

CSCD 340

Lab 7

SPECIFICATIONS

For each scheduling algorithm determine:

- The schedule of processes
- The throughput
- The average wait time

- 1) Consider the arrival time and CPU burst time statistics, using the First-Come First-Served (FCFS) CPU scheduling algorithm, for the following six processes:

Process	Arrival Time	CPU Burst
P1	t	6
P2	t+1	2
P3	t+6	3
P4	t+9	7
P5	t+10	1
P6	t+13	5

- 2) Consider a priority-based CPU scheduler. Assume that **NO** process preemption is allowed. Let the process workload for this scheduler be as follows:

Process	Priority	Arrival Time	CPU Burst
P1	2	t	5
P2	3	t+2	3
P3	4	t+4	9
P4	1	t+6	1
P5	2	t+8	7
P6	5	t+10	3

Assume that when process P1 arrives at time t, the CPU is idle and there are no other processes in the ready queue. Assume also that larger numbers mean higher priority. For example, P3 has higher priority than P2.

- 3) Consider a priority-based CPU scheduler. Assume that process preemption **IS** allowed. Let the process workload for this scheduler be as follows:

Process	Priority	Arrival Time	CPU Burst
P1	2	t	5
P2	3	t+2	3
P3	4	t+4	9
P4	1	t+6	1
P5	2	t+8	7
P6	5	t+10	3

Assume that when process P1 arrives at time t, the CPU is idle and there are no other processes in the ready queue. Assume also that larger numbers mean higher priority. For example, P3 has higher priority than P2.

- 4) Consider the arrival time and CPU burst time statistics for the following six processes in a Shortest Job First (SJF) CPU scheduler. Assume that **NO** process preemption is allowed.

Process	Arrival Time	CPU Burst
P1	t	5
P2	t+2	3
P3	t+4	1
P4	t+6	7
P5	t+8	9
P6	t+10	5

Assume that the CPU is free at time t and starts executing the above processes.

- 5) Consider the arrival time and CPU burst time statistics for the following six processes in a Shortest Job First (SJF) CPU scheduler. Assume that process preemption **IS** allowed.

Process	Arrival Time	CPU Burst
P1	t	5
P2	t+2	3
P3	t+4	1
P4	t+6	7
P5	t+8	9
P6	t+10	5

Assume that the CPU is free at time t and starts executing the above processes.

- 6) Let six processes P1, P2, P3, P4, P5 and P6 have the following arrival times and CPU bursts, in a Round Robin CPU scheduler with a time quantum of 2 units:

Process	Arrival Time	CPU Burst
P1	t	8
P2	t+3	1
P3	t+6	3
P4	t+8	5
P5	t+12	6
P6	t+15	3

Assume that no other activity is present when process P1 arrives at time t.

TURN IN

A single PDF containing your answers for each scheduling algorithm

NOTE: I don't care if you type it or hand write it. The PDF needs to be less than 1 MB if you hand write it and scan it. You will want to show your work in the PDF. If you just submit answers without work, and the answers are wrong, then you will receive 0 points for that scheduling algorithm.

Name your PDF – your last name first letter of your first name lab7.pdf (Example: steinerslab7.pdf)