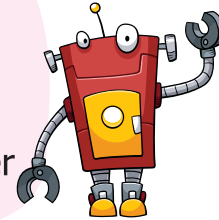




# Computer Basics

## Learning in this chapter

- ❁ Working of the computer
- ❁ Parts of a computer
- ❁ Strength and limitations of a computer



A computer is an electronic machine that is designed to work with information. The term computer is derived from the **Latin** word "Computare" which means to calculate. The main job of computer is to work on data. We can use it to store, retrieve and process the data quickly, easily and safely.

A Computer is one of the greatest inventions of mankind. It works at a very high speed and reforms the following functions :

- Input** : Accepts data given by you (the user).
- Processing** : Works on data according to the instructions.
- Output** : Gives the desired results.
- Storage** : Stores information according to need.

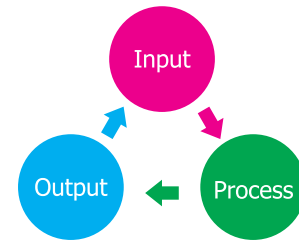


## Do you Know?

Data refers to any type of information that we enter into the computer like text, numbers, pictures, sound, music and video etc.

Generally a machine work through the same process which consists of the following three steps :

1. They take in something as **input**.
2. Work on the input (or **process** the input), and
3. Give a desired **output** (result of processing).



This process is called **Input-Process-Output** cycle. Here are few examples of Input-Process-Output cycle from your daily life.

- Talking to your friend on a telephone.



Dialing the number  
(Input)



Connecting the number  
(Processing)



Talking to your friend  
(Output)

- Sharpening pencil using a sharpener.



Pencil  
(Input)



Sharpening the pencil  
(Processing)



Sharpened pencil  
(Output)

## Trendy Bytes

Charles Babbage is known as the father of computer.



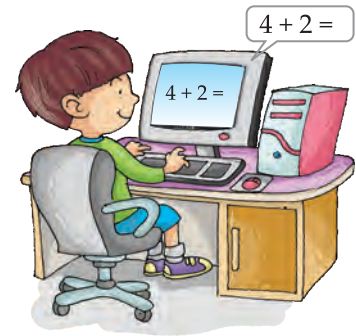


## Working of the Computer

The computer is also a machine. It also works according to the **Input – Process – Output** cycle.

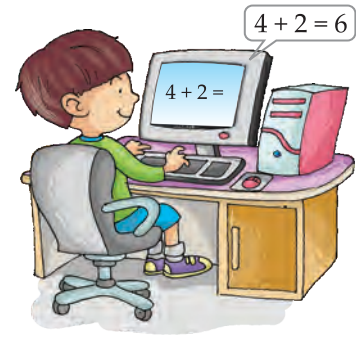
1. You enter **input** into the computer in the form of data and instructions using keyboard and mouse etc.

**Input** means the data and instruction that we enter into the computer.



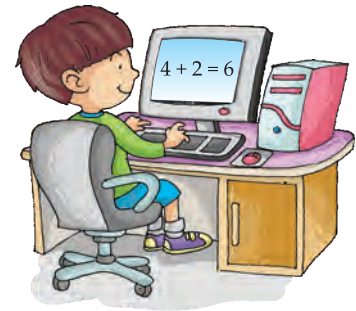
2. The computer **processes** the input data according to the given instructions.

**Processing** means the work that the computer does on the input.



3. The computer then shows the **output** or the result of processing to you using the monitor, speakers, etc.

**Output** means the final result given after processing of inputs.



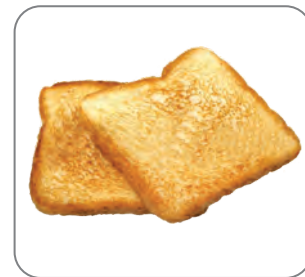
### Do you Know?

People who use the computer and give input (data and instructions) to computer are called **Users**.

## Activity

Write 'Input', 'Process' and 'Output' below the correct picture.

