The set $\wedge$ inclusion relationship implies that all information items are originally stored in the outermost level M_n

Coherence Property :- The copies of the same information item at successive memory levels be consistent.

If a word is modified in the cache, copies of that word must be updated immediately or eventually at all higher levels.

The frequently used information is often found in the lower level in order to minimize the effective access time.

There are two strategies for maintaining the coherence

Write through (WT) :- Immediate update in M_{i+1}, if a word is Modified in M_i ($i=1-n$)

Write Back (WB) :- Delay the update in M_{i+1} until the word being modified in "M_i" is replaced or removed from "M_i".

Locality of Reference!- It is a program behavior which develop memory hierachy.

→ Memory references are generated by the CPU for either instruction or data access.

→ These accessed tend to be clustered in certain regions in time, space, and ordering.

→ Most program act in favour of certain poortion of their address space at any time window.

→ Hennessy & Patterson pointed out a 90-10 rule. Means that a typical program may spend 90% of its execution time on only 10% of the code