

Read Only Memory (ROM)

data is permanently written during fabrication. Contents cannot be altered. Programs which are always required for running the machine are stored in ROM. It provides non-volatile storage i.e. data is not erased when the power is switched off.

Hard disk. It is less expensive.

Hardware & Software

Hardware is a set of physical components which function on applying appropriate pre-defined standardized instructions. It composes of electronic & mechanical part of the computer. e.g. CPU, Input, Output devices.

Software is a collection of data or instructions that tell computer how to work.

History of Computers

In 3000 BC, Abacus was used to perform arithmetic calculation by manipulating beads. In 1642, first mechanical calculation Machine i.e. Pascal's machine was invented by Blaise Pascal. Gottfried improved Pascal's machine for addition, subtraction, multiplication etc. but the results were inaccurate & machine was slow. In 1887, electromechanical punched card equipment was invented by Dr. Herman Hollerith. called Census Machine which was based on readable card concept.

Punch card processing involved input data, which was first recorded in a coded form by punching holes on cards. These cards were fed into ~~an~~ a number of electromechanical machine that performed processing step.

Handling of trays of cards between steps was a huge task although it was fast & accurate.

In 1833, Charles Babbage invented ~~an~~ an Analytical engine with punch card, input, storage, arithmetic, output & control unit with accuracy upto 20 places of decimal. It was a prototype computer.

Generation of Computers :

| Generation | Years | Switching devices | Storage device | Software | Applications |
|-------------------|--------------|---|--|--|---|
| I st | 1949-55 | Vacuum Tubes | Acoustic delay, magnetic drum, 1kB memory | Machine & assembly languages, Simple monitor | Scientific Technology |
| II nd | 1956-65 | Transistors | Magnetic core, main memory, 100kB main memory | Fortran, Cobol | Commercial payroll, ledgers system |
| III rd | 1966-75 | Integrated Circuit | high speed magnetic core, large disks, 1MB main memory | Fortran, IV timeshared operating system | Online reservation, database management |
| IV th | 1975-84 | large & very large scale Integrated Circuits (VLSI) | Semiconductor memory, 1000 MB disks, 10MB main memory | Cobol-74, Fortran-77, Pascal | Personal computers |
| V th | 1985-present | VLSI, Intel | Semiconductor memory, 100 GB disk, 10GB main memory | C, C++, JAVA | Simulation, virtual reality |