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# **Cache Memory/ CPU Memory**:

* It is integrated directly with CPU chip or placed on a separate chip that is interconnected with CPU.
* It stores program instructions (set of commands) that frequently re-referenced by an application/software during an operation.
* It also stores data that CPU may frequently require for manipulation.
* When user request for some service/resource, data and instructions are first retrieved from RAM.
* These data and instructions are stored in Cache memory.
* When the same resource is requested again, CPU will look these information in Cache memory first. If required information is found there, it is retrieved from cache memory instead of main memory. Hence, it speeds up the working of CPU.
* Cache memory is relatively in expensive, small size (because it is very expensive) and faster than main memory RAM.
* Cache memory lies in the path between the processor (CPU) and main memory (RAM). Hence it has lesser access time and is faster than RAM.
* The amount and type of information stored in Cache memory depend on algorithms.

## **Types of Cache Memory**:

1. Level 1 (L1) Cache:

* It is extremely fast and small in size.
* It is generally embedded in the CPU.
* There are two types:

L1 data cache and L1 instruction cache

1. Level 2 (L2) Cache:

* It is larger than L1.
* It may be located in CPU or on a separate chip.

1. Level 3 (L3) Cache:

* It works on improving l1 and L2.
* It is significantly slower than L1 and L2 but double than RAM.
* In multicore processors, each core may have individual L1 and L2 but share common L3 cache.

**Commands to check cache memory size**:

* Command: lscpu
* Command: lshw -C memory