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CHAPTER 1.

COMPUTER SYSTEM

- Hardware : The physical components of a computer that receives data from a computer for display, production etc, are known as Hardware.
  Example : Keyboard, Mouse, Printer, scanner etc.

- Software : Software is a set of instructions which on execution deliver the desired outcome.
  Example : Microsoft office, Google Meet, Web browser, VLC etc.

Memory Unit.

Memory is needed for calculation of intermediate result and storing of Information.

a) Primary memory : It is the volatile memory, storing the information for short period. Ex : RAM.

b) Secondary memory : It is external storage device for storing the content permanently. Example : Hard disk, Flash Drive, Pen Drive etc.

Unit of MEMORY.

Unit of memory is bit.

bit = 0, 1.

nibble = It is the group of four bits.

1 Byte = 8 bits.

1 Kilo Byte (KB) = 1024 bytes.

1 Mega Byte (MB) = 1024 Kilo Byte (KB)

1 Giga Byte (GB) = 1024 MB.

1 Terra Byte (TB) = 1024 GB.
1 Peta Byte (PB) = 1024 TB.
1 Exa Byte (EB) = 1024 PB.
1 Zetta Byte (ZB) = 1024 EB.
1 Yotta Byte (YB) = 1024 ZB.

Q. How much memory will be allocated for 24 EB in terms of MB.

$$24 \text{ EB} = 24 \times 1024 \times 1024 \times 1024 \times 1024 \text{ MB}.$$
$$= 26388279066624 \text{ MB}.$$

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- The CPU.

Central Processing Unit.

The CPU is the main control centre and processing unit. It is also called the brain of the computer, as it guides, directs, controls and governs the performance of the computer.

The CPU are divided into three parts.

1) Arithematic Logic Unit
2) Control Unit
3) Registers.

- Arithematic Logic Unit.

In computing, an ALU (Arithematic Logic Unit) is a digital circuit which conducts operations on binary numbers in arithematic and bitwise logical ways. The latter operates on binary numbers in terms of individual bits whilst numbers are covered through the arithematic processes.

- Control unit.

The CU controls and guides the interpretation, flow and manipulation of all data and information. CU helps in program execution by carrying out the instructions of the program.

3. Registers.

Register of or processor register are small unit for holding data. The CPU uses registers to temporarily hold some important processing information during the processing time.

FLASH MEMORY

It is an electronic non-volatile computer memory storage medium that can be electrically ~~so~~ erased and reprogrammed. It keeps stored data and information even when the power is off.

BLUE RAY DISK

The Blu-ray disk, also known as only Blue-ray, is a digital optical disc storage format. It is designed to supersede ~~to~~ the DVD format, and capable of storing several hours of vedios.

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- Cache Memory.

To speed up operations, of the CPU, a very high speed memory is placed between the CPU and Primary memory known as 'cache memory'. It stores the copies of the frequently used data, thereby, reducing the time to access them.

- Data and Information.

Data is always ray and are unorganised facts. When they are processed and ~~orrage~~ arranged, to make it meaningful, it is termed as information.

Primarily, there are three types of data:

(A) Structured Data

Data which follows strict record structure and are easy to comprehend is called structured data. Such data are present in pre specified tabular format.

(B) Unstructured Data.

Data which are not organised in a pre defined record format is called unstructured data. Examples: graph, audio, video, images etc.

(C) Semi Structured Data.

Data which have no well defined structure but maintains internal tags or seperate data elements are called semi-structured data.

• System Software.

There are three types of system softwares.

(A) OPERATING SYSTEM.

The operating system is a system software. It the most basic system software, without which the others cannot work. Some popular systems are Android, iOS etc.

(B) SYSTEM UTILITIES.

The systems specifically used for maintainance and configuration of computer system are known as system utilities. Example: Anti-virus software, disk cleaner tool etc.

(C) DEVICE DRIVERS.

Every day new devices and components are being added to the computer system. It is not possible for operating system only for operating diverse devices. each having diverse characteristics. Thus the responsibility of overall control, management at hardware level is delegated to device drivers.