Introduction to Information Technology

CSC109

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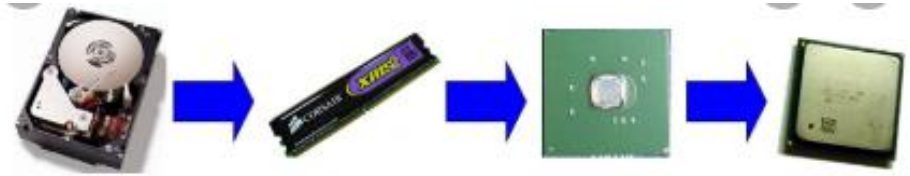
By: Rajiv Raman Parajuli

2.3.1 Cache Memory

- It is a storage buffer that stores the data used more often, temporarily and make them available to CPU at fast rate
- It designed to speedup the processor



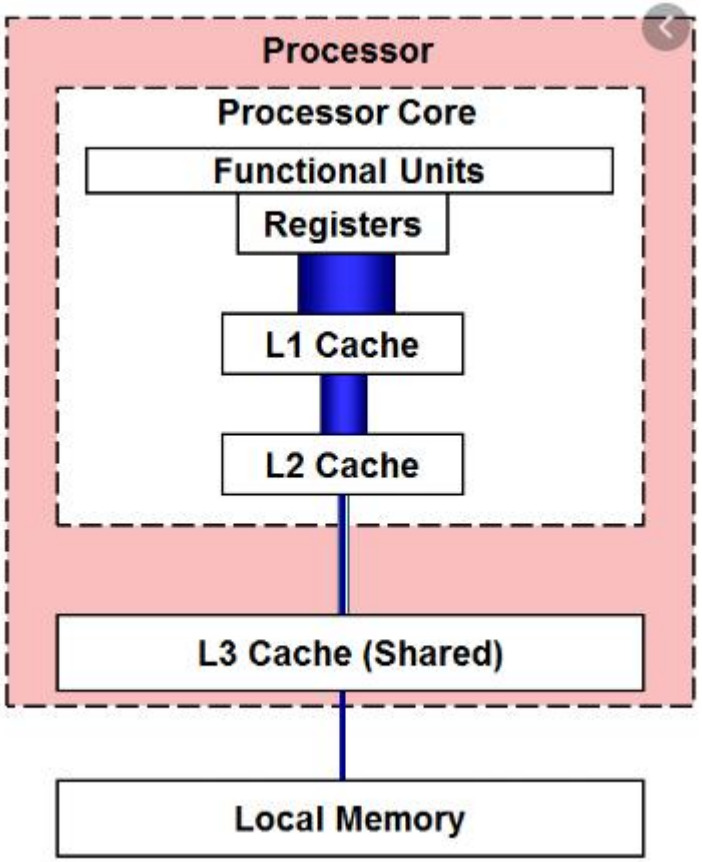
- During processing, CPU first checks cache for data, if not then CPU looks in the RAM for the data.
- No System Bus for accessing the Cache
- Costly

2.3.1 Cache Memory Cont...

- CPU has a built-in Level 1 (L1) cache and Level2 (L2) cache
- Separate cache chip on the motherboard Level 3 (L3) cache.

-- Intel Core i7

- L1 256 KB
- L2 6MB
- L3 12MB



Interesting Facts

- The First Celeron CPU had no Caching, however it performed almost as fast as the PII with Cache.
- Some Microprocessor couldnt cache more than first 64MB RAM. a rumor was spread that windows 98 could only use up to 64MB of RAM, However in reality it supports upto 2GG
  - In real adding more than 64MB of RAM decreased performance.
- Some motherboards ship with fake cache memory.
  - To sale cheaper non cache motherboards

2.3.2 Primary Memory

- Main memory of computer
- Used to store data and instructions
- Semiconductor memory.

Two Kinds

- RAM & ROM
- RAM *stores data and instructions during the execution* of instructions-→ CPU accesses the data and the instructions from RAM
- The input data that is entered using the input unit is stored in RAM
- output data generated after processing is stored in RAM before being sent to the output device.

2.3. Secondary Memory

- Stores data and instructions permanently
- Non Volatile Memory
- Provides backup storage
- High storage capacity
- Comparatively Cheaper
- Takes longer time to access the data and instructions
- Hard disk, CD, Floppy disk