

Operating Systems

COEN-283

Assignment 1- Processes and Threads

Make sure to follow assignment guidelines posted on Piazza

1. (20) Can a process ever go from Ready state to Block state? Can a process ever go from Blocked state to running state? Discuss your answer with reasoning.
2. (10) What is the difference between user threads and systems threads?
3. (20) Solve the following using Shortest Job First Scheduling algorithm and find the average waiting time.

	Arrival Time	Burst Time
P1	0	7
P2	2	4
P3	4	1
P4	5	4

CPU: P1@0,

Programming Questions

1. (50) Implement a program for SJF(non-preemptive) scheduling. Given n processes with their burst times and Arrival Time, the task is to find average waiting time and average turn around time and completion time using SJF scheduling algorithm.
 - Completion Time: Time at which process completes its execution.
 - Turn Around Time: Time Difference between completion time and arrival time. Turn Around Time = Completion Time – Arrival Time
 - Waiting Time: Time Difference between turn around time and burst time. Waiting Time = Turn Around Time – Burst Time