Dennis Ritchie Essay, Research Paper

Overview

While at AT&T Bell Laboratories, Dennis Ritchie, along

with Ken Thompson, developed the UNIX computer operating system for minicomputers.

He later developed the programming language called C, which has become a

virtual standard in the microcomputer/workstation marketplace.

Dennis Ritchie was born on Sept. 9, 1941 in Bronxville, New York. After

doing undergraduate and graduate work in physics and applied mathematics

at Harvard University, Ritchie joined Bell Labs in 1968.

In the mid-1960s, Bell Labs entered into a partnership with Honeywell,

General Electric, and the Massachusetts Institute of Technology (MIT)

to develop an operating system for a large computer that could handle

up to a thousand simultaneous users and could run 24 hours a day, 365

days a year. Ritchie and Ken Thompson were involved in the design from

the Bell Labs side. Unfortunately, none of the companies had a computer

that could handle the development of their program. Eventually, Bell Labs

was convinced to buy a $100,000-plus PDP 11/20 by promises from Ritchie

and Thompson that their group would develop a word processing system for

the lab. In 1969, Ritchie and Thompson gave the lab their word processing

program, but in the meantime managed to develop the UNIX system, which

was their ultimate goal all along.

UNIX was a major advance in computing, giving users features and functions

unavailable before. In addition, it was simple and proved that a small

operating system could be portable, machine independent, and affordable.

It had a profound impact on the development of DOS, the Mac OS, Windows

NT, and other operating systems.

In 1972, Ritchie created the C programming language and, in 1973, Thompson

rewrote the UNIX operating system kernel in C. The enormous popularity

of C in the computer industry has resulted in it becoming virtually the

standard programming language in the microcomputer/workstation market.

UNIX, because it is written in the C language, is more portable—less

machine-specific—than other operating systems. In 1976, Ritchie and

Thompson realized that this portability was a breakthrough. UNIX could

be used on any machine and clients were no longer required to use the

operating system that came prepackaged with the hardware they bought.

This was a radical change at a time when every computer and its operating

system were inseparable. By 1977, more than 500 sites were running UNIX.

As head of Bell Lab’s Computing Techniques Research department,

Ritchie continued to work on operating systems during the late 1980s and

early 1990s, including Bell Lab’s Plan 9. Plan 9 is UNIX’s answer

to competition from other operating system technologies like Microsoft’s

Windows NT. It contains much of the technology that was left out of UNIX,

such as networking and distributed computing. Despite its name, which

is a tongue-in-cheek tribute to the campy cult film "Plan 9 from

Outer Space," Plan 9 is a serious endeavor that combines some of

the best technology and engineering talent in the industry.

Awards and Books

In 1988, Ritchie was inducted into the DATAMATION Hall of Fame in recognition

for making a major contribution to information processing and its corollary

technologies. In 1989, PC Magazine recognized Ritchie with its

Lifetime Achievement Award for Technical Excellence. In 1994, Ritchie

was a recipient of the Computer Pioneer Award from the International Electrical

& Electronic Engineering (IEEE) Computer Society. In addition, he

is a Bell Laboratories Fellow.

In 1971, Ritchie and Thompson wrote the UNIX Programmer’s Manual

and in the early 1970s Ritchie co-authored The C Programming Language

with Brian Kernighan.

Summary

Dennis Ritchie remains at AT&T (under its new name – Lucent Technologies,

Inc.) as head of the System Software Research Department, where he is

working on Bell Lab’s latest offering, Inferno. Inferno is a mini-operating

system that lets anything from workstations to set-top boxes to hand-held

devices access interactive communications and entertainment services.

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