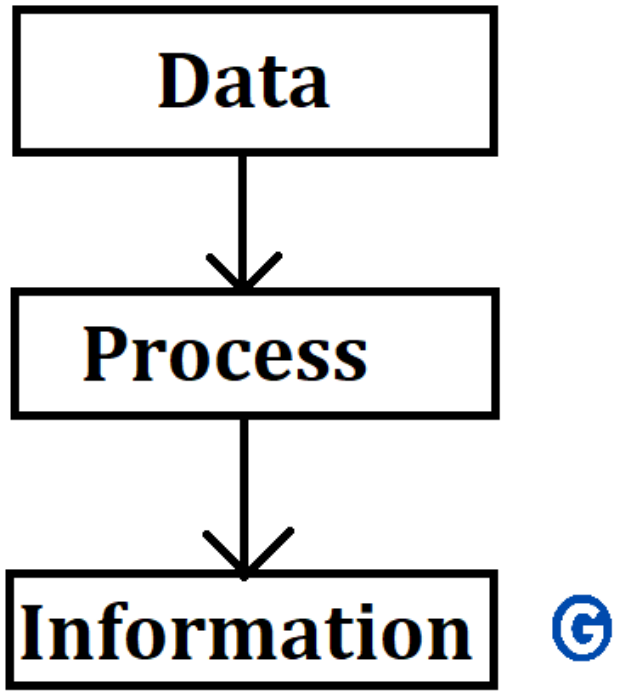
GYANSABHA
For Better Future

Introduction of Computer

Introduction

The word computer comes from the compute. Hence computer is a calculating device that can perform arithmetic operations at very high speed.

We can define, computer that operates upon data. The data can be marks of student's personal details of an employee travel information about passengers, etc. Hence, A computer can store process and strive data. Whenever required the activity of processing data using a computer is called as data processing.



Characteristics of Computer

1. Automatic:

An automatic machine works by itself without human intervention computer are automatic machines because once a job is started they carry out the job until it is finished.

2. Speed:

A Computer is a very fast device and it can perform vary large amount of work in a few seconds.

3. Accuracy:

Accuracy of a computer is consistency high and it depends. Its design. A computer performs every calculation with same accuracy. Sometime, error can occurs in computer these error are mainly due to human rather than computer.

4. Diligence:

Unlike human beings a computer is free from monotony, tiredness and lack of concentration. It can continuously work for hours without creating any error.

5. Versatility:

Versatility is one of the most important characteristics of a computer. Computer can perform different tasks such as calculation, storage of data, gaming, etc. with same speed and accuracy.

6. **Power of remembering:**
   Human beings can acquire new knowledge and important information can be stored in memory.
   Unimportant information is removed from memory. This isn't the case with computer all the information given to the computer can be stored in secondary storage device permanently.

7. **NO IQ:**
   A computer does not have any intelligent and it is going to perform the task as specified by human being.

8. **NO Feeling:**
   Human Being make decision depending on their feeling which is not possible in computer.

Evolution of Computer

- Blaise Pascal first mechanical adding machine in 1642.
- Charles Babbage who was 19 century performing cartridge university is consider as father of modern digital computer.
- Babbage design different engine in 1822. Letal developed analytical engine for performing basic arithmetic calculation.
- **Mark i computer:** Harvard aiken design mark i computer in Harvard university. It performed basic operation and whose of 50 fit.
- **Atanasoff-berry computer:** it was developed by dr. Atanasoff and Mr. Assistant berry. It had 45 vacuum tube.
- **ENIAC (electronic numerical integrator and computer):** this was the first all-electronic computer. It was developed by john Mauchly and j. Presper Eckert it use 1800 vacuum tube. It size whose 20 x 40 feat.
- **EDVAC (electronic discrete variable automatic computer):** it is used the concept of stored program which was developed by john van human.
- **EDSAC (Electronic Delay Storage Automatic Calculator):** This was developed by British scientist in compotation to EDVAC.
- **UNIVAC-I (Universal Automatic Computer):** UNIVAC 1st digital computer. In 1952 international Business Machine (IBM) introduced IBM 701 computer.

Generation of Computer

First Generation

This computer used thousands of vacuum tube ENIAC, EDVAC, UNIVAC, EDSAC and IM 701 belong to this generation. Vacuum whose a high speed electronic device available at that time. The vacuum tube good perform operation this generation and they were replete as 1st generation the instruction where return and machine language and assembly language and where input a computer punched paper card.

