Take-Home Software Assignment: CPU Scheduling Algorithm Implementation

Submission Deadline: on or before 01.06.2024

Instructions:

In this assignment, you are tasked with implementing 3 CPU scheduling algorithms: FCFS, SJF, and RR. You are provided with a set of processes along with their arrival times and burst times. Your task is to simulate the execution of these processes using each of the mentioned scheduling algorithms and analyze their performance.

Tasks:

- Implement the FCFS scheduling algorithm.
- Implement the SJF scheduling algorithm.
- Implement the RR scheduling algorithm.
- Simulate the execution of the provided processes using each scheduling algorithm.
- Compute and compare the average waiting time for each algorithm.
- Write a brief analysis comparing the performance of the three scheduling algorithms based on the average waiting time.

Data:

Process	Arrival Time	Burst Time
P1	0	10
P2	6	8
P3	7	4
P4	9	5

Submission:

Submit your implementation along with the analysis in a single document or file. Your submission should include:

- Source code of the implementation.
- Output demonstrating the execution of processes using each algorithm.
- Analysis comparing the performance of the algorithms based on average waiting time.

Note: Feel free to use any programming language of your choice, but C is recommended. You should include comments in your code properly. Additionally, you may include any additional features or optimizations to enhance your implementation (For additional marks).