions elaborated for e3 are all hidden through the use of a defining word, CONSTANT.

POSTPONE as used in the sample for CONSTANT implementation, in lay terms, looks at the word that follows it and if it is marked IMMEDIATE, removes that attribute and takes care that its definition is compiled instead of executed immediately. So in the CONSTANT example, the POSTPONE LITERAL takes care that the compiler does not look for a value on stack just now (while *defining* CONSTANT), but instead compiles code that, when a new word is defined *using* CONSTANT, executes LITERAL then, i.e. looks for a value on stack to compile code that puts the value back on stack at the time the new word (e4) that is supposed to deliver the constant value on stack is called.

May the Forth be with you!

/Erwin

BTW: Hope that was not more confusing than helpful.

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 12, 1999 - 11:39 am:

One small technical point Erwin:

```
15 : e3 literal ;
```

won't work on many systems, as the colon leaves data on the stack that is picked up by

semi-colon.

Neal

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 12, 1999 - 11:58 am:

E., POSTPONE and IMMEDIATE gives you the power to write words that compile special code when they are run. One of the things you might want to do is to lay down a literal value into a new definition; that is what LITERAL is for.

Now, in something like

```
: myword [ 3 5 + ] literal ;
```

which is exactly equivalent to

```
: myword 8 ;
```

you are letting the interpreter do the math (here, adding 3 and 5) and then storing the result in the definition; this is an optimization, better than

```
: myword 3 5 + ;
```

because in this second version, every time myword is executed, the math has to be done again. So that's why you'll see the former technique from time to time.

Neal

By [E.](#) on Sunday, December 12, 1999 - 02:54 pm:

Perhaps I was unclear. I think I understand POSTPONE and IMMEDIATE (as well as square brackets), and if not, I am taking Neal's suggestions to read the library files and experiment on my own.

The things I've looked at, and don't understand, are now the following:

- A) Why does LITERAL (in the simple definition that I've used before) require the number to be enclosed in brackets? I've managed to make a word that doesn't require brackets, using POSTPONE, but it requires IMMEDIATE and another word, also using IMMEDIATE, to access.
 - B) Does LITERAL have any use besides a form of commenting? I would guess yes, because of how it's used in the Quartus library files (which I can't understand), but neither Julian Noble's tutorial nor the ANS draft explain what that might be.
 - C) Is this incredibly basic knowledge that I should perhaps take somewhere else? I've tried to remain sort of on-topic, but with the lengths and rambling nature of some of my recent posts, I have to wonder.
-

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 12, 1999 - 03:14 pm:

A) LITERAL is itself an IMMEDIATE word. Unless you explicitly POSTPONE it, it runs right away during compilation. Its action is to take the top number from the stack and compile it into the current definition; this means you have to put a number on the stack for it to use, and to do that, you have to 'step out' of compilation mode and then back in using [].

B) Yes, LITERAL does have uses -- most commonly to compile the result of a calculation into a definition, as per my last example.

C) I'm happy to discuss these things here -- but I think perhaps you're standing a bit too close to the screen at this point. POSTPONE, IMMEDIATE, LITERAL, and friends likely needn't concern you at this stage, as it's only in odd circumstance that you need them. You can write a huge number of apps without ever needing them; witness Year, Duco, Swatch, and others that don't use them at all.

Neal

By [E.](#) on Sunday, December 12, 1999 - 03:45 pm:

A: I figured it was IMMEDIATE, because by using POSTPONE (and then two IMMEDIATEs), I could get it to work without the brackets. But your last sentence answers my question perfectly.

B: That's what I was referring to by "pseudo-comment". You have a calculation that you want in the code, but not to take up cycles. I've done this sort of thing often enough. Programs for me, I use a deg/rad conversion factor of 57.296. Programs for others to see, I use a factor of (180/pi). Not that I could make it a LITERAL in other languages, but my assumption of the principle behind it is the same. Except, of course, what I see in the library files, but I'm working on those.

C: That's why I put it in "Everything Else" and not "Quartus Forth (Palm)". There are many features of Forth that I don't use in my programs, but that I'd like to know. Feeling of completeness, or what have you. I've never used, e.g., map() in perl, but the more tools one has in one's toolbox, the better. IMAO, of course.

By [Neal Bridges \(Nbridges\)](#) on Sunday, December 12, 1999 - 04:10 pm:

:) Ok. Just so long as you're not seeing this small corner of the language as a hurdle you need to clear at this point.

Neal

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This is a public posting area. If you do not have an account, enter your full name into the "Username" box and leave the "Password" box empty. Your e-mail address is optional.

Idiotic Forth (not QF-specific) question.

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Idiotic Forth (not QF-specific) question.

