

CS305

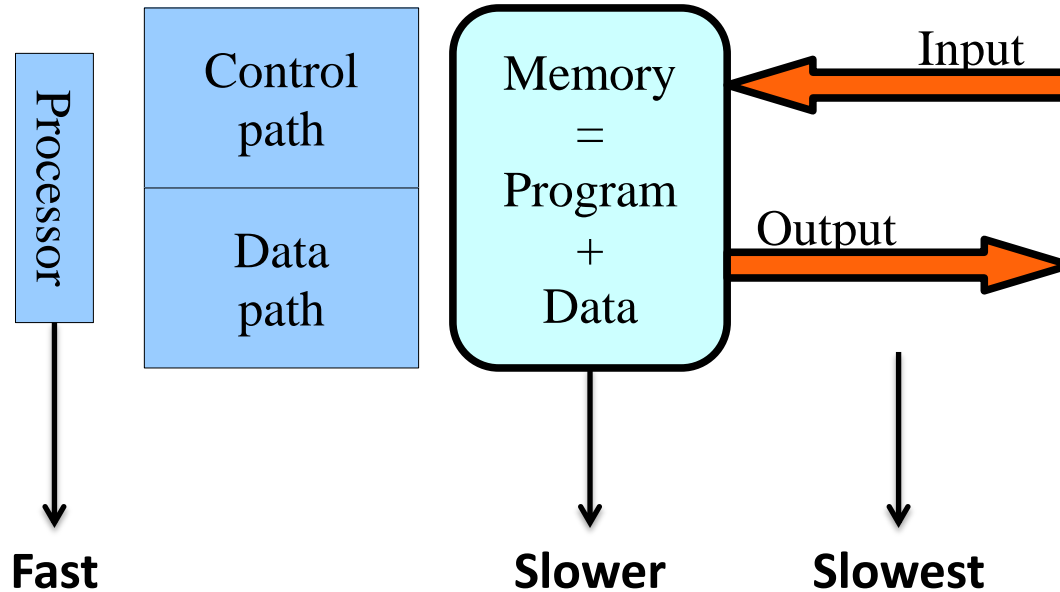
Computer Architecture

Input/Output Systems: An Introduction

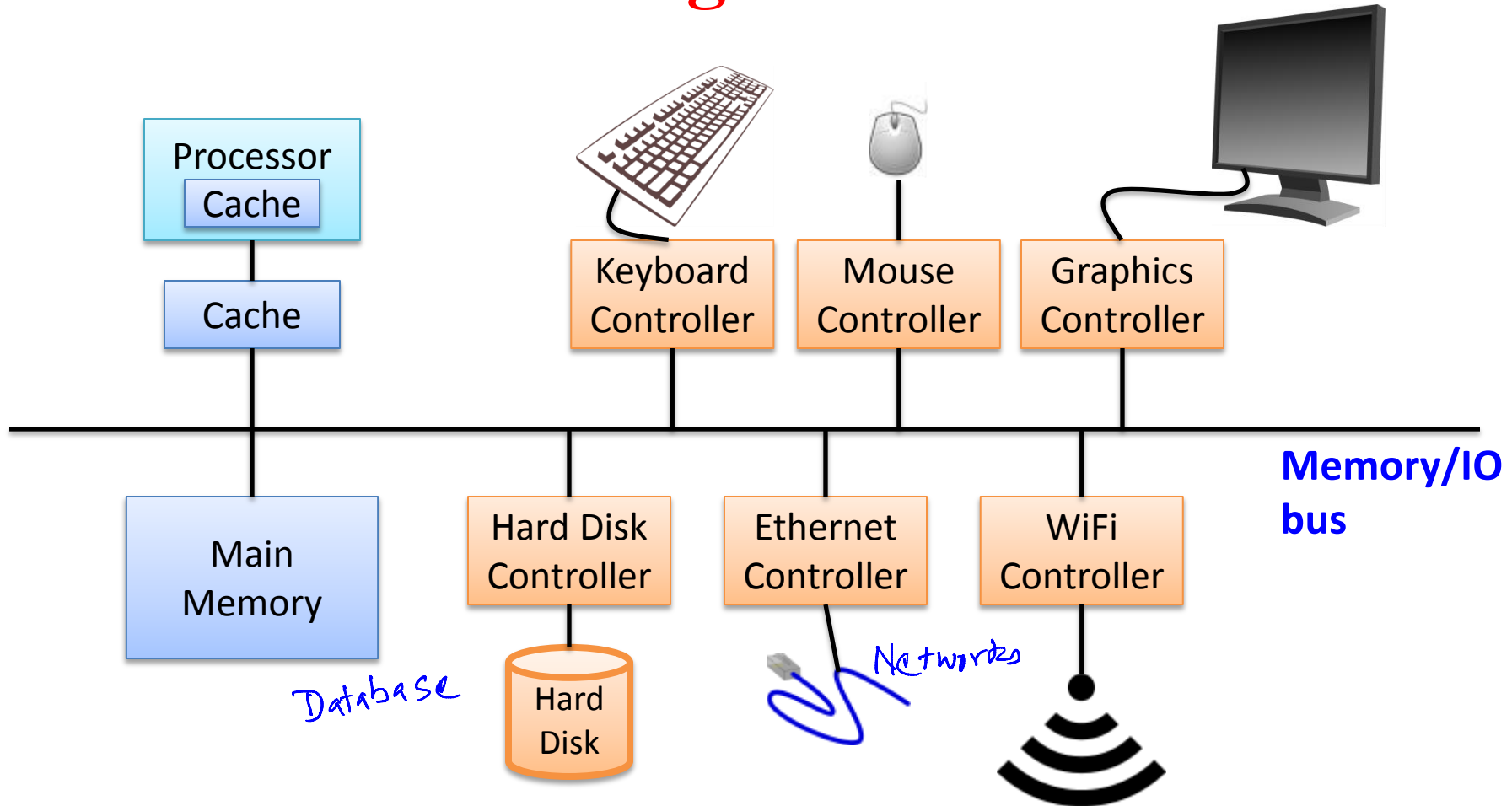
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Recall: Von Neumann Architecture



Connecting I/O Devices



IO Performance Metrics

- Latency sensitive:
 - Examples: keyboard, mouse
 - Any device with which user interacts directly
- Throughput sensitive:
 - Hard disk, network, graphics
 - Large number of small transactions (e.g. web proxy)
 - Large transactions (e.g. graphics)

Topics in IO Systems

- Magnetic hard disk technology
- RAID: Redundant Array of Inexpensive Disks
- Hamming Codes
- Buses
 - Bus interfacing
 - Bus protocols
 - Bus arbitration