**Instructions for EXP 3**

**Implementation of Basic Process Management Algorithms – Non Preemptive ( FCFS , SJF, priority)**

**FCFS**

Implementation:

1- Input the processes along with their burst time (bt).

Two arrays can be taken, One array for Process Id, 2nd array for Corresponding Burst times

2- Find waiting time (wt) for all processes.

3rd Array needed

3- As first process that comes need not to wait so waiting time for process 1 will be 0 i.e. wt[0] = 0.

4- Find waiting time for all other processes i.e. for process i ->

wt[i] = bt[i-1] + wt[i-1] .

**Waiting Time = Turn Around Time - Burst Time  or Sum of times spent waiting in Ready queue**

5- Find turnaround time = waiting\_time + burst\_time for all processes.

**Turnaround Time = Completion Time - Arrival Time**

6- Find average waiting time = total\_waiting\_time / no\_of\_processes.

7- Similarly, find average turnaround time = total\_turn\_around\_time / no\_of\_processes.

**Non-Preemptive Shortest Job First Scheduling**

Here is an example

|  |  |  |  |
| --- | --- | --- | --- |
| Processes Id | Burst Time | Waiting Time | Turn Around Time |
| 4 | 3 | 0 | 3 |
| 1 | 6 | 3 | 9 |
| 3 | 7 | 9 | 16 |
| 2 | 8 | 16 | 25 |

Average waiting time = 7

Average turnaround time = 13

T.A.T= waiting time + burst time

Algorithm:

1. Sort all the process according to the Burst time, so the shortest one can be executed first, i.e. Sort the process id array and burst time array both according to burst time.
2. Once sorted, Similar to FCFS.
3. Steps used in FCFS can be used for average waiting time and average turnaround time

**Priority CPU Scheduling**

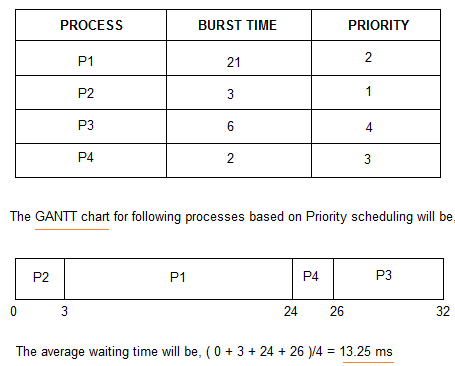
**Implementation :**

1- First input the processes with their burst time and priority.

2- Sort the processes, burst time and priority according to the priority.

3- Now simply apply FCFS algorithm.

4- You can use 3 arrays i.e. for process no, burst time, priority approach or structure can also be used , with process no, burst time, priority as members of the structure.

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