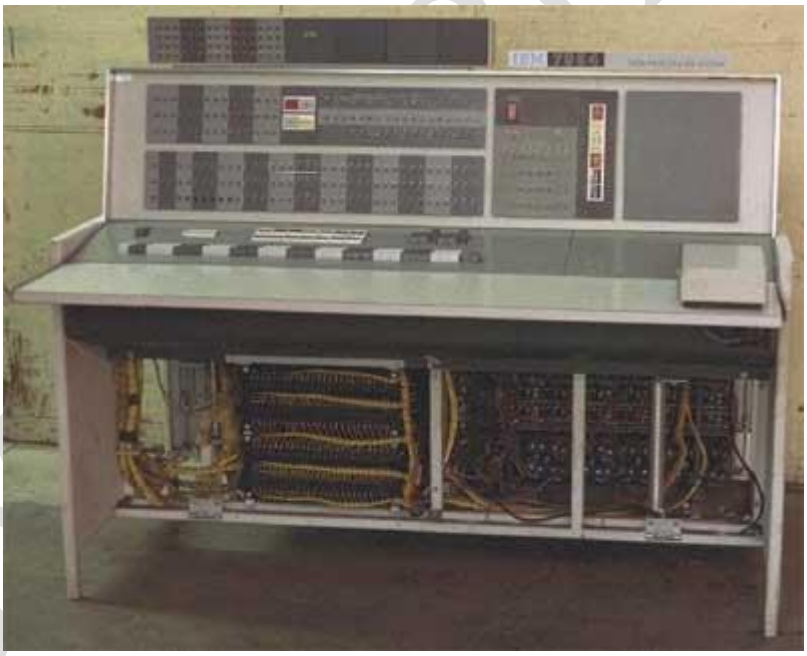
The Characteristics of this computer are as given below:

- This computer where very large in size and required special room for storage.
- They used Thousands of vacuum tube because of which large amount of heat who's generated.

- Because of vacuum tube the maintains required whose large.
- The vacuum tube had limited life and where needed to be replaced many time.
- This computer where very default to program and they used binary language and assembly language.

Second Generation

In second generation of computer transistor where used which where a better electronic device as compere to vacuum tube. The high level programming language such as FORTRNT (formula translation), COBOL (Common Business Oriented language), ALGOL (Algorithm Language), etc.



The Characteristics of this computer are as given below:

- They were 10 time faster them first generation.
- They were smaller than first generation and required less space.
- They consumed less power than first generation.
- They were more reveal first generation.

- They used faster primary and secondary storage device.
- The type of O.S. used in 2nd generation of computer whose batch O.S.

Third Generation

Integrate circuit (IC) where developed in 3rd generation which consisted combination of transistors, resistors and capacitors at the start the SSI (Small Scale Integration) whose use which contain 10-20 compounds letters MSI (Medium Scale Integration) whose used which of 100 compounds.

The period of third generation was from 1965-1971. The IC was invented by Jack Kilby.

Source: google.com

The Characteristics of this computer are as given below:

- They were more power full then 2nd generation computer.

- They required less power and generated less heat.
- They used large capacity magnetic disk and taps.
- Time sharing operating system who's used during this generation.

Fourth Generation

In this generation LSI (Large Scale Integration) made possible to integrate thousands of compounds on single chip. LSI who's followed by VLSI (Very Large Scale Integration) which contained 1 million on a single chips.

The Characteristics of this computer are as given below:

- Magnetic tapes and become popular during this generation and magnetic disk also become chip and popular.
- Many OS where developed for personal computer (PC) like MS DOS (Microsoft Disk OS).

- Local Area Network (LAN) and WIDE Area Network become popular during this generation.
- The OS used GUI (Graphic User Interface) which made is easier for the used to operate the computers.
- Programming Language like C, C++, DBASE, etc.

