

# CSC 369 Worksheet 5 Solution

August 18, 2020

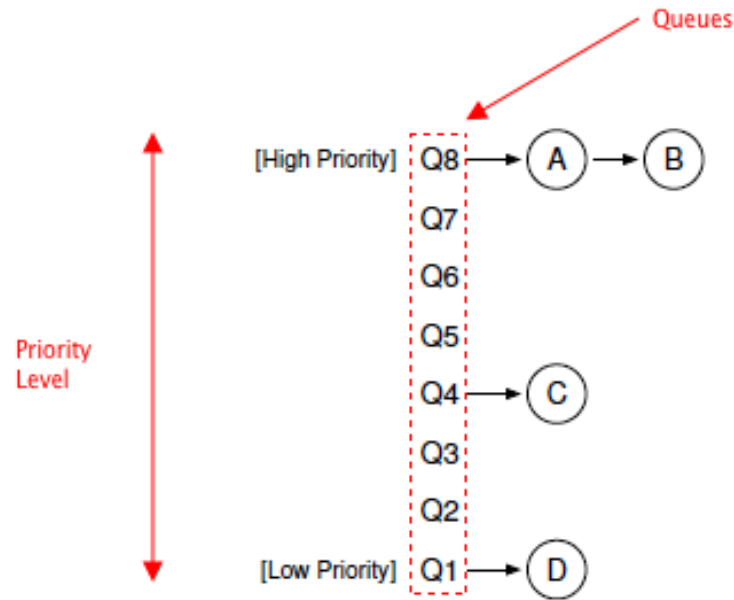
## 1. Notes

- **Multi-level Feedback Queue (MLFQ):**

- Is one of the most well-known approaches to scheduling
- Does two things:
  - a) Optimizes turnaround time
  - b) Minimizes response time
- Uses **priority level** and **Queues** to achieve it's goal

- **MLFQ Basic Rules:**

- Jobs on same queue  $\rightarrow$  Same priority
- **Rule 1:** If  $\text{Priority}(A) > \text{Priority}(B)$ , A runs (B doesn't)
- **Rule 2:** If  $\text{Priority}(A) = \text{Priority}(B)$ , A & B run in RR



• **Attemp #1: How to Change Priority**

- **Rule 3:** When a job enters the system, it is placed at the highest priority (the topmost queue)
- **Rule 4a:** If a job uses up an entire time slice while running, its' priority is reduced (i.e. it moves down on queue).
- **Rule 4b:** If a job gives up the CPU before the time slice is up, it stays at the same priority level (e.g I/O Operation)

**Example (Shortest Running Job):**

- 1) A job *A* enters system
- 2) Job is placed on highest Queue  $Q_2$
- 3) After time-slice (e.g. 10 ms) in  $Q_2$ , *A* is placed on lower queue  $Q_1$
- 4) After time-slice in  $Q_1$ , *A* is placed in lowest priority queue  $Q_0$

