1.1 The Computer System

Activities you can do with a computer

These are some things you can do with a computer.

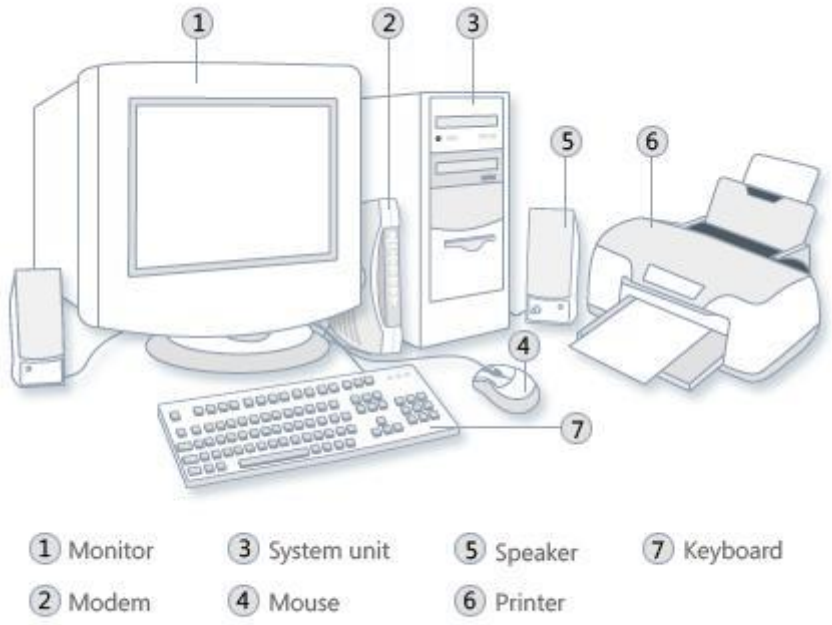
- Write a letter or a story; save it, print it.
- Play games, even different kinds of games.
- Connect to the Internet, search for information, send emails, chat and even talk to friends.
- Helps you study for example mathematics. The computer gives us problems to work out and then tells you if your answers are correct or not.
- Watch videos.

Types of computers

There are various types of computers, for example:

- desktop computer
- laptop computer
- tablet

A Desktop computer



Desktop computer system

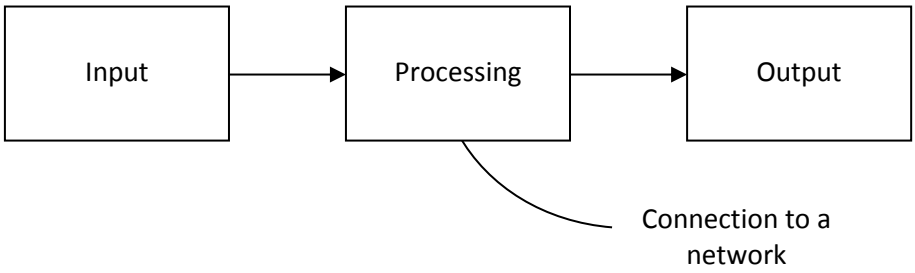
The diagram above shows a **Computer System**.

With the above system we can add an eight item: a **scanner**.

All the above devices can be divided into four groups:

1. **Keyboard, mouse and scanner**. 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. By means of the scanner we "pass on" an image to the computer.
2. **Monitor, speakers and printer**. These are called **output devices**. By means of these devices the computer "talks" to us users. If I am using a calculator I see the result on the monitor. If I am watching the news (or just hearing) it is the speakers that are passing the words to me. By means of the printer the computer gives the user for example a copy of a poster that has been designed using a computer system.
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 change the colour of a picture it is the system unit that does the work asked by the user.
4. **Modem** only. The modem is that part that allows our computer system to communicate with the Internet.