Making toast from bread using a toaster.





## Parts of a Computer

For the **Input Process Output (IPO) Cycle** a computer required some devices. These are:

- Input Devices
- Processing Devices
- Output Devices
- Storage Devices



## Input Devices

Any data or instruction that we enter in a computer is called input. The devices used to enter data into a computer are called input devices. The most commonly used input devices are keyboard and mouse.

### Keyboard

A keyboard is an input device which has a number of keys on it. It is used to input (feed) your work that is information and instruction into the computer.



Keyboard

### Mouse

A mouse is a pointing device. It is used to draw pictures, point, select and move any object on the screen. When we move a mouse, a pointer on the screen **mouse** in the same directions. Now a days mostly optical mouse are used which uses light to sense the movement of the cursor.



Mouse

Some other input devices are joystick, scanner, microphone and light pen.



Joystick

### Joystick

It is used to play games on the computer.

### Lightpen

It is used to select objects and text on screen.



Lightpen



## Scanner

It is used to capture (scan) images from printed copies into the computer.



Scanner



Microphone

## Microphone

It is used to record your voice, music and sounds into the computer.



## CPU (Central Processing Unit)

**Central Processing Unit (CPU)** is used to process the data. So it is called the **processing unit** of a computer. CPU is present in the CPU box. It is also called the brain of computer because it controls all the functions of a computer.

It has three main parts :

### ALU (Arithmetic and Logic Unit)

This unit is used to do all the arithmetic calculations like, addition, subtraction, multiplication and division. It is also used to do logical operations like greater than, smaller than, greater than equal to, less than equal to etc.

### CU (Control Unit)

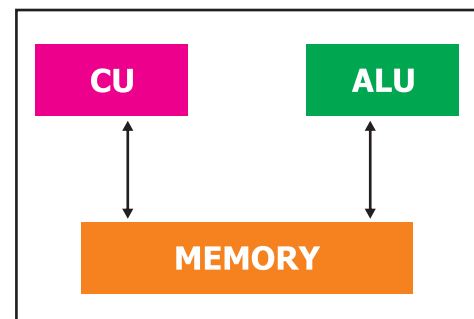
This unit works like a traffic police man. It controls and manages the flow of information between different parts of the computer.

### Memory Unit

This unit stores all the data and information that is to be processed temporarily.



Central Processing Unit



**Do you Know?**

Processed data with meaningful form is called information.



## Output Devices

**Output** is the data that has been processed into useful and meaningful from called information. The devices used to show the output (result) of the work done by computer are called **output devices**. Commonly used output devices are monitor and printer.



## Monitor

It is used to display the work done by you on a computer. It is also called the Visual Display Unit (VDU).

There are three types of monitors-

- (i) CRT (Cathode Rays Tube) Monitor.
- (ii) LCD (Liquid Crystal Display) Monitor.
- (iii) LED (Light-Emitting Diode) monitor.



Monitor



Printer

## Printer

A printer is an output device which takes information from the computer and prints it on a sheet of paper.

The most commonly used printers are Dot matrix printers, inkjet printers and laser printers.



## Remember

- The information that we see on a monitor is called **soft copy**.
- The output printed on a paper is called **hard copy**.

Some other output devices are speakers and Head Phones.



Speakers

Speakers help us listen to the sound coming from a computer.



Head phone

Head phone is used to listen to the music without disturbing anyone around us.



## Storage Devices

Besides Input-Process-Output (IPO) cycle a computer does one more thing, it stores the output for later use. The devices on which it stores our work permanently are known as storage devices. Commonly used storage device is **Hard disk**.

## Hard disk

Hard disks are the largest storage devices used in most computers. When you save information on a computer. It gets stored on the hard disk.



Hard disk





CD



DVD



Pendrive

Apart from hard disks, computers use CDs, DVDs and Pen drives to store information.



