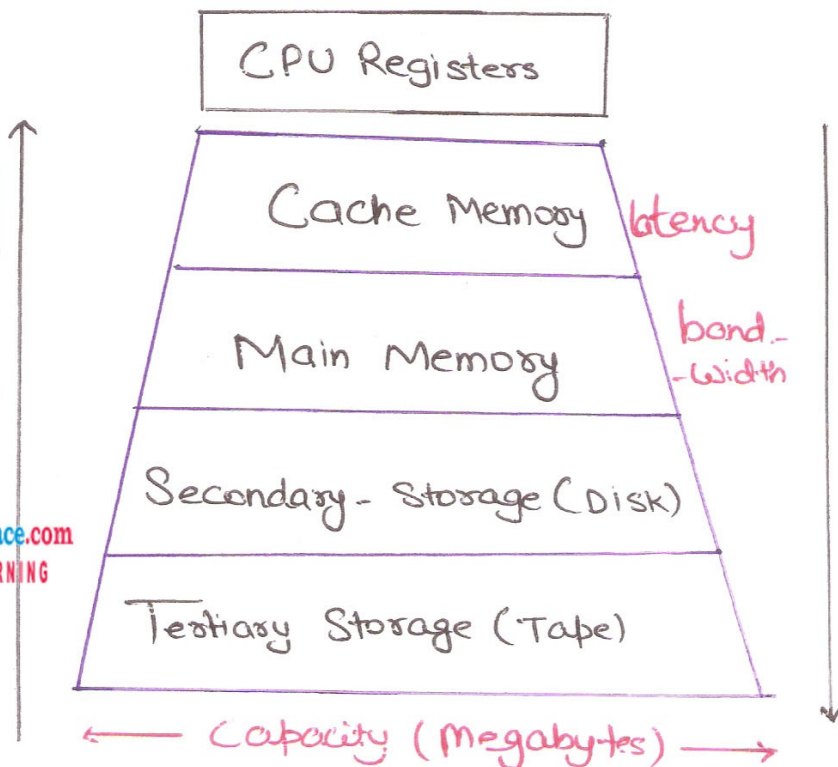# Structured Organization- Cache Memory:-

Cache Memory :- The term Cache means a safe place for hiding or storing things.

→ Cache Memory (CM) is a small, fast memory which holds copies recently accessed instructions and data.

→ When the processor makes a request for memory Reference the Request is first sought in the cache.

→ If we get that memory Reference which is Requested we call it 'CACHE HIT'. Otherwise 'Cache Miss'.

→ In the case of Cache Miss, requested element is brought from a subsequent memory level from Memory Heirarchy and placed in Cache.

Computer Science Lectures By ER Deepak Garg

→ A block of elements are transferred from Main Memory to Cache memory by expecting that the next requested element will be residing in the neighboring locality of the current requested element (spatial locality) and this has to happened under one main memory Access time.

Some Main Points of Cache Organization:-

→ Cache is organized not in bytes, but as blocks of cache lines, with each lines containing some no. of bytes (16-64).

→ Cache lines dont have fixed addresses, which enables the cache system to populate each cache line with a unique (non-contiguous) address.

→ 3 methods for filling a cache lines.

→ ① Fully Associated - The most flexible

② Direct mapped - The most basic

③ Set Associative - A combination of the two.

Computer Science Lectures By ER. Deepak Garg