UNIVAC, the first commercial computer for business and government applications

UNIVAC, an acronym which stands for Universal Automatic Computer, was the world's first commercially produced electronic digital computer. The United States Bureau of the Census deemed the system as a versatile general-purpose machine, and they funded majority of the development. It was invented by Dr. Presper Eckert and Dr. John Mauchly in 1948. The first of this system was delivered to the Bureau in 1951. The device weighed 16,000 pounds, employed about 5,000 vacuum tubes and consumed about 125kW. It was able to perform 1,000 calculations per second. The system occupied around 382 square feet of floor space. It was also the first computer designed for business and administrative use. It had the ability to quickly execute arithmetic and data transport operations. UNIVAC was originally priced at $159,000 but eventually came to be sold between $1,250,000 and $1,500,000. 46 of the machines were built in total.

In 1952, the UNIVAC achieved national fame when CBS used the computer to predict Eisenhower`s unexpected landslide victory in the presidential election after just a small percentage of votes were in. Initially, CBS believed the computer had to be wrong with its prediction, so they considered it not working. As the final results of the election came in the UNIVAC came within 3.5% of the popular vote for Eisenhower and four votes for his electoral total, which CBS then admitted their wrong.

The significance of the creation of the UNIVAC brought many new technical innovations. It brought the magnetic tape, for example, for input and output. All machines developed prior to UNIVAC used either paper tape or cards for input and cards for output, which was a very slow method.

Invention of the Transistor

Before the transistor, in 1906, vacuum tubes were developed and used to amplify signals. AT&T bought the patent and attempted to improve it. The telephone company used the tubes to transfer singles on telephone lines across the country. However, the tubes were extremely unreliable, used too much power and produced too much heat. That's when the invention of the transistor came in to change that.

A transistor, considered to be one of the most important inventions in history, is a semiconductor device used to amplify or switch electronic signals and power. It was invented by William Shockley, John Bardeen and Walter Brattain, who were all awarded with the Nobel Prize. In 1936, Shockley started working on the idea of the device and continued to for more than ten years but was not able to build a working model during those years. So, he called Bardeen and Brattain to take care of the engineering development of the device, which they were able to complete in just two years. The invention of the transistor was demonstrated on December 23, 1947 at Bell Laboratories in New Jersey.

The development of the transistors caused the vacuum tubes to eventually become obsolete. Transistors brought many and frequent advances to technology. In 1954, Texas instruments started commercial production of transistors for portable radios. Soon after, Sony began to produce transistors, as well and they came to dominate the market.

Grace Hopper and the first computer language

   Grace Hopper, born in 1906 in New York City, is best known for her contributions to computer programming, software development and inventing the first programming language. She graduated with her bachelor's degree from Vassar College and then moved on to Yale University, where she earned her Masters and PhD in Mathematics. She taught at Vassar College, soon after. In 1943, she gave up her position as a professor to join the United States Navy. The following year she was promoted as lieutenant and assigned to the Bureau Ordnance Computation Project at Harvard University. There, she worked on producing the Mark I, an early prototype of the electronic computer. Hopper wrote a 500-page manual of operations for the Automatic Sequence Controlled Calculator where she outlined the fundamental operating principles of computing machines. She also coined the word "bug" which is described as a computer malfunction.

   In 1949, she became a research fellow at Harvard. Harper was also involved in the invention of the UNIVAC. She then developed the first computer compiler, A-0, a program which translates mathematical code into codes that the computer can read. In 1953, she proposed the idea of writing programs in words instead of symbols.This allowed her to help develop COBOL, short for "common business-oriented language". It became the first standardized computer language. "It is a compiled English-like computer programming language designed for business use." COBOL allowed computers to respond to words and numbers and by the 1970s it was the most used computer language in the world. It was mainly used in business, finance, and administrative systems for companies and governments. It is still in use in applications on mainframe computers.

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