Faculty of Computer Science & Engineering

Operating Systems

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Lab 7 - Scheduling

Objective

- Understand how scheduling algorithms work.
- Know how to simulate schedulers.

Scheduling definition?

- Scheduling is the method by which threads, processes, or data flows are given accessed to system resources (processors, memory, I/O devices, etc.)
- In Operating System, scheduling is done by a scheduler.
- Schedulers often try to
  - Maximize resource utilization
  - Minimize response time
  - Maximize throughput
  - Ensure fairness

Scheduling definition?

- Operating system may feature up to three distinct scheduler types:
  - Long-term scheduler
  - Mid-term scheduler
  - Short-term scheduler
- Remember those terms?

Short-term scheduler

- To decide which of the ready, in-memory processes is to be executed.
- Two types of short-term scheduler:
  - Preemptive scheduler: it is capable of forcibly moving running processes from processor when it decides to allocate that processor to another process.
  - Non-preemptive scheduler: scheduler cannot remove processes from processors.
- How about Dispatcher?

Short-term scheduler

- Scheduling algorithms
  - First Come First Serve (FCFS)
  - Shortest Job First (SJF)
  - Shortest Remain Time First (SRMF)

End

Thanks!