

Unit 01: Memory Caching and Multilevel Caching Performance

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Objectives:

- 1 List and describe the typical levels and characteristics of computer memory.
- 2 Introduce and discuss the concept of locality and analyze the performance of a multilevel memory hierarchy.
- 3 Extend multilevel cache performance to 3 or more levels to calculate effective access time.

Memory Constraints



- Amount of memory
- Speed to access memory
- Cost of the memory (speed and cost tradeoff)



We always want more memory. Most applications require some minimum amount of memory to work.



Faster memory access means can finish programs faster or process more data in same time.



There is a tradeoff. No perfect memory exists. You can have lots of fast

- Sorin, W. V. (1998). Optical reflectometry for component characterization.
In D. Derickson (Ed.), *Fiber optic test and measurement*.
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