By [E.](#) on Thursday, December 9, 1999 - 12:15 am:

So in my continuing (and futile) attempts to understand CREATE/DOES>, I find that most tutorials say something like

```
: CONSTANT CREATE , DOES> @ ;
17 CONSTANT FOO
```

Now, I'm assuming that right before the comma hits, the stack looks like (17 addr), where addr is the address of FOO, yes?

And yet I wrote (in gforth, and it even works, amazingly enough):

```
: auto-inc
  create 0 ,
  does> dup >R 1 swap +! R> @ .
;
auto-inc foo
```

[Yeah, I'm aware of the (I hope only) two HUGE design flaws, but that's not the point here. I did that so it'd take less typing while testing, not because I'm going to DO anything with this code.]

Right before my comma hits, I think I have (addr 0), which confuses me, as it's backward, and still works. Nothing on the stack, if I change the 0 to 23 it starts counting at 23, etc.

It's obvious that the bug here is in my understanding, but I would be really grateful if someone could explain to me where it is.

Thanks.

By [Erwin Schomburg](#) on Thursday, December 9, 1999 - 12:38 am:

The problem is that you need to see two complete threads of this construct, compile time behaviour and runtime behaviour.

Compile:

create parses from input and makes a definition out of this, containing code that will put the now (while compiling this) next available address in dataspace (here) on the stack at runtime. 0 , puts Zero into the space at this address and protects the contents by incrementing the value of here by one cell. Does> tells the compiler you want to continue defining stuff to compile into the newly created word.....

Run:

Put address of where here was at compile time on stack. Duplicate this address, put one instance away on returnstack, 1 on stack, swap with remaining instance of address, stash away as increment to the addresses old contents eating both stack items, fetch address from returnstack, look up new contents and print (stack now empty).

Hope it helps.

May the Forth be with you!

/Erwin

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 9, 1999 - 08:21 am:

E, I think your misconception is that "comma" requires an address. It doesn't. It stores data directly at the address pointed to by HERE, and then increments HERE by one cell.

! ("store") is the one that requires a value and an address.

Neal

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 9, 1999 - 08:52 am:

Erwin is also correct -- CREATE defines a new function which will *later* return its own address, when it is called. CREATE leaves nothing on the stack at the time it occurs.

Neal

By [Jim Hendricks](#) on Thursday, December 9, 1999 - 08:58 am:

Don't think this is too far off subject but from a design perspective, wouldn't the body of DOES> be best defined as a seperate word? That is of course if the use of the new defining word auto-inc is to be used in more than 1 instance per application?

ie.

```
: auto-incDoes  
dup >R 1 swap +! R> @ .  
;
```

```
: auto-inc  
create 0 ,  
does> auto-incDoes ;
```

```
auto-inc foo  
auto-inc foo2  
auto-inc foo3
```

In this example, if I interpret how create and does> works, foo, foo2, and foo3 would only use 3 cells, 1 cell for the data, 1 cell for the call to auto-incDoes, 1 cell for the call to exit. (This stated in the context of a direct/indirect threaded model, not the subroutine threaded model of Quartus). In the original implementation of auto-inc, foo, foo2, and foo3 would each have the full definition of what is now auto-incDoes. Is this a correct interpretation and hence a correct design decision (part of factoring?)

Thanks, Jim

By **Erwin Schomburg** on Thursday, December 9, 1999 - 09:27 am:

Jim, your proposal is what I would call "over factoring", as the "does>" part is compiled as a call to exactly the same subroutine in every word instantiated using auto-inc, a fact that gives us one subroutine call more in your implementation than in E's implementation (E's dumps the adress to stack, then jumps to the does> part, where the action plays, yours jumps to the does> part, where it finds a call to auto-incDoes, where the action plays).

/Erwin

By **E.** on Thursday, December 9, 1999 - 09:36 am:

> E, I think your misconception is that "comma" requires an address.

[...]

> CREATE leaves nothing on the stack at the time it occurs.

Excellent. That clears it up. Thanks for the explanations, folks.

By **[jim Deakin](#)** on Thursday, December 9, 1999 - 09:55 am:

Just a point, but I think the >R and R> are redundant.

```
dup >R 1 swap +! R> @ .
```

is functionally equivalent to

```
dup 1 swap +! @ .
```

the spare copy of the address is as safe further down the stack as on the return stack. It's also less dangerous!

By **Erwin Schomburg** on Thursday, December 9, 1999 - 10:06 am:

Agreed. But while we are at it, how about

```
1 over +! @ .
```

/Erwin

By **E.** on Thursday, December 9, 1999 - 10:47 am:

Redundant? I'm not surprised. As Neal guessed, I was working on the assumption that the address of the CREATED word was left on the stack.

I'm sort of puzzled by the fact that it worked at ALL, but hey.