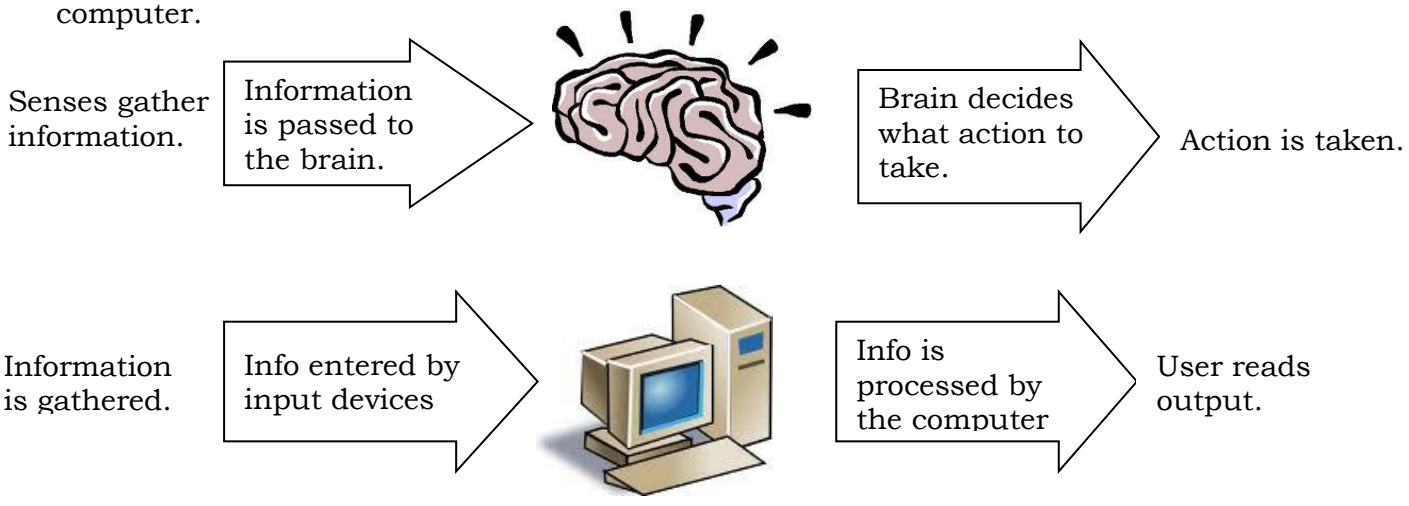
A simple model of a computer



Information

Our senses pass information to us.

There is a similarity between information passed to the brain and information passed to a computer.



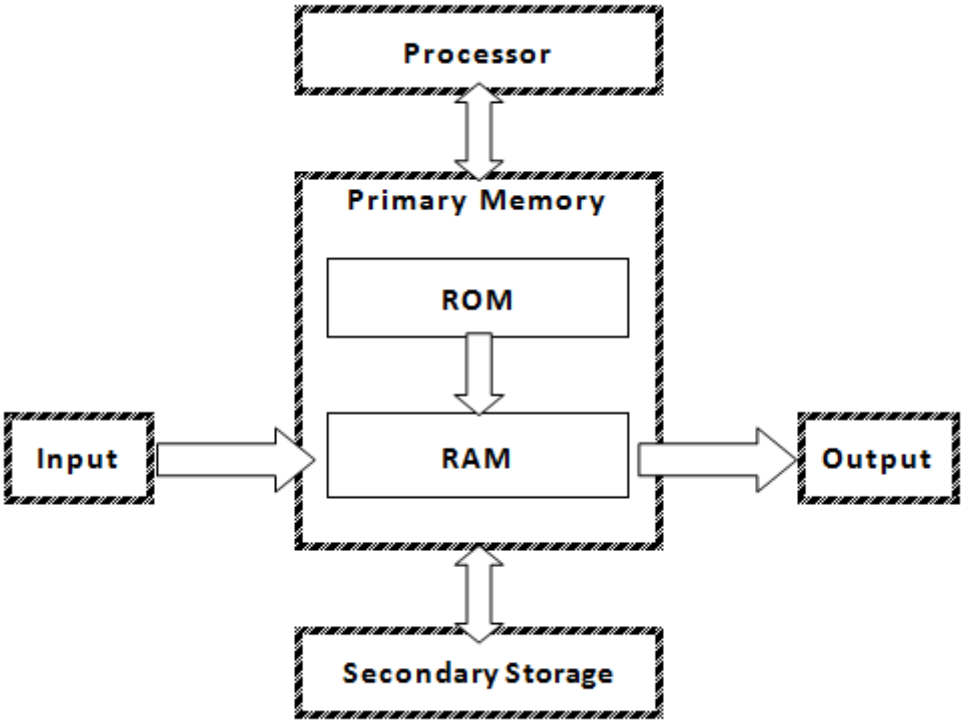
We can therefore conclude that the **computer** is a "processor of information".

Data and information

By **data** we mean the facts that we enter to the computer so that these will be processed to give us the required results. These results constitute the **information** that we need.

Schematic diagram of a computer

The following diagram shows the main parts of a computer.



The meaning of the terms used in the above diagram is the following:

- **Primary memory** is made up (mainly) of:
  - **RAM** (Random Access Memory): Enables a computer to store, at least temporarily, data and programs. This is **volatile**.
  - **ROM** (Read-Only Memory): holds programs that the computer needs at start-up and programs that the computer uses very frequently. This is **non-volatile**.
- **Mass storage** (Also called **Secondary** Storage or **Auxiliary** Storage): Allows a computer to permanently retain large amounts of data. Common mass storage devices include disk drives and tape drives.
- **Input device/s**: Usually a keyboard and mouse, the input device is the conduit through which data and instructions enter a computer.
- **Output device/s**: A display screen, printer, or other device that lets you see what the computer has accomplished.

- **CPU** (Central Processing Unit or processor): The brains of the computer, this is the component that actually executes instructions.

Some other terms

- **Read** (or **retrieve**): get information e.g. the computer reads from the hard-disk, or from the RAM.
- **Write** (or **store**): when information is placed in a device e.g. pen, hard-disk, RAM. This process causes **overwriting** and the information that existed before is lost.

So the information can be:

- inputted
- processed
- outputted
- stored
- retrieved
- sent
- received

Integration of programs

Some programs can be **integrated** together. For example a graph in a spreadsheet program can be exported to a word-processing program. The group of the integrated programs is called a **package**.