### Strength of a computer

A computer is a useful learning tool. Following are the strength of a computer :

- (i) **Speed** : A computer can works faster than human beings and can do large number of calculations quickly.
- (ii) **Reliability**: Computers are quite reliable. They do not make any mistakes.
- (iii) **Versatility**: A computer can prefer a variety of tasks and is used in almost all fields.
- (iv) **Accuracy**: A computer always gives correct results.
- (v) **Diligence**: A computer never gets tired or bored. It can work for long hours.
- (vi) **Storage**: A computer can keep huge amount of data in its memory.



### Limitations of a computer

Despite its various features a computer have the following limitations:

- (i) **No Decision-Making power** : It cannot take any decision of its own. It does only those tasks which are already instructed to it.
- (ii) **No Self Intelligence** : It does not have any intelligence of its own. It works according to the instructions only.
- (iii) **Zero IQ (intelligence Quotient)** : A computer does not have an IQ. By mistake if you enter the incorrect input, it will give the wrong result.
- (iv) **Electricity** : A computer depends on electricity and cannot work for long time without it.

## Activity

1. Which of these is not a storage device?



## 2. Which of these is the main storage device of the computer?



### POINTS to Recall

- A computer is an electronic machine, that works with the data and instructions given by the user.
- Computer works on Input–Process–Output cycle or IPO cycle.
- Data and instructions that you enter into the computer are called input.
- Keyboard and mouse are used to enter data and instruction into the computer.
- The work that a computer does on the input is called processing. Result of processing is called output.
- A CPU does all the calculations and displays the result to the monitor.
- A CPU is made up of MU, CU and ALU.
- Storage devices like hard disks, DVDs, CDs and Pen drives help computer to store information.
- Output devices show the result.
- Computer can work faster than human beings, are more accurate and have a greater storage capacity.
- A monitor displays all the work that we do on a computer and also shows the output.
- However computers have no IQ (Intelligent Quotient). They cannot think or take decisions on their own.



### TERMS to Learn

- **Input** : Data and instructions you enter into the computer for processing.
- **Process** : The work that a computer does on the data to give output.
- **Output** : The final result of information given by the computer after processing the input.
- **Data** : Data refers to any type of information that we enter into the computer.
- **Information** : The Data that has been processed into useful and meaningful form called information.





## Multiple Choice Questions :

### A. Tick (✓) the correct answer :

- The result you get after processing is \_\_\_\_\_.  
 (a) Machine  (b) Output  (c) Input
- \_\_\_\_\_ displays the result after processing the data.  
 (a) Monitor  (b) Printer  (c) Mouse
- \_\_\_\_\_ controls all parts of a computer system.  
 (a) MU  (b) CU  (c) ALU
- Multiplying two numbers is \_\_\_\_\_.  
 (a) input  (b) processing  (c) output
- The information that we see on a monitor is called \_\_\_\_\_.  
 (a) blank copy  (b) hard copy  (c) soft copy

### B. Fill in the blanks with the help of given hints:

**HINTS :** Output, Input, IPO, Users, Decisions, Process

- Computer works according to the \_\_\_\_\_ cycle.
- Computer is a machine that helps us to store, retrieve and \_\_\_\_\_ data.
- Anything (data or commands) that you enter into a computer is called an \_\_\_\_\_.
- A computer takes inputs and gives \_\_\_\_\_.
- People who give inputs to the computer are called \_\_\_\_\_.
- Man can take his own \_\_\_\_\_ but a computer cannot.

### C. Match the following correctly by drawing lines :

- |               |  |
|---------------|--|
| 1. Input      | a. result of processing                              |
| 2. Processing | b. stores information according to need              |
| 3. Output     | c. data and instructions                             |
| 4. Computer   | d. work done by the computer                         |
| 5. Storage    | e. machine that processes, stores and retrieves data |

### D. Write 'T' for True and 'F' for False statements :

- Data and information refers to the same thing.
- Printer is an output device of the computers.
- The hard disk is the main processing device of the computer.
- The printer prints computer work on a sheet of paper.

