

SCHEDULING

Given the list of processes, their CPU burst times, arrival times and priorities. Implement FCFS, SJF, Priority and Round robin process scheduling algorithms on the processes with preemption. For each of the scheduling policies, compute and print current task in each time step, the average waiting time and average turnaround time.

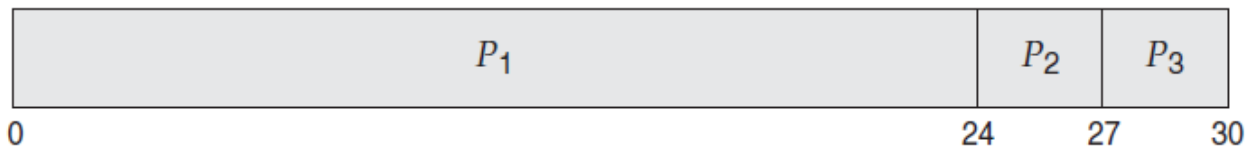
Waiting time: Processes need to wait in the process queue before execution starts and in execution while get preempted.

Turnaround time: Time elapsed by each process to get completely served. (Difference between submission time and completion time).

1. FCFS Scheduling:

Here the processes are arranged in order of their increasing arrival time. Check for incoming processes after the completion of the current process.

<u>Process</u>	<u>Burst Time</u>
P_1	24
P_2	3
P_3	3



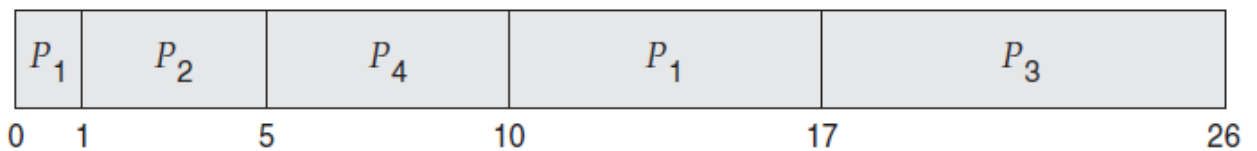
Sample Input and Output should be:

```
Select Number of Process:
3
Process Time:
27 3 3
Id   Time   WaitT   StartT   EndT
-----
1    27     0       0        27
2     3     27      27       30
3     3     30      30       33
```

2. SJF Scheduling:

Check for incoming processes after every time step (1 ms).

<u>Process</u>	<u>Arrival Time</u>	<u>Burst Time</u>
P_1	0	8
P_2	1	4
P_3	2	9
P_4	3	5

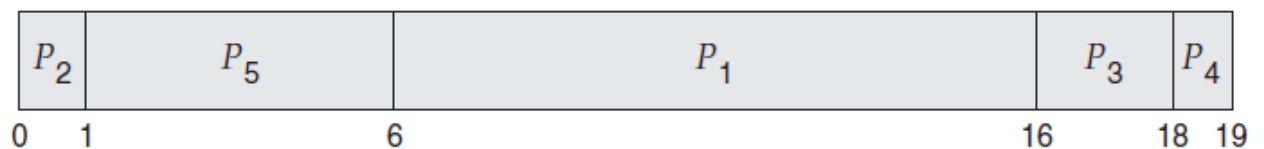


You have to use the Same Skeleton Code given for FCFS Scheduling but you have to sort the process according to its Time .

3. Priority Scheduling:

Check for incoming processes after every time step (1 ms).

<u>Process</u>	<u>Burst Time</u>	<u>Priority</u>
P_1	10	3
P_2	1	1
P_3	2	4
P_4	1	5
P_5	5	2

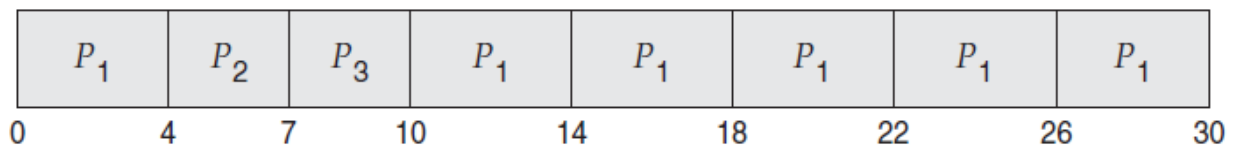


4. Round-Robin Scheduling:

Time Quantum = 4 ms

Check for incoming processes after every time quantum (4 ms).

<u>Process</u>	<u>Burst Time</u>
P_1	24
P_2	3
P_3	3



Links:

- 1) <http://javahungry.blogspot.com/2013/11/shortest-remaining-time-first-srt-preemptive-non-preemptive-sjf-scheduling-algorithm-with-example-java-program-code.html>
- 2) <http://campuscoke.blogspot.com/2015/01/shortest-remaining-time-first-srtf-cpu.html>
- 3) <http://operatingsystemquestionbank.blogspot.com/2012/11/shortest-job-first-non-preemptive-sjf.html>