Operating System Labs Jan-May 2018

Scheduling

1. Implement multi-threaded Round Robin scheduling algorithm by creating two threads in main program. Thread one will generate one or many processes after some time slice (using random numbers for process burst time from 0 to n) and display its creation. The second thread performs the actual execution of these processes as per the Round Robin algorithm and displays the process execution sequence. You can assume any suitable time quantum.

   At last, main program will display various performance matrices for each process including completion time, turnaround time, waiting time, response time and their averages for this execution.

   For example, suppose the time quantum is 2 sec and there are five processes that arrives at same time (say t=0) with burst time(in sec): 2 6 1 3 8
   - The process will finish in the following sequence: P[1] , P[3] , P[4], P[2], P[5]
   - Turnaround time(in sec) for each process respectively: 2, 5, 12, 16, 20
   - Waiting time(in sec) for each process respectively: 0, 4, 9, 10, 12
   - Average turnaround time(in sec): 11.0
   - Average waiting time(in sec): 7.0

2. In the sequel of the above question evaluate the throughput of the system for different time slices. You can assume any suitable context switching time.