However, the controversy surrounding the proposed standard has become so entangled with misconceptions about underflow that a study of underflow is now of interest to a broader community.

LIVEWARE (p. 88) “A common axiom in project management circles states: If more than 20 percent of a programmer needs retraining, it is cheaper to replace him. … This axiom is an informal expression of the tenets of a new discipline, that of ‘disposable liveware.’

“The overall result is that conventional software development is trapped in the programmer cul-de-sac. …”

A SIMPLER INTERNET (p. 89) “If world population remains fairly constant (it certainly is not growing as fast as the IC business) and if eventually everyone has a [64-bit word] microprocessor, then everyone could share the same address-space: 2**33 people, 2**64 bytes (or words … if that is the addressable unit) gives 2**31 bytes per person.

“In this situation digital communications would become nothing more than transfers from one area of virtual memory to another …”

TOUCHSCREENS (p. 98) “Interaction Systems has made its touch-sensitive technology available in kit form for integrating the capability into CRT terminals manufactured by other companies.

“So that persons not familiar with the use of computerized equipment can interact with an on-line data file, the capability allows data to be input to a data processing system by touching with the fingertip the area on a CRT screen where appropriate information is displayed.”

ORIENTAL RUGS (p. 104) “The world’s largest producer of Oriental rugs is, surprisingly, Holland. One of the leading producers of made-in-Holland Oriental rugs, Van Heugten BV … is using a computerized rug design and manufacturing system offering color graphic displays and ink-jet spray technology.”

3D IMAGES (p. 106) “A video system capable of generating three-dimensional images has been developed at the Innovation Center of the Massachusetts Institute of Technology. Objects viewed on the system’s display seem to be suspended in space. The front, back, or side of any object can be seen by walking around the display.”
FOOLISH COMPUTERS (p. 6) “Computers are perhaps man’s most incredible invention. As prices continue their radical decline, the popular press becomes more enamored with the idea of computerizing society. But are computers a good idea in every case? Are they always helpful? I maintain that computers can be misused. They can turn us into mindless lemmings, maybe even fools. …”

INTEL DOMINANCE (p. 12) “This increasing market dominance by Intel could have a profound effect on the microprocessor industry. In the wake of Intel’s strong performance, other chip manufacturers must now look for new strategies to remain competitive, even as Intel looks to increase its market advantage.”

PC MAINTENANCE (p. 15) “… Suppliers have also made PC components intelligent enough to walk end users or technicians through the diagnostics process. One software product can even automatically diagnose and fix problems. Vendors began delivering such features in 1996 and are slated to deliver many more this year.

“The timing is fortuitous for PC manufacturers because of the recent release of network computers (NCs) by such companies as Oracle and Sun Microsystems. …”

WEB SECURITY (p. 17) “ETrust, a global initiative designed to create consumer confidence in electronic information exchange, is set to be rolled out by mid-1997. ETrust will dispense seals of approval, called trustmarks, to Web sites that follow a strict set of privacy guidelines.”

DOMAIN NAMES (p. 20) “… the Internet Society’s International Ad Hoc Committee (IAHC) has proposed the creation of seven new top-level domains. These seven—.web, .store, .info, .firm, .arts, .rec, and .nom—would join the current six domains …”

COMPUTING IN JAPAN (p. 26) “Computing in Japan is different from computing in the rest of the world. The market has distinctive characteristics, as does the structure of the industry. Yet in the past few years the differences have been disappearing.”

DEVELOPMENT TOOLS (p. 35) “The root of the business application development problem is the increased expectation for high-end business applications—technology is becoming more complex, and current development tools are not adequate for the task.”

Y2K (p. 44) “The Year 2000 problem is the software problem of the twentieth century. This article defines a process that an organization can use to address its own Y2K challenge in a forthright and level-headed manner.”

COMPOSITE ARITHMETIC (p. 65) “… combines aspects of traditional integer and floating-point arithmetics with less familiar aspects of rational and logarithmic arithmetics to complement the binary floating-point standard and satisfy more diverse computational needs.”

PORTABILITY (p. 74) “Traditionally, dynamic linkers merely combined previously compiled pieces of code. Faster processors are now making outright code generation at load time practical, leading to cross-platform portability at very little extra cost.”

EDUCATION REFORM (p. 116) “We are moving further into the Information Age with an education system ill-equipped to meet the needs of our society. Calls for educational standards are issued from the local-school level all the way up to the White House, making education reform one of the top priorities of our time. It is less obvious but nonetheless true that the computing community, and the IEEE Computer Society in particular, is in a good position to contribute to this effort.”

LEARNING SKILLS (p. 122) “During the 1980s, many organizations assumed that better software development methods and tools would lead to dramatic gains, and indeed many of them have the potential to make a big difference. However, most people naïvely assumed that everyone could learn to use them equally well. We now know that strong differences in learning and applying new skills were at the very heart of the large differences that existed among software engineers.”

WEB PUBLISHING (p. 129) “People often tell me that HTML is easy to learn and gives you complete control over the appearance of your HTML document. Don’t bother with a fancy Web editor, they say; it’s hard to use and limits what you can do.

“Although this may have been true even a few months ago, many good Web editors (and associated publishing tools) are quickly changing the way Web pages are built. …”

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