

SSN COLLEGE OF ENGINEERING, KALAVAKKAM
(An Autonomous Institution, Affiliated to Anna University, Chennai)

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

UCS1411 - OPERATING SYSTEMS LAB

Lab Exercise 4: Implementation of CPU Scheduling Policies: Priority and Round Robin

Aim:

Develop a menu driven C program to implement the CPU Scheduling Algorithms

Priority (Non-Preemptive and Preemptive) and Round Robin

Algorithm:

1. Read the following
 - a. Number of processes
 - b. Process IDs
 - c. Arrival time for each process
 - d. Burst Time for each process
2. Design a menu with Priority and Round Robin options
3. Upon selection of menu option apply the corresponding algorithm.
4. Compute the Turnaround Time, Average waiting Time for each of the algorithm.
5. Tabularize the results.
6. Display the Gantt Chart.

Sample Input & Output:

CPU SCHEDULING ALGORITHMS

1. ROUND ROBIN
2. PRIORITY
3. EXIT

Enter your option: 1

ROUND ROBIN CPU SCHEDULER

Number of Processes: 5

Process ID: P1

Arrival Time: 0

Burst Time: 4

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Process ID: P5

Arrival Time: 6

Burst Time: 3

Output:

| Process ID | Arrival Time | Burst Time | Turnaround Time | Waiting Time |
|------------|--------------|------------|-----------------|--------------|
| P1 | 0 | 4 | *** | *** |
| *** | *** | *** | *** | *** |
| *** | | | | |
| *** | | | | |
| Average | | | *** | *** |

Want to Continue (Y/N): Y

CPU SCHEDULING ALGORITHMS

1. ROUND ROBIN

2. PRIORITY

3. EXIT

Enter your option: 2

PRIORITY CPU SCHEDULER

a. Non preemptive PRIORITY

b. Pre emptive PRIORITY

Enter your option: a

Number of Processes: 5

Process ID: P1

Arrival Time: 0

Burst Time: 4

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Process ID: P5

Arrival Time: 6

Burst Time: 3

Output:

| Process ID | Arrival Time | Burst Time | Turnaround Time | Waiting Time |
|------------|--------------|------------|-----------------|--------------|
| *** | *** | *** | *** | *** |
| *** | *** | *** | *** | *** |
| *** | | | | |
| *** | | | | |
| Average | | | *** | *** |