BIRZEIT UNIVERSITY

Faculty of Engineering & Technology
Department of Electrical & Computer Engineering
ENCS3390: Operating System Concepts
First Semester, 2023/2024

Programming Task 2

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Consider the following set of processes:

Process	Arrival Time	Burst Time	Comes back after	Priority
P1	0	10	2	3
P2	1	8	4	2
P3	3	14	6	3
P4	4	7	8	1
P5	6	5	3	0
P5	7	4	6	1
P7	8	6	9	2

Once each process is done processing its "Burst Time", it goes to the waiting queue, then "Comes back" to the ready queue after the time shown.
You are required to simulate the CPU schedule for a period of 200 time units.
For each of the following scheduling algorithms, your program must show the Gantt chart, average waiting time, and average turnaround time.

1- **First Come First Served.**
2- **Shortest Job First.**
3- **Shortest Remaining Time First.**
4- **Round Robin, with q = 5**
5- **Preemptive Priority Scheduling, with aging; where priority is decremented by 1 if the process remains in the ready queue for 5 time units.**
6- **Non-preemptive Priority Scheduling, with aging; where priority is decremented by 1 if the process remains in the ready queue for 5 time units.**

For this assignment, you may use any programming language of your choosing.

Hint: You should create a process that initially creates the 7 processes, and continuously updates the status of the processes, and another process that schedules those processes, and plots the results.