**Memory:**

Memory is an area of a computer that stores data and instructions to be accessed by processor as well as the result of processing.

**Structure of Memory:**

The main memory of a computer consist of thousands or millions of cells of storage locations. Each cell can store a bit. One bit can represent 0 or 1. Bit stand for binary digit. Each byte in the memory has a unique number assigned to it. The number is known as the address of that byte.

**Accessing Data in Main Memory:**

The main memory can be viewed as a collection of bytes arranged in an order. CPU can access any byte from main memory. The byte in the memory can be accessed by specifying its address.

**Types of Memory:**

There are two types of memory

1. **Internal Memory:** The type of memory that exists inside the computer known as internal memory. For Example RAM , ROM , Cache etc
2. **External Memory:** The type of memory that attach with computer for storing data called external memory. For Example USB Floppy Disk etc

**Internal Memory:**

The type of memory that exists inside the computer known as internal memory. For Example RAM , ROM , Cache etc

**Types of Memory:**

1. **Volatile Memory:** Volatile memory loses its contents when the computer is turned off. For Example RAM
2. **Non-Volatile Memory:** Non-Volatile memory does not loses its contents when the computer is turned off. For Example ROM

**RAM** V/S **ROM**

|  |  |
| --- | --- |
| **RAM** | **ROM** |
| RAM Stands for Random Access Memory | ROM stands for Read Only Memory |
| RAM is a temporary Memory | ROM is a permanent Memory |
| RAM enables data to be both read and written to memory and data can be changed or deleted. | The instructions written in ROM can only be read but cannot be changed or deleted. |
| Instructions in RAM change continuously as new programs are executed and new data is processed. | It is not possible to write new information or new instructions into ROM so ROM is non-volatile Memory. |
| When the power is turned off all the programs and data are erased from RAM. So RAM is Volatile Memory. | When the power is turned off the instructions stored is ROM are not lost therefore, ROM is non-volatile memory. |
| Types: SRAM , DRAM | Types: PROM , EPROM , EEPROM |

**Cache Memory:**

A cache memory is a small and very fast memory. It is designed to speed up the transfer of data pr instructions. It is located inside or closed to CPU. It is faster than RAM. The data and instructions that are most recently or most frequently used by CPU stored in cache.

**Memory**

**L2** **L3**

**CPU L1**