5. A monitor is also known as VDU.   
6. We use speakers to listen to the music without disturbing others.

**E. Write full form of the following :**

IPO _____	VDU _____
CPU _____	CRT _____
ALU _____	LCD _____
CU _____	IQ _____

**F. Very Short Answer Questions :**

1. Name a pointing device.  
\_\_\_\_\_
2. What do you call the information, which you enter into the computer?  
\_\_\_\_\_
3. Which part of a computer shows the output?  
\_\_\_\_\_
4. Which part of computer is used for arithmetic calculations?  
\_\_\_\_\_

**G. Short Answer Questions :**

1. What is processing?  
\_\_\_\_\_  
\_\_\_\_\_
2. How do we take a hard copy of data?  
\_\_\_\_\_  
\_\_\_\_\_
3. Explain any two points of strength of a computer.  
\_\_\_\_\_  
\_\_\_\_\_
4. Mention any two limitations of a computer.  
\_\_\_\_\_  
\_\_\_\_\_






# Activity Time

A. Look at the pictures and mark the steps as input, process or output :

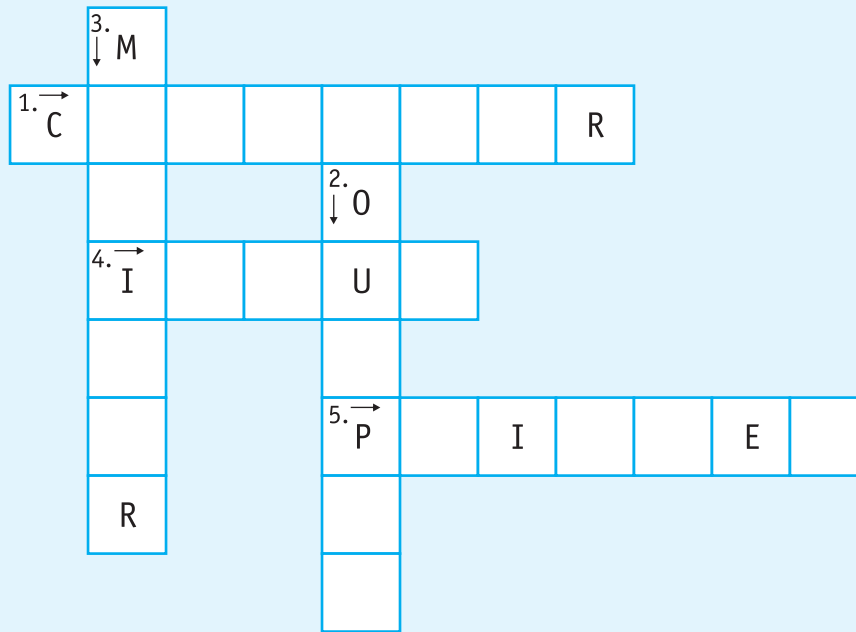
1.			
2.			
3.			

B. Write the names of the computer parts shown. Also mention whether each one of them is an input, output, processing or storage device :

(i)		_____	(ii)		_____
(iii)		_____	(iv)		_____
(v)		_____	(vi)		_____
(vii)		_____	(viii)		_____

**C. Complete the crossword puzzle using the hints given below :**

1. An electronic machine used to work on data.
2. The final results of processing.
3. A television like main output device.
4. Data and instruction enter into the computer.
5. It gives output on a paper.



**Lab Activity**

1. Visit your computer lab. Use as many different devices as you can such as the mouse, keyboard, printer and monitor. Now make a list of the tasks that you could do using all these input and output devices.
2. List as many parts of the computer as you can. Try to make a note of all other devices that have not been covered in the book. You can take help of the magazines and the Internet. Now, classify these parts as input, processing storage and output devices. How many devices of each type could you find?

**For Teacher's**

1. The Input-Process-output flowchart should be explained with examples so that the flow of data is clear to the students.
2. To the students explain about the working of CPU.