

CSMC 412

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Set 5

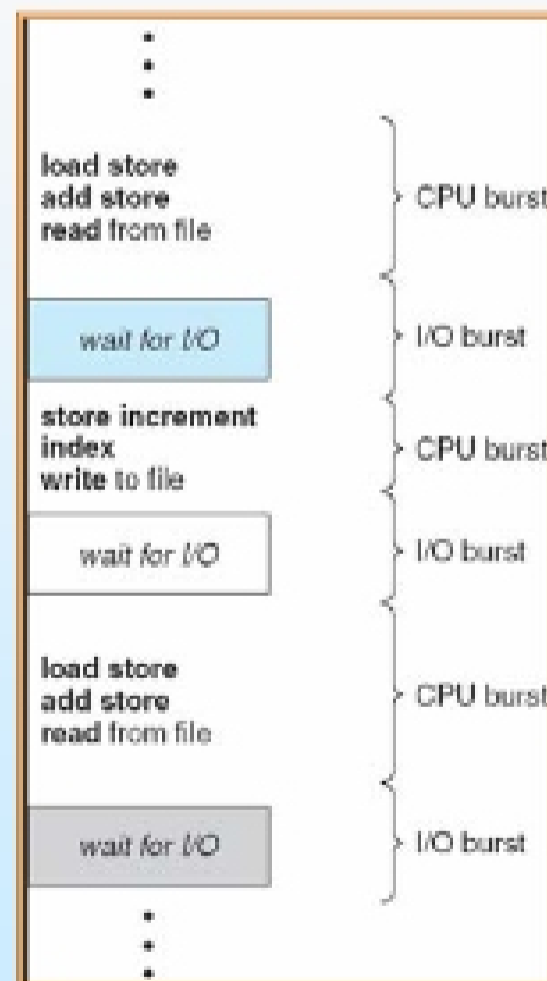
CPU Scheduling

- Basic Concepts
- Scheduling Criteria
- Scheduling Algorithms
- Multiple-Processor Scheduling
- Real-Time Scheduling
- Thread Scheduling
- Operating Systems Examples
- Java Thread Scheduling
- Algorithm Evaluation

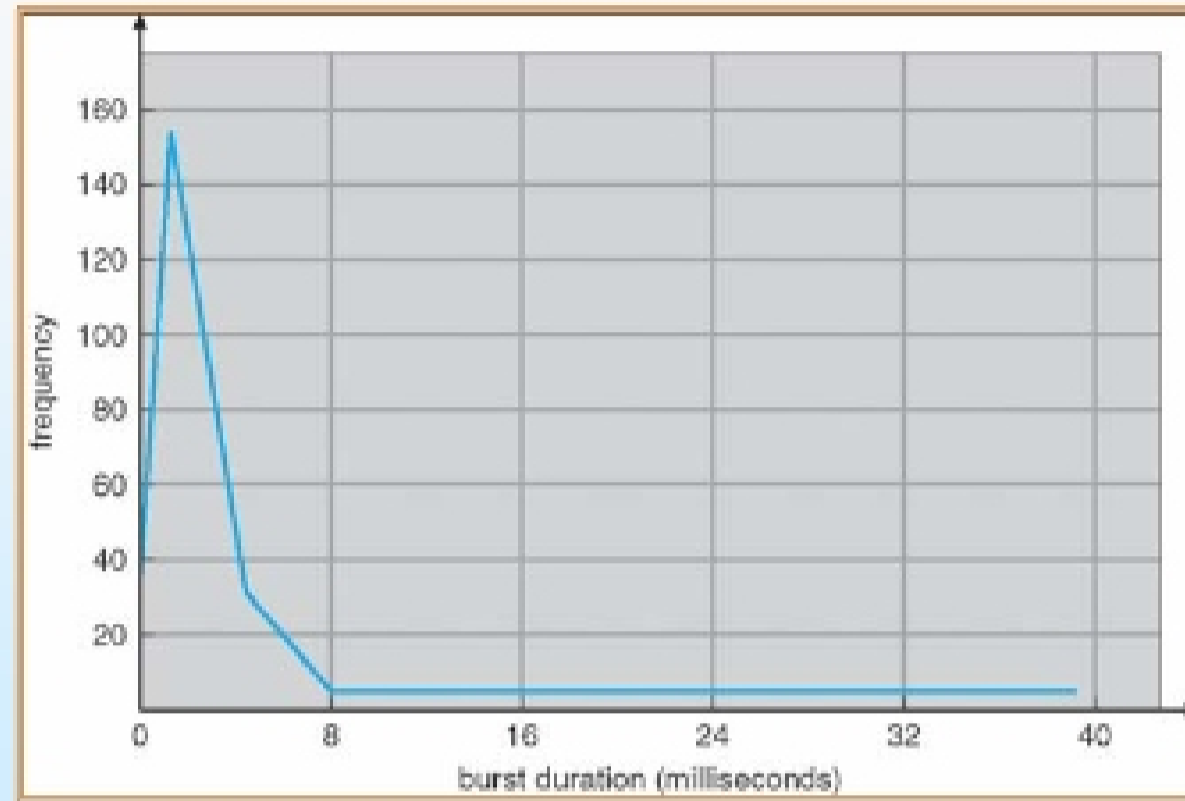
Basic Concepts

- Maximum CPU utilization obtained with multiprogramming
- CPU-I/O Burst Cycle – Process execution consists of a cycle of CPU execution and I/O wait
- CPU burst distribution

Alternating Sequence of CPU And I/O Bursts



Histogram of CPU-burst Times



CPU Scheduler

- Selects from among the processes in memory that are ready to execute, and allocates the CPU to one of them
- CPU scheduling decisions may take place when a process:
 1. Switches from running to waiting state
 2. Switches from running to ready state
 3. Switches from waiting to ready
 4. Terminates
- Scheduling under 1 and 4 is *nonpreemptive*
- All other scheduling is *preemptive*