Storage

One of the main components of a computer system is storage. A computer system stores data, either temporarily or permanently, on different components/devices. All computer storage devices can be divided in two: Primary Storage or Secondary Storage.

Primary Storage

The Primary Storage of a computer system is also called the Main Memory. It is made up of RAM (Random Access Memory) and ROM (Read Only Memory). All the instruction and data that need to be processed by the CPU are stored in the main memory which is very fast when compared to secondary storage.

RAM

Any location in the RAM, as the name implies, can be directly accessed by the CPU. It is sometimes called the working memory as all the programs and data used by the user are stored in it temporarily. RAM is quite expensive and also volatile ie. all the data inside it is lost when the computer is switched off. In short, RAM is

- Volatile
- Read and write
- Very Fast
- Holds all instructions/data processed by the CPU

Typically, nowadays a PC will have around 2GB to 4GB of RAM.

ROM

ROM comes already built-into the motherboard of a computer system and its contents cannot be changed apart from some simple settings. Therefore, ROM contains data that can only be read, not written to. A computer only has a small amount of ROM and it contains a program called the

bootstrap loader which allows the computer to start-up (load the Operating System into RAM) when the computer is switched on. Unlike RAM, ROM is non-volatile, data is not lost when the power is switched off. In short, ROM is:

- Non-Volatile
- Read only
- Fast
- Holds the bootstrap loader to start-up the OS