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EDITOR: Jack Ganssle, jack@ganssle.com

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Editor’s Notes

Thanks to everyone for your tool recommendations. More than a hundred tools are now suggested at http://www.ganssle.com/tools.htm . Keep those suggestions coming!

Last issue I recommended a book on statistics. Steve Leibson suggested The Cartoon Guide to Statistics (http://www.amazon.com/Cartoon-Guide-Statistics-Larry-Gonick/dp/0062731025/ref=sr_1_1?ie=UTF8&s=books&qid=1257180160&sr=8-1). I haven’t read it, but it sounds like fun. And “fun” and “statistics” are two words one hardly ever hears together.

Quotes and Thoughts

Geoff Patch sent this: Good programmers use their brains, but good guidelines save us having to think out every case. - Francis Glassborow

To expand on that thought: as a youngster I wondered how architects design houses. Do they do stress analysis on every beam, each load-bearing wall? My dad, a mechanical engineer, told me that, no, generally they just use guidelines published in engineering handbooks to specify beam sizes.

That was quite a revelation about the nature of engineering, and a big differentiator between engineering and science. We rely on guidelines, standards and handbooks to guide our daily work.

Salary Survey

Thanks for the salary survey responses. I'll keep it open another week or so and then start processing the data. If you haven't taken the very short survey, it's here: http://www.ganssle.com/survey.html . I'll share the results in the coming weeks.

More, Better, Faster

In 1972 Intel introduced the first 8 bit microprocessor, the 8008. It had 14 address lines and could reach 0.8 MHz. Using 10 micron geometry it required a two-phase clock and both 5 and -9 volt power supplies. (User's Manual here: http://www.classiccmp.org/8008/8008UM.pdf .) Things sure have changed since then.

The most radical change, though, is in how the business environment has been driving engineering. I'm not referring to the current economic woes; rather, communications technology has improved so that globally-distributed teams now work together to build a product. When I was a child a long-distance phone call (even one from an adjoining state) was so rare, and so expensive, that the household came to a halt as dad took the call. It could take weeks to trade letters with a correspondent in Europe, and few of us knew anyone, other than soldiers, who had traveled outside the US and Canada.

Today it's all but free to call any place on the planet, and the Internet means all of our data is always connected. The result: a global competitive environment heretofore unknown that drives management to demand more, better, faster. If you can design an ASIC with 100 million gates and a million lines of C in a month, well, they'll soon demand it in a week. And for good reason, as every company realizes that someone else will be looking for a way to get those kinds of productivity gains.

Sure, the economy is bad right now. You're buried in getting a project done and don't have time to find new ways to do things better. I'm reminded of the classic cartoon of a medieval battle being waged with swords and rocks; the general sniffs that he just doesn't have time to see the salesman, who product is a box of machine guns.

More, better, faster. I think that's the mantra that will drive this industry for the foreseeable future. How will you achieve those goals? Take a day to learn how to meet that objective. Learn how at my Better Firmware Faster class, presented at your facility. See http://www.ganssle.com/onsite.htm .

Tools and Tips

Mark Misiewicz likes Sketchup: "I have a suggestion for mechanical CAD package. About two years ago I discovered Google Sketchup. What a great piece of 3D modeling software! And it is FREE too. We use it for modeling and designing enclosures, front panels, fitting circuit boards, garage shelves, mechanical parts etc."

Eric Smith suggests: "MWSnap - http://www.mirekw.com/ - This is a screen capture tool. I haven't tried MWSnsap, and it's hard to argue with the price (free), but I've been very happy with CaptureWizPro by PixelMetrics.

“Disclaimer: the author is one of my friends, but I don't have any interest in it other than as a satisfied user.”

Scott Finneran contributed: "Peter Miller's srecord tool is interesting (http://srecord.sourceforge.net/). I've got to second this one. srecord is an incredibly useful tool.”

I’m History!

“When job prospects improve, I’m history.” That’s a common theme in my email in-box. A preliminary look at the salary survey data shows most engineers are happy in their careers. However, plenty of developers are unhappy with their jobs, but intend to stick it out till the economy improves. Then they plan to be gone, history, off to greener pastures.

Many of the survey respondents wrote in the comments section about how the recession keeps them tied to their current jobs. Few openings exist, so fear keeps them bound to companies and management they despise.

The economy will improve. Jobs will materialize. Hiring will once again resume. Once that happens will we see a big employee migration? Developers leaving in search of better salaries and working conditions? They’ll take their unique knowledge of company products. Sure, they can be replaced, but at what cost? Managers will – if they are lucky - hire new folks who will need a year to learn the intricacies of the company’s 500,000 line codebase.

Or, as is so common, the new hires will do what programmers have done since the dawn of the computer age. “This code is crap. I’ll have to rewrite it all.”

The crummy economy means even in the best situations fewer developers are doing more work, often one person taking over projects left unfinished by a number of laid-off colleagues. Stress is high. Fear of job loss increases the stress. At the ESC in September I moderated a talk about the recession and careers. Most in the packed room had jobs. “Then why are you here,” I asked. The answer: fear of job loss.

College enrollments in computer-related fields are down – a lot. College-bound students saw the dot-com collapse and the surplus of technical people, so are going to different fields. That means we’ll likely experience a shortage of developers in the next few years.

An improving (hopefully soon!) economy with fewer new graduates will reverse roles. Toxic companies will lose their stars and find replacements few and expensive.

Wise management will invest in their people today so they’ll stick around tomorrow. Short-sighted bosses who overtly or implicitly use

fear to motivate will find their engineering departments suddenly vacant. That giant sucking sound you hear is the vacuum left by your departing R&D folks.

Threat them poorly now and you'll lose them later.

Joke for the Week

Pete Klammer's Quip of the Day:

All the World is Bug, and all Software is Workaround; Get Over It, and get back to work!

About The Embedded Muse

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

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