Operating Systems (Fall 2021)

BS-CS Fall 2019

Scheduling Assignment

Due Date: 11-12-21

Implement a MLFQ scheduling algorithm with following details.

Queue No.	Quantum	Algorithm	Priority
Q1	5 msec	RR	1
Q2	8 msec	RR	2
Q3		SJF	3

- Input process details of n number of processes from a file. Use appropriate data structures to save process details after reading from file. Then use appropriate data structures to implement three ready queues and time line (gantt chart).

- Implement aging to avoid starvation for which promotion policy is as below:
  - If a process' wait time is 20 sec in last queue Q3, it will be moved to Q2.
  - If process kept on waiting in Q2 for 10 sec, it will move to Q1.
- Implement promotion after every 30 seconds.

- Demonstrate execution of the input processes using MLFQ scheduling algorithms in a simulation scenario i.e. show every next stage of all ready queues and time line.

- At the end, display waiting time and turn around time for each process.

- Also display average waiting time.

All the best.