**History of computers**

Let us take a look at the history of computers that we know today. The very first calculating device used was the ten fingers of a man’s hands. This, in fact, is why today we still count in tens and multiples of tens. Then the abacus was invented, a bead frame in which beads are moved from left to right. People went on using abacus till the 16th century and they sometimes use it now because it can be understood without knowing how to read.

During the 17th and 18th centuries many people tried to find easy ways of calculating. J. Napier, a Scotsman, devised a mechanical way of multiplying and dividing, which is how the modern slide rule works. Henry Briggs used Napier’s ideas to produce logarithm tables which all mathematicians use today. Calculus, another branch of mathematics, was independently invented by both Sir Isaac Newton, an Englishman, and Leibniz, a German mathematician.

The first real calculating machine appeared in 1820 as the result of several people’s experiments. This type of machine, which saves a great deal of time and reduces the possibility of making mistakes, depends on a series of ten-toothed gear wheels. In 1830 Charles Babbage, an Englishman, designed a machine that was called “The Analytical Engine”. This machine, which Babbage showed at the Paris Exhibition in 1855, was an attempt to cut out the human being altogether, except for providing the machine with the necessary facts about the problem to be solved. He never finished his work, but many of his ideas were the basis for building today’s computers.

In 1930, the first analog computer was built by an American named Vannevar Bush. This device was used in World War II to help aim guns. Mark I, the name given to the first digital computer, was completed in 1944. The men responsible for this invention were Professor Howard Aiken and some people from IBM. This was the first machine that could figure out long lists of mathematical problems, all at a very fast rate. In 1946 two engineers at the University of Pennsylvania, J. Eckert and J. Mauchly, built the first digital computer using parts called vacuum tubes. They named their invention ENIAC. Another important advancement in computers came in 1947, when John von Newman developed the idea of keeping instructions for the computer inside the computer’s memory.

The first generation computers, which used vacuum tubes, came out in 1950. Univac I is an example of these computers which could perform thousands of calculations per second. In 1960 the second generation of computers was developed and these could perform work ten times faster then their predecessors. The reason of this extra speed was the use of transistors instead of vacuum tubes. The second generation computers were smaller, faster and more dependable than first generation computers. The third generation computers appeared on the market in 1965. These computers could do a million calculations a second, which is 1000 times as many as the first generation computers. Unlike the second generation computers, these are controlled by tiny integrated circuits and are consequently smaller and more dependable.

In the fourth generation computers integrated circuits have been greatly reduced in size. This is due to microminiaturization, which means that the circuits are much smaller than before; as many as 1000 tiny circuits now fit onto a single chip. A chip is a square or rectangular piece of silicon, usually from 1/10 to ¼ inch, upon which several layers of an integrated circuit are etched or imprinted, after which the circuit is encapsulated in plastic, ceramic or metal. The fourth generation computers are 50 times faster than third generation computers and can complete approximately 1,000,000 instructions per second.

At the rate computer technology is growing, today’s computers might be obsolete tomorrow. It has been said that if transport technology had developed as rapidly as computer technology, a trip across the Atlantic Ocean today would take a few seconds.