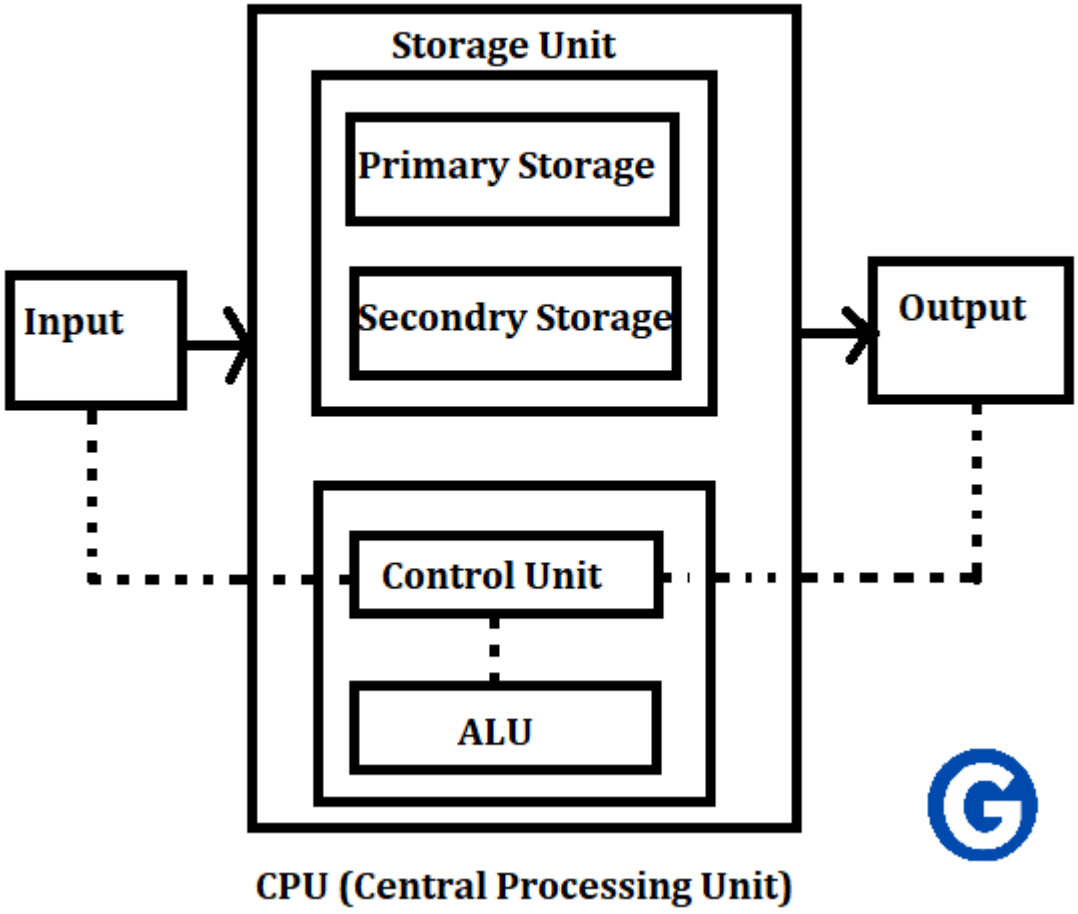
Fifth Generation

The ULSI (Ultra Large Scale Interface) which allowed millions of compounds in a single chip become popular this generation.

The Characteristics of this computer are as given below:

- Portable PC is (notebook Computer) which were smaller then PCs where popular in this generation.
- Optical Disk such as CDROM (compact Disk Read Only Memory), DVD (Digital Video Disk) become popular.
- Internet Become very popular and it allowed the user to access large amount of information stored anywhere in the world.
- High uptime due to hot-pluggable components.
- This generation used stinted high level programming language that allowed exit program between differences.

Block Diagram of Computer



The block diagram of basic computer organization is known above below. it cant's 5 function unit of a digital computer system.

1. Input Unit

Data and instruction enter a computer through an input unit. A computer memory is deigned to accept input to binary product and Hence all input device transform the input device into binary product.

The Following are performed by input unit:

- It read instruction and data from outside word.
- It convert this data and instruction.
- It supplies the data and instruction for the further processing.

2. Output Unit

- This unit performed opposite operation of an input unit.
- As the computer understand binary code, the result produces are also in binary.
- The conversion from binary to human readable form is done by the output unit.

3. Storage Unit

The data and instruction enter in a computer system have to be stored inside the computer before processing start.

A Storage unit stores the following:

- Data and instruction required for processing revised from input.
- Intermediate result of processing.
- Final result which send to output unit.

Storage Unit consists of two types of Storage:

A. Primary Storage:

- This memory is used to store sum parts of program instruction and data intermediate of result processing.
- The prime storage can contain information only when the computer is on.
- If the computer switch off then the information store in primary memory erase.

- The primary memory have limited capacity and it.

B. Secondary Storage

- Secondary Storage cheaper then primary storage and it can retain information a computer is OFF.
- The secondary storage contains programme instruction and data.

C. ALU (Arithmetic Logic Unit):

- In ALU the computer execution of instruction takes place during the processing.
- All calculation are made in the ALU.
- The data and instruction store in prime memory are transfer to ALU when required.
- ALU is design to perform to 4 basic arithmetic operation (+, -, *, %) and logical operation or comparing operation.

D. Control Unit:

The control unit coordinates and manages the enter the computer system. It obtained instruction from the program stored main memory, interprets the instruction and give different single according to the instruction.

E. Central Processing Unit (CPU):

Control Unit and ALU together are known as CPU and it is the brain of the computer in a computer system all calculation and compression are taken place inside the CPU and the CPU is responsible for activity and controlling different operation in the computer.