Roll no. 32

Operating System (CT-353)

Lab no 02

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1) FCFS CPU Scheduling Algorithm

```
Enter the number of processes -- 2

Enter Burst Time for Process 0 -- 3

Enter Burst Time for Process 1 -- 5
    PROCESS BURST TIME WAITING TIME TURNAROUND TIME

P0 3 0 3
    P1 5 3 8

Average Waiting Time -- 1.500000

Average Turnaround Time --5.500000

Process exited after 38.9 seconds with return value 0

Press any key to continue . . . _
```

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2) SJF CPU Scheduling Algorithm

```
C:\Users\admin\Downloads\102.exe
Enter the number of processes -- 3
Enter Burst Time for Process 0 -- 2
Enter Burst Time for Process 1 -- 2
Enter Burst Time for Process 2 -- 6
        PROCESS
                       BURST TIME
                                       WAITING TIME
                                                     TURNAROUND TIME
        PØ
                       2
                                                       2
                        2
                                                       4
        P1
                                        2
        P2
                                        4
                                                       10
Average Waiting Time --2.000000
Average Turnaround Time -- 5.333333
Process exited after 36.69 seconds with return value 0
Press any key to continue \dots
```

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3) ROUND ROBIN CPU Scheduling Algorithm

```
C:\Users\admin\Downloads\103.exe
PΝ
                BT
                     WΤ
                                TAT
 1
                         0
                                          1
 2
                8
                         3
                                         11
 3
                         4
Average waiting time = 2.33333
Average turn around time = 6
Process exited after 1.715 seconds with return value 0
Press any key to continue \dots
```

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4) PRIORITY CPU Scheduling Algorithm

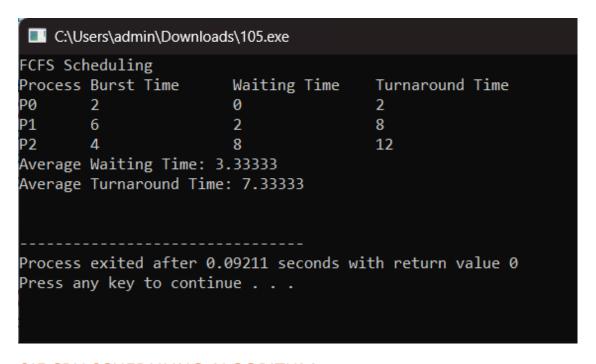
```
C:\Users\admin\Downloads\104.exe
Process_no
                Start_time
                                 Complete_time
                                                 Turn_Around_Time
                                                                          Waiting_Time
                                10
                                                                          6
                10
                                                 13
                17
                                 21
                                                 16
                                                                          12
Average waiting time is : 5.2
average turnaround time : 9.2
Process exited after 1.568 seconds with return value 0
Press any key to continue . . .
```

5) Execute all scheduling algorithms on following data and find out the Average Waiting Time and Average Turnaround Time of all

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scheduling algorithms and discuss your results. (Quantum Value is 3)

FCFS CPU SCHEDULING ALGORITHM



SJF CPU SCHEDULING ALGORITHM

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```
C:\Users\admin\Downloads\105.exe
SJF Scheduling
                        Waiting Time
                                        Turnaround Time
Process Burst Time
Ρ0
P2
        4
                        2
                                         6
P1
                                         12
Average Waiting Time: 2.66667
Average Turnaround Time: 6.66667
Process exited after 1.969 seconds with return value 0
Press any key to continue . . .
```

PRIORITY CPU SCHEDULING ALGORITHM

```
C:\Users\admin\Downloads\105.exe

Priority Scheduling

Process Burst Time Priority Waiting Time Turnaround Time

P1 6 1 0 6

P2 4 2 6 10

P0 2 3 10 12

Average Waiting Time: 5.33333

Average Turnaround Time: 9.33333

Process exited after 2.005 seconds with return value 0

Press any key to continue . . .
```

ROUND ROBIN CPU SCHEDULING ALGORITHM

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```
C:\Users\admin\Downloads\105.exe
Round Robin Scheduling
Process Burst Time
                    Waiting Time
                                        Turnaround Time
P0
P1
                       5
        6
                                        11
P2
        4
                        8
                                        12
Average Waiting Time: 4.33333
Average Turnaround Time: 8.33333
Process exited after 2.121 seconds with return value 0
Press any key to continue . . .
```

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CPU scheduling algorithms prioritize processes in distinct ways. **First-Come, First-Served** (**FCFS**) executes tasks based on arrival order, potentially delaying lengthy ones. **Shortest Job First (SJF)** minimizes average waiting and turnaround times by prioritizing shorter tasks. **Priority Scheduling** focuses on tasks with higher importance, postponing those with lower priority. **Round Robin** ensures fairness via time slicing but may increase waiting time for short processes. Each method balances fairness, efficiency, and responsiveness differently.