

HISTORY

Offshoots STUG and LISA

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This column is brought to you by the letter K. K as in Kernighan and K as in Kolstad. Of course, others were involved: Bill Plauger, Deborah Scherrer, Dennis Hall, Joe Sventek. Were you alive in 1976? In 1987? Well, pull up your chairs and learn ancient lore.

Software Tools by Brian Kernighan and P. J. ("Bill") Plauger bears a copyright date of 1976. I own two copies: one was given to me as a Christmas gift by Lou Katz in 1978. It's full of notes. The other was purchased in the mid-1990s when I was working on *The Handbook of Programming Languages* (4 vols., 1998). I still consider it the very best book on programming I've ever read. Andy Tanenbaum (world-renowned computer scientist of the Vrije Universiteit in Amsterdam) thought so, too. He left a copy at Lawrence Berkeley Labs (LBL), telling Debbie, "You might be interested in this." She was.

"I thought it was wonderful," she told me. "At the same time that Andy mentioned the tools book, Dennis Hall discovered it. And Dennis got me involved and got the PI to approve using my time. So over the weekend I started to implement all the tools. It was great!"

It was that fast, too. Debbie and Dennis and Joe Sventek did it all.

"Remember," Mike O'Dell told me, "Debbie knew Brian, and he knew what they were doing, so he pointed people who asked about the tools to LBL. And that started the Software Tools User Group."

User group? Yes. A BoF was held at the USENIX meeting in 1979 in Toronto. Just over 100 attended. A newsletter was initiated. And in volume 1, number 2 of *Software Tools Communications* (November 1979) there was this announcement: "The next meeting of the Software Tools User's Group will be held January 29th in Boulder, Colorado."

Software Tools wasn't about UNIX, it was about philosophy and style. The late Dennis Ritchie told me, "The tool-using approach is powerful and intellectually economical, but it takes imagination to use."

Interestingly, Debbie, Dennis, and Joe realized just how powerful the tool concept was. They wrote a virtual operating system (VOS) that would serve as a pseudo-interface between the software tools written in Brian's Ratfor (Rational Fortran) and whatever OS was running. The paper, "A Virtual Operating System," appeared in *CACM* 23.9 (September 1980). In April 1996, Debbie, Dennis, and Joe were awarded the USENIX Flame for their efforts.

STUG waxed rapidly. In April 1980 it had over 2,000 members. And Debbie prepared a "Cookbook" (January 1981), which comprised "Instructions for implementing the Software Tools Package (as distributed by the Software Tools Users Group)." The tools? Oh, the tools ran (alphabetically) from **ar** (archive) to **xref** (make a cross-reference).

Software Tools Communications ceased publication after January 1986. But a decade later, USENIX began an annual award. "The STUG Award recognizes significant contributions to the community that reflect the spirit and character demonstrated by those who came together in the Software Tools User Group (STUG). Recipients of the annual STUG award conspicuously exhibit a contribution to the reusable code-base available to all and/or the pro-



vision of a significant enabling technology to users in a widely available form." The STUG Award originated in a donation by Debbie Scherrer of the funds remaining after the group ceased activity.

LISA

Rob Kolstad, then at Convex in Texas and newly elected to the USENIX Board, mentioned the difficulties of large systems at a board meeting and, together with Alix (Max) Vasilatos, then at MIT, organized a "Large Installation System Administration Workshop," held in Philadelphia in April 1987. There were 55 attendees. I vividly recall Rob asking whether anyone "backed-up" 10 meg a night. About a third of those present stood. He then increased the number. There were still two at "over 100 meg."

In those days it was a lot.

The LISA15 event many readers attended was the 29th. I hope there will be a major celebration for the 30th in 2016.

When LISA began, no one even imagined "the cloud" or installations like those of Google or Amazon. The largest users were government and military. Today most of us have gigabytes on our desks. One can buy 5T for well under \$200. What will "large" mean in another few years?

Thank you Brian and Bill; Debbie, Dennis, and Joe; Rob and Max.

Epilogue

At year-end, it's customary to predict what's coming. I'm reluctant to do that. Let's face it, we do a really lousy job at prediction—especially of the future. By the way, although that's frequently attributed to the late Yogi Berra and occasionally to Sam

Goldwyn, it comes from a question and answer period during a seminar in Copenhagen where Niels Bohr laid out the fundamental nature of quantum physics. Included was the description of the Heisenberg uncertainty principle, which basically says that you can't predict where a particle will be at a specific place in time, or vice versa. The question that triggered the answer was: "What do you predict the influence of quantum physics will have on the world in the future?" and Bohr said, somewhat tongue in cheek due to the prominence of the principle, that "it is exceedingly difficult to make predictions, particularly about the future" (because we can't even know what the state of our situation is NOW, much less in the future).

Dr. Susan Calvin made her first appearance in "Robbie," but she wasn't in the version that appeared in *Super Science Stories* in September 1940. Asimov "adjusted" his history and inserted her in a revised version. But that wasn't all he revised: he moved the action from 1982 to 1998. As he died in 1992, I guess he didn't concern himself with shoving things further.

H. G. Wells originated moving sidewalks, but my guess is that most people first thought of them in Heinlein's "The Roads Must Roll," which appeared in *Astounding Science Fiction* magazine in 1940. Now, nearly every airport has a slow version of them (though when I was in Vancouver, half of them weren't running and in Portland, Oregon, none were). A roadway from Boston to New York to Philadelphia to Baltimore to Washington would be great. By the way, Heinlein's *Rocket Ship Galileo* appeared in 1947 and involves Nazis on the moon.

These are just to further illustrate that Bohr was right. Happy New Year!

