CST 334: Operating Systems

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# OSTEP Chapter 8

**Purpose**. So far we have looked at the basics of scheduling, but haven't seen a scheduling algorithm that is like a real operating system scheduler. A real scheduler can handle processes arriving over time, doesn't know how long processes will run, and adapts to changing process behavior.

**Instructions**. Read OSTEP chapter 8 (MLFQ) and answer the following questions by downloading and editing [chap8.txt](https://drive.google.com/file/d/12lwZo07KoU4MtPrXyHE8WiR69GNpQFyV/view?usp=sharing).

1. What assumptions does MLFQ make about jobs?
   1. the running time of jobs is known when they start
   2. jobs start at the same time
   3. once a job starts, it will get the CPU until it's complete
   4. none of these
2. Which kind of job tends to get highest priority with MLFQ?
   1. CPU-bound processes
   2. mixed processes
   3. I/O bound processes
3. What is the problem with performing priority boosts too frequently?
   1. CPU-bound jobs get higher priority than desired
   2. I/O-bound jobs get higher priority than desired
4. In Fig. 8.2 of OSTEP, how is the priority of the job changing over time?
   1. it's increasing
   2. it's decreasing
   3. it's staying the same
5. In Fig. 8.3 of OSTEP, how many jobs are shown?
   1. 1
   2. 2
   3. 5
6. In Fig. 8.4 of OSTEP, the gray job is:
   1. I/O intensive
   2. CPU intensive
   3. neither
7. In MFLQ, the length of time-slices on higher priority queues tends to be
   1. shorter than on lower-priority queues
   2. longer than on lower-priority queues
8. On the left of Fig. 8.5 of MLFQ, the black job
   1. has finished
   2. is waiting to be scheduled
9. (Y/N) Do priority boosts help with the problem of jobs that seek to "game the system"?
10. (T/F) If MLFQ determines a job is I/O bound, the job will be treated as I/O bound until it terminates.

**Submitting**. Submit your edited chap8.txt on iLearn.

**Grading**. Each problem is worth 10 points.