By [Neal Bridges \(Nbridges\)](#) on Thursday, December 9, 1999 - 11:39 am:

Jim H. -- in your example, factoring out the DOES> part would mean an extra call for each new word that uses that DOES> code, both in Quartus Forth and in direct/indirect-threaded systems.

I recommend generally that you factor for readability, and not worry about the implementation specifics, as they will vary from Forth to Forth.

Neal

By Erwin Schomburg on Thursday, December 9, 1999 - 11:44 am:

Ooops, forgot the "no matter what implementation you look at" part in my response. Pity none of you you can *read* what *thought* 8-)

/Erwin

By [Jim Hendricks](#) on Thursday, December 9, 1999 - 12:57 pm:

OK, so time to expand my knowledge on DOES>

In the example provided by E., when auto-inc is compiled, it creates the auto-inc word, then compiles the symantics following it. When auto-inc is executed, it creates a word from the name provided in the input stream, reserves the appropriate space and then... Now here's where I think I might be getting confused, is the symantics following the DOES> in auto-inc compiled into auto-inc and the new word created from the execution of auto-inc then pointing back to the compiled code within auto-inc? Or is tye symantics following the DOES> in auto-inc compiled in-line with the word created from the execution of auto-inc. Obviously from my previous question, I assumed the latter. Also since it's been mentioned about implementations specifics, is the answer for how DOES> is handled then implementation specific?

Neal, I would agree factoring on readability for most cases, but if the symantics following DOES> is inlined into each word and you are dealing with a resource challenged environment (like the Palm) and you have an application which makes heavy use of a defining word like auto-inc, and the symantics for DOES> is somewhat larger then auto-inc, then I would think that you would want to side toward extra factoring even though it does not improve readability, nor performance, only resource utilization. But once again, this whole argument hinges on what does the standard require for DOES>, and what is allowed by the implementation.

Hope this makes sense!

Jim

By **Erwin Schomburg** on **Thursday, December 9, 1999 - 01:11 pm:**

In almost every implementation, but definitely so in Quartus, the word containing DOES> compiles the code following it into a separate subroutine to be used by all words subsequently created via the defining word sporting a CREATE DOES> construct. In Quartus the so defined words consist of a code snippet to throw the individual (per created word) "data" address onto the stack, which is followed by a jump to the common part as defined by what follows DOES>. Like Neal (and I) said before, factoring out the DOES> part does worsen the resource usage, if not also the performance, in all implementations I know, no matter the utilized compile model.

/Erwin

By **[Neal Bridges \(Nbridges\)](#)** on **Thursday, December 9, 1999 - 02:01 pm:**

Erwin is correct -- DOES> code is not inlined into new words at all. The code after DOES> is reused by each new CREATED word that uses it. Far from being a resource-waster, CREATE DOES> is a great way to save memory space.

Neal

By **[Jim Hendricks](#)** on **Thursday, December 9, 1999 - 02:27 pm:**

Ah, thanks my forthwrite guru's, my understanding has been broadened!

With this new understanding, I can see how factoring out the body of DOES> would be a waste of resources, etc.

Now I am glad I posed a uninformed question so that my budding Forth hobby could expand. Damn but this Forth stuff is getting fun! I think I may actually be turning into a Forth junky!

Thank you, Jim!

By **[Neal Bridges \(Nbridges\)](#)** on **Thursday, December 9, 1999 - 03:14 pm:**

Forth is a wonderful language; the more you use it the more you come to appreciate it.

Neal

By **[E. Ross Helton](#)** on **Thursday, December 9, 1999 - 03:42 pm:**

Hi;

I would second and Amen Neal's observation! Yes, it really does grow on you. You can think in workable units, instead of a collection of possible working units.

Make it a good day!

Ross

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Proxy Server compatibilty with Palm using AOL and AvantGo software application

[Quartus Handheld Software: Discussion Forum: Everything else!](#): Proxy Server compatibilty with Palm using AOL and AvantGo software application

By [Jon Moskal](#) on Thursday, November 11, 1999 - 10:35 pm:

I am using AOL and a Palm Pilot professional. I recently got AvantGo for utilizing Map Quest online and moving the data to the Palm. However after an intial successful move, now I am getting errors about Proxy Servers that cannot be recognized. What do I do? How do I configure the proxy data required? Is the AOL application an HTTP or SOCKS or what? I know this has nothing to do with your application, but it would be bloody helpful to hear from you. The Mobile Link application that moves the files from web to the palm is where there seems to be a problem. I am trying to move them from the web to the laptop and than synchronize to the palm.

Look forward to a reponse.

StarNex

By [Neal Bridges \(Nbridges\)](#) on Thursday, November 11, 1999 - 10:50 pm:

I have not got a lot of experience with AvantGo -- I'd suggest you fire them off a note directly. There are quite a few AOL'ers out there, so I imagine any problem you're having has cropped up before.

Neal

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