Assignment 3

1. Implement the non-preemptive SJF scheduling algorithm.

    Input:
    A list of processes. Each process has:
    *   Process ID (e.g., P1, P2, P3)
    *   Arrival Time (when the process enters the ready queue)
    *   Burst Time (the total CPU time required to execute the process)
    The list should be sorted based on arrival time
    Example Input:

    Process ID | Arrival Time | Burst Time

    --------------|----------------|------------

    P1 | 0 | 8

    P2 | 1 | 4

    P3 | 2 | 9

    P4 | 3 | 5

    Output:
    A Gantt chart showing the execution order of processes.
    Average Waiting Time
    Average Turnaround Time

    Gantt Chart:

    P1 (0-8) | P2 (8-12) | P4 (12-17) | P3 (17-26)

    Average Waiting Time: $(0 + 7 + 15 + 9) / 4 = 7.75$

    Average Turnaround Time: $(8 + 11 + 24 + 14) / 4 = 14.25$

2. Implement the Round Robin scheduling algorithm.

Input:

List of processes with Process ID, Arrival Time, Burst Time.

Time Quantum (the amount of time each process gets to run before being preempted).

Output:

Gantt chart.

Average waiting time.

Average turnaround time.