

In the beginning, there were Real Programmers.

That's not what they called themselves. They didn't call themselves hackers, either, or anything in particular; the sobriquet 'Real Programmer' wasn't coined until after 1980, retrospectively by one of their own. But from 1945 onward, the technology of computing attracted many of the world's brightest and most creative minds. From Eckert and Mauchly's first ENIAC computer onward there was a more or less continuous and self-conscious technical culture of enthusiast programmers, people who built and played with software for fun.

The Real Programmers typically came out of engineering or physics backgrounds. They were often amateur-radio hobbyists. They wore white socks and polyester shirts and ties and thick glasses and coded in machine language and assembler and FORTRAN and half a dozen ancient languages now forgotten.

From the end of World War II to the early 1970s, in the great days of batch processing and the "big iron" mainframes, the Real Programmers were the dominant technical culture in computing. A few pieces of revered hacker folklore date from this era, including various lists of Murphy's Laws and the mock-German "Blinkenlights" poster that still graces many computer rooms.

Some people who grew up in the Real Programmer culture remained active into the 1990s. Seymour Cray, designer of the Cray line of supercomputers, was among the greatest. He is said to have once toggled an entire operating system of his own design into a computer of his own design through its front-panel switches. In octal. Without an error. And it worked. Real Programmer macho supremo.

The 'Real Programmer' culture, though, was heavily associated with batch (and especially batch scientific) computing. It was eventually eclipsed by the rise of interactive computing, the universities, and the networks. These gave birth to another engineering tradition that, eventually, would evolve into today's open-source hacker culture.

The beginnings of the hacker culture as we know it today can be conveniently dated to 1961, the year MIT acquired the first PDP-1. The Signals and Power Committee of MIT's Tech Model Railroad Club adopted the machine as their favorite tech-toy and invented programming tools, slang, and an entire surrounding culture that is still recognizably with us today. These early years have been examined in the first part of Steven Levy's book *Hackers*, Anchor/Doubleday 1984, ISBN 0-385-19195-2.

MIT's computer culture seems to have been the first to adopt the term 'hacker'. The Tech Model Railroad Club's hackers became the nucleus of MIT's Artificial Intelligence Laboratory, the world's leading center of AI research into the early 1980s. Their influence was spread far wider after 1969, the first year of the ARPAnet.

The ARPAnet was the first transcontinental, high-speed computer network. It was built by the Defense Department as an experiment in digital communications, but grew to link together hundreds of universities and defense contractors and research laboratories. It enabled researchers everywhere to exchange information with unprecedented speed and flexibility, giving a huge boost to collaborative work and tremendously increasing both the pace and intensity of technological advance.

But the ARPAnet did something else as well. Its electronic highways brought together hackers all over the U.S. in a critical mass; instead of remaining in isolated small groups each developing their own ephemeral local cultures, they discovered (or re-invented) themselves as a networked tribe.

The first intentional artifacts of the hacker culture—the first slang lists, the first satires, the first self-conscious discussions of the hacker ethic—all propagated on the ARPAnet in its early years. In particular, the first version of the Jargon File (<http://www.tuxedo.org/jargon>) developed as a cross-net collaboration during 1973–1975. This slang dictionary became one of the culture's defining documents. It was eventually published as *The Hacker's Dictionary* in 1983; that first version is out of print, but a revised and expanded version is *The New Hacker's Dictionary*, MIT Press, 3rd edition 1996, ISBN 0-262-68092-0.

Hackerdom flowered at the universities connected to the net, especially (though not exclusively) in their computer science departments. MIT's AI and LCS labs made it first among equals from the late 1960s. But Stanford University's Artificial Intelligence Laboratory (SAIL) and Carnegie-Mellon University (CMU) became nearly as important. All were thriving centers of computer science and AI research. All attracted bright people who contributed great things to the hacker culture, on both the technical and folkloric levels.

To understand what came later, though, we need to take another look at the computers themselves, because the AI Lab's rise and its eventual fall were both driven by waves of change in computing technology.

Since the days of the PDP-1, hackerdom's fortunes had been woven together with Digital Equipment Corporation's PDP series of minicomputers. DEC pioneered commercial interactive computing and time-sharing operating systems. Because their machines were flexible, powerful, and relatively cheap for the era, lots of universities bought them.