

CACHE MEMORY



CS 147

October 2, 2008

SamPriya Chandra

LOCALITY

PRINCIPAL OF LOCALITY is the tendency to reference data items that are near other recently referenced data items, or that were recently referenced themselves.

TEMPORAL LOCALITY : memory location that is referenced once is likely to be **referenced multiple times** in near future.

SPATIAL LOCALITY : memory location that is referenced once, then the program is likely to be **reference a nearby memory location** in near future.

CACHE MEMORY

Principle of locality helped to speed up main memory access by introducing small fast memories known as **CACHE MEMORIES** that hold blocks of the most recently referenced instructions and data items.

Cache is a small fast storage device that holds the operands and instructions most likely to be used by the CPU.