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GENERIC ELECTIVE : IT INFRASTRUCTURE MANAGEMENT

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UNIT I – INTRODUCTION AND IT INFRASTRUCTURE

TOPIC 1 : COMPUTER BASICS

Computer is an electronic device that receives input, stores or processes the input as per user instructions and provides output in desired format.

Input-Process-Output Model

Computer input is called **data** and the output obtained after processing it, based on user's instructions is called **information**. Raw facts and figures which can be processed using arithmetic and logical operations to obtain information are called **data**.


Simplest Workflow of Computer

The processes that can be applied to data are of two types −

- **Arithmetic operations** − Examples include calculations like addition, subtraction, differentials, square root, etc.

- **Logical operations** − Examples include comparison operations like greater than, less than, equal to, opposite, etc.

The corresponding figure for an actual computer looks something like this −
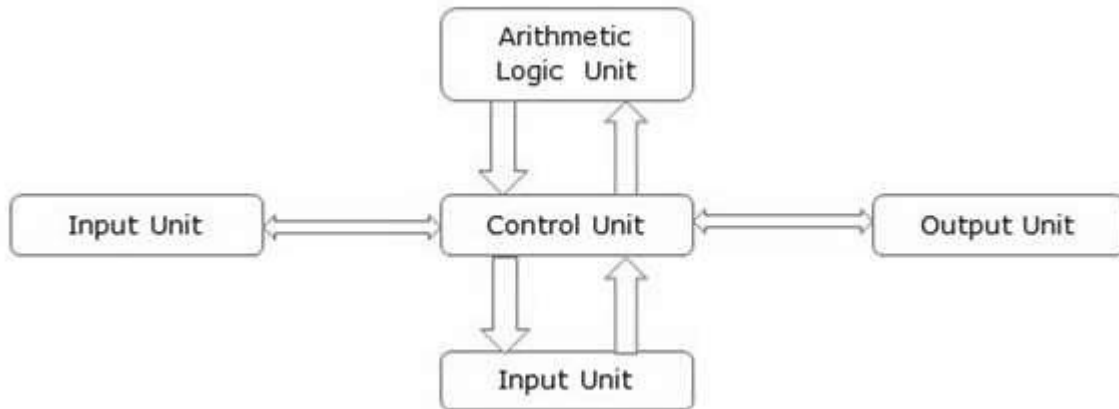
The basic parts of a computer are as follows −

- **Input Unit** − Devices like keyboard and mouse that are used to input data and instructions to the computer are called input unit.
- **Output Unit** − Devices like printer and visual display unit that are used to provide information to the user in desired format are called output unit.
- **Control Unit** − As the name suggests, this unit controls all the functions of the computer. All devices or parts of computer interact through the control unit.
- **Arithmetic Logic Unit** − This is the brain of the computer where all arithmetic operations and logical operations take place.
- **Memory** − All input data, instructions and data interim to the processes are stored in the memory. Memory is of two types – **primary memory** and **secondary memory**. Primary memory resides within the CPU whereas secondary memory is external to it.

Control unit, arithmetic logic unit and memory are together called the **central processing unit** or **CPU**. Computer devices like keyboard, mouse, printer, etc. that we can see and touch are the **hardware** components of a computer. The set of instructions or programs that make the computer function using these hardware parts are called **software**. We cannot see or touch software. Both hardware and software are necessary for working of a computer.

Characteristics of Computer

To understand why computers are such an important part of our lives, let us look at some of its characteristics −

- **Speed** − Typically, a computer can carry out 3-4 million instructions per second.
- **Accuracy** − Computers exhibit a very high degree of accuracy. Errors that may occur are usually due to inaccurate data, wrong instructions or bug in chips – all human errors.
- **Reliability** − Computers can carry out same type of work repeatedly without throwing up errors due to tiredness or boredom, which are very common among humans.
- **Versatility** − Computers can carry out a wide range of work from data entry and ticket booking to complex mathematical calculations and continuous astronomical observations. If you can input the necessary data with correct instructions, computer will do the processing.
- **Storage Capacity** − Computers can store a very large amount of data at a fraction of cost of traditional storage of files. Also, data is safe from normal wear and tear associated with paper.

Advantages of Using Computer

Now that we know the characteristics of computers, we can see the advantages that computers offer−

- Computers can do the same task repetitively with same accuracy.
- Computers do not get tired or bored.
- Computers can take up routine tasks while releasing human resource for more intelligent functions.

Disadvantages of Using Computer

Despite so many advantages, computers have some disadvantages of their own −

- Computers have no intelligence; they follow the instructions blindly without considering the outcome.
- Regular electric supply is necessary to make computers work, which could prove difficult everywhere especially in developing nations.