

The Embedded Muse 68

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Becoming an Embedded Engineer

I get an awful lot of email from people who want to know how they can become embedded programmers.

How does one become a firmware engineer? I learned about it the same way I learned about the birds and the bees: talk to my friends, run a few experiments, check the results and iterate. Surely there's a better approach!

Sure, one way is to spend 4 or 5 years in college in a EE or CE program. Fact is, even these graduates typically need a bit of seasoning when they hit the real world. The degree does give them an instant credibility, though, that greatly simplifies getting a job in the industry.

If you want to change careers, perhaps moving from being a hardware designer to firmware engineering, or from conventional desktop programming to the embedded world, what do you do? I'm asking for suggestions, as I'd like to create a web page that gives these firmware wannabees some help, or at least some direction. Email your thoughts and I'll share some with readers of this newsletter, and will try to condense the suggestions into a useful format for newbies.

In the meantime I've created a set of links to various reviews I've done of different books on the subject. Rather than just a set of links, it describes each volume so is helpful in selecting a book. See <http://ganssle.com/bkreviews.htm>.

Code Inspections Doc On-line

Regular readers probably know I'm quite keen on code inspections as a way of getting firmware done faster and better. A lot of folks have asked for more info on this – go to <http://ganssle.com/Inspections.pdf> for a how-to guide.

New Book

Arnold Berger's new book "Embedded Systems Design" (CMP Books, 2002, ISBN 1-57820-073-3) is an introduction to how we go about building embedded systems. Arnie

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teaches a class on the subject, so this book distills his wisdom in getting the message across to EE students. At \$34.95 and 236 pages it offers welcome value to the world of overpriced technical books.

The book has a very powerful focus on tools, a direction no doubt gleaned from Arnie's many years at AMD and Applied Microsystems. The explanation of BDM/JTAG debuggers is one of the best I've seen. In addition to the thorough coverage of standard BDMs, he also discusses the very important Nexus efforts to standardize these debuggers, and to extend them to offer more capability for dealing with real time systems.

You'll immediately note his bias towards using the most powerful debuggers, especially In-Circuit Emulators. Not sure how an ICE works? Read this book for a great overview and advice about using the most important features of these tools.

Most welcome is the 23 pages devoted to selecting a CPU. That subject gets too little attention, and can be sometimes more a matter of faith than of science. The book covers all of the selection criteria in a readable and comprehensive manner.

The book is a needed addition to our art. It's not aimed at the experienced developer, though. Couple this with Simon's An Embedded Software Primer and you'll have a good start on the basics of building embedded systems.

Thought for the Week

Larry Hardin passed this gem along... and claims it's a real letter sent to a difficult customer.

Dear Mr. Unhappy Customer,
Please accept our apologies for the problem you experienced with our software. We realize that the misspelling in the start-up banner must have been a great inconvenience. We are doing everything we can to make it right.

As you requested, the entire staff worked around the clock, seven days a week, to rewrite the entire program from scratch. The new code has been rigorously tested by NASA, NCSA, MIT, UC Berkley, Microsoft, and IBM at our expense. We are sending a copy of the new version by bonded courier on the next flight available to your location.

We will be giving you free site licenses to all our current and future products, forever, with unlimited technical support. Our stock broker is still working out the arrangements to transfer ownership of all our outstanding shares of stock to your name.

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The engineer responsible for the original error has been shot, and his belongings burned. We are remodeling his old office as an extra restroom. Our legal staff is challenging his will. It may be possible to leave his wife and four children completely destitute.

We hope these small gestures will indicate our commitment to satisfying you, our most important customer.

If there is anything more we need to do in order to correct our grievous error, please don't hesitate to ask.

With best regards,

Will Grovel
Vice President
Customer Support Division
Vaporware Solutions Co.

About The Embedded Muse

The Embedded Muse is an occasional newsletter sent via email by Jack Ganssle. Send complaints, comments, and contributions to him at jack@ganssle.com.

To subscribe, send a message to majordomo@ganssle.com, with the words "subscribe embedded *your-email-address*" in the body. To unsubscribe, change the message to "unsubscribe embedded *your-email-address*".

The Embedded Muse is supported by The Ganssle Group, whose mission is to help embedded folks get better products to market faster. We offer seminars at your site offering hard-hitting ideas - and action - you can take now to ***improve firmware quality and decrease development time***. Contact us at info@ganssle.com for more information.

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