

What is a Computer System?

The Computer: A First Look

Probably when we think of a computer the first image that comes to mind is one that is similar to the diagram below.



This is called a **desktop computer system**.

Input and Output

This computer system is composed of a number of devices. These devices can be grouped as shown below.

Group 1: Keyboard and mouse. These are called **input** devices. By means of these devices we ‘talk’ to the computer. By means of the keyboard we tell the computer what we want to write in a letter. By means of the mouse we tell the computer which program we want to use.

Group 2: Screen (monitor) and speakers. These are called **output** devices. By means of these devices the computer ‘talks’ to us users. If I want to see a photo the computer shows it to me on the monitor. If I am watching the news (or just hearing) it is the speakers that are passing the words to me.

Group 3: System unit only. This is the part that does all the work. We say that this part ‘processes’ the information. For example, if the user wants to multiply two numbers this is done in the system unit. If the user wants to perform changes on a picture it is the system unit that does the work asked by the user.

Group 4: Not seen in the diagram. The computer system has a means to communicate with a network.

Defining a Computer

Note that we input information to the computer e.g.

- The length and height of a triangle.
- A sentence to be added to a paragraph.

The computer processes the information e.g.

- It calculates the area of the triangle.
- It inserts a sentence in a paragraph.

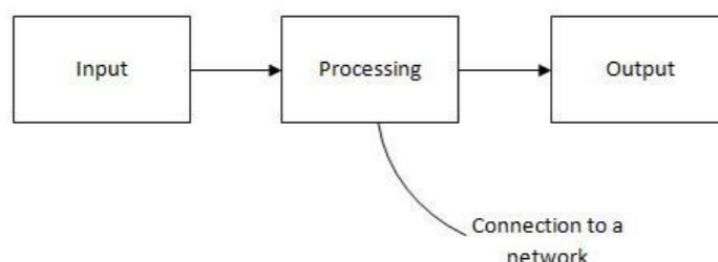
The computer outputs information e.g.

- The area of a triangle.
- A paragraph.

For this reason, we call the **computer** ‘a processor of information’.

A Simple Diagram to Represent a Computer

From what we saw up to now, a diagram to represent a computer can be the following:



Tasks of Handling Information

We have already seen three of these tasks i.e. inputting, processing and outputting.

The computer can perform other tasks seen here:

Task	Description
Inputting	User passes information to the computer.
Processing	Computer performs actions on the inputted information.
Outputting	Computer passes results to the user.
Storing	Computer stores information to be read later when needed.
Retrieving	Computer is able to find saved information.
Sending	Computer can send information to a network.
Receiving	Computer is equipped to receive information from a network.

Example:

1. User A types the first part of a letter. Inputting.
2. User A adds words, corrects spelling, performs underlines etc. Processing.
3. User A saves the unfinished letter. Storing.
4. An hour later, user A opens the letter to continue working on it. Retrieving.
5. When the letter is ready, A sends it as an attachment in an email to user B. Sending.
6. User B opens the email and reads the attachment. Receiving.

The Widespread Use of Computers

Example 1: **Washing machine**

- Step 1. Person puts clothes in washing machine
- Step 2. Person chooses settings for the washing e.g. duration of wash, temperature etc.
- Step 3. Computer embedded inside the washing machine gives command to the machinery to execute the wash as indicated by the person
- Step 4. When the time is up the computer stops the machine and a light that indicates the washing is ready starts blinking.



Example 2 **GPS** (Global Positioning System)

- Step 1. Your GPS device reads signals from satellites orbiting the world.
- Step 2. Your GPS device calculates the position where you are.
- Step 3. Your GPS device consults the map held within its memory and compares this position to where you want to go.
- Step 4. Your GPS decides the best way you should move from here.
- Step 5. Repeat from step 1 until you arrive to your destination.



Exercise 01

- 1) In the table below are listed a number of ways of inputting data to a computer and also a number of input devices. Associate each inputting way with its corresponding device.

Way of inputting data	Device
a) Typing	i) Mouse
b) Moving a pointer on the screen and clicking.	ii) Camera
c) Touching a surface	iii) Keyboard
d) Speaking	iv) Touch screen
e) Making gestures	v) Microphone

- 2) Name three output devices.
- 3) Fill in the following sentences with the appropriate term. The terms are: store, Internet, processing and network.
 - a) In between input and output the computer performs _____.
 - b) A computer can also be connected to a _____. Many personal computers today are connected to the _____.
 - c) The computer can store information in its _____.
- 4) State the definition of the computer.
- 5) Consider the following tasks related to the computer: input, processing, output, storing and retrieving. Which of these tasks is being performed in the following sentences (the first one is done for you)?
 - a) The user opens the Calculator program. (retrieving)
 - b) The user enters 33/11+6, then presses 'Enter'.
 - c) The calculator program works out the value of the expression.
 - d) The calculator program displays the result on the screen.