Computer is an advanced electronic device that takes raw data as input from the user and processes these data under the control of set of instructions (called program) and gives the result (output) and saves output for the future use. It can process both numerical and non-numerical (**arithmetic and logical)** calculations. It works the principle of I-P-O Cycle

A computer has four functions:

a.	accepts data	Input
b.	processes data	Processing
c.	produces output	output
d.	stores results	Storage

(While designing the Difference Engine and Analytical Engine Charles Babage has given the concept of these four units, Hence he is known as "Father of Computer".)

Input (Data) :

Input is the raw information or facts entered into a computer from the input devices. It is the collection of letters, numbers, images etc.

Process :

Process is the operation of data as per given instruction. It is totally internal process of the computer system.

Output :

Output is the processed data given by computer after data processing. Output is also called Result or information . We can save these results in the storage devices for the future use.

Computer System

The components of the Computer System are:-

1.   Hardwaer

2.   Softweer

3   Firmwaer

4.   Livewear

COMPUTER SYSTEM = HARDWARE + SOFTWARE+ USER

• **Hardware** = Internal Devices + Peripheral Devices All physical parts of the computer (or everything that we can touch) are known as Hardware.

• **Software** = Programs Software gives "intelligence" to the computer.

• **USER** = Person, who operates computer.

Hardware

All the physical and tangible components of Computer are called Hardware. In other words all the components that we can touch come under the category of Hardware eg **Keyboard, Mouse**

Software

Software is a set of instructions or a program that enables a hardware to run. Without the use of software a hardware cannot work.eg. Windows 8, Photoshop, MS Office etc.

Firmware

Instructions written/embedded on a hardware are known as firmware e.g., **BIOS** instruction on **ROM** chip are called Firmware.

Liveware

Persons or the users, using Computers in day to day activity are known as liveware.

Generations of computer:

First Generation (1940-56):

The first generation computers used Vacuum tubes & Machine language was used for giving the instructions. These computer were large in size & their programming was difficult task. The electricity consumption was very high. Some computers of this generation are **ENIAC, EDVAC, EDSAC& UNIVAC-1.**

Second Generation(1956-63):

In 2nd generation computers, Vacuum tubes were replaced by Transistors. They required only 1/10 of power required by Vacuum tubes. This generation computers generated less heat & were reliable. The first operating system developed in this generation.

The Third Generation(1964-71):

The 3rd generation computers replaced transistors with Integrated circuit known as chip. From Small scale integrated circuits which had 10 transistors per chip, technology developed to **MSI** circuits with 100 transistors per chip. These computers were smaller, faster & more reliable. **High level languages** invented in this generation.

The fourth Generation(1972- present):

LSI & VLSI were used in this generation. As a result microprocessors came into existence. The computers using this technology known to be **Micro Computers**. High capacity hard disk were invented. There is great development in data communication.

The Fifth Generation (Present & Beyond):

Fifth generation computing devices, based on artificial intelligence, are still in development, though there are some applications, such as voice recognition, that are being used today. The use of parallel processing and superconductors is helping to make artificial intelligence a reality. Quantum computation and molecular and nanotechnology will radically change the face of computers in years to come

ARCHITECTURE OF COMPUTER