How it works

Input

For a computer to do anything it needs data and to be asked to use this data. Data can get into the computer through input devices. These input devices can be keyboards, mouse, microphone and etc. They all collect physical data and send it to the computer to translate and understand. One of the most common input you give your computer is asking it to execute a program. Clicking an icon that runs the program does this. Without the physical click the software would never start.

Software

Software

application system

- MS Word tools
- Email
- Utility
- Operating platforms
- systems

Programs - executed by the computer to solve tasks

Algorithms - An exact, unambiguous process for solving a problem or completing a task

There are two categories of software:

- Application software is designed for human use
- Systems software is designed to control and manage the computer

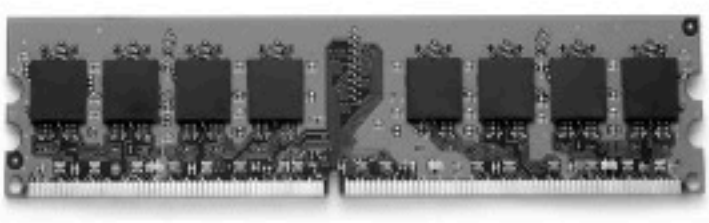
Large tasks require a collection of programs. A program is an algorithm that solves some task, written in a language that can be understood by a computer

Programming languages provide the syntax for computers to be able to understand the steps of an algorithm

Secondary storage

The secondary storage device can hold data not only temporary, but also for long periods of time. Even when we shut down the computer and there is no power.
The most common type of secondary storage device is the disk drive. USBs and floppy disks are secondary storage devices too. So is CDs and DVD. Those are secondary storage devices, which are reliable, inexpensive and small enough to keep in the pocket.

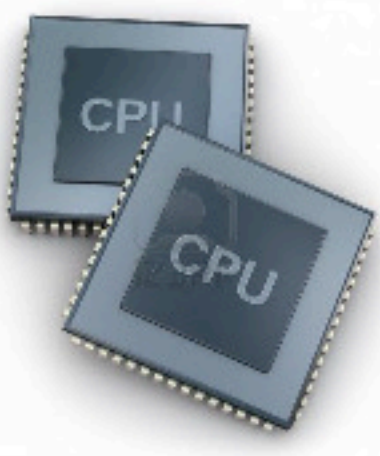
Main memory



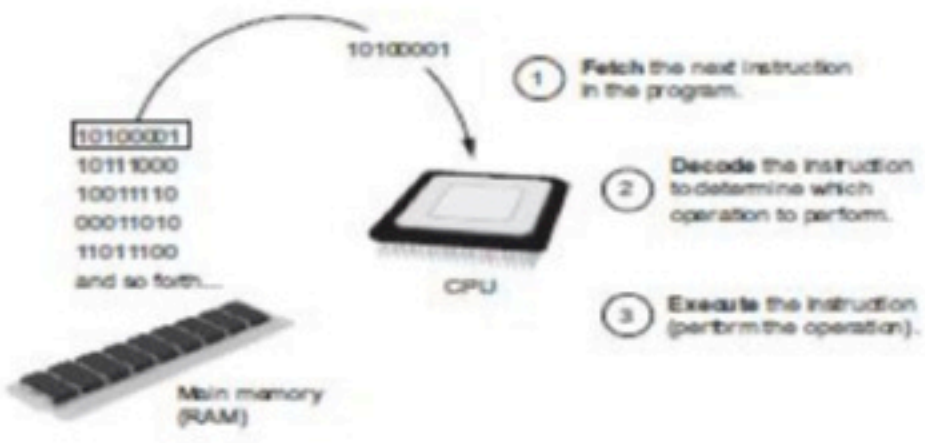
Main memory is also called RAM (Random access memory). This is the working area of the computer, where the programs are temporarily stored as being used. When the computer is turned off, the data will be deleted. The CPU has quick access to the data stored in the main memory therefore the name “Random access memory”.

CPU (Central Processing Unit)

Is the part of the computer that runs programs. It is the most important component of the computer, beacuse it runs software.



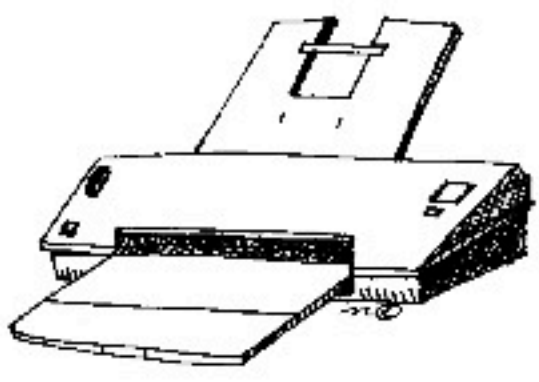
Fetch - decode - execute cycle



When a computer needs to execute a command, it will have to first fetch (or read) the instructions from memory, where the program is loaded, then decode (or understand) what the instructions are, and finally be able to execute (perform) them.

Output

Output devices formats and presents data for people or other devices. Examples of output devices is a printer, video displays and speakers.



Computer language

The CPU only understands machine language (low-level-language). Therefore we use assembly language (low-level-language) and high-level-language, where the statements are natural language (e.g. 'display'). If it fits into the syntax the interpreter will translate the high-level-language to the binary machine language.