COEN383
Advanced Operating System
Project 2 Report
Group No.6
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The following is the final statistical output obtained from the 6 algorithms implemented. The average of the 5 runs of all algorithms is as follows:

First Come First Serve:
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Average Response Time: 42.3
Average Wait Time: 42.6
Average Turn-Around Time:48.9
Average throughput:16.0

Shortest Job First Non-Preemptive:
Average Response Time: 7.9
Average Wait Time : 8.4
Average Turn Around Time :11.9
Average throughput :25.0

Shortest Remaining Time First Preemptive:
Average Response Time: 5.0
Average Wait Time : 6.1
Average Turn Around Time :9.5
Average throughput :25.0

Round Robbin Preemptive:
Average Response Time: 31.6
Average Wait Time : 75.6
Average Turn Around Time :81.3
Average throughput :24.0

Highest Priority First Preemptive:
Average Response Time : 7.4
Average Wait Time : 9.6
Average Turn Around Time :15.1
Average throughput :45.0

Highest Priority First Non-Preemptive:
Average Response Time : 11.8

Average Wait Time: 12.0
Average Turn-Around Time:17.0
Average throughput:18.0

The following observations are made on the basis of the result:

1. First Come First Serve Policy:

Response time, Wait time and turnaround time all are very high due to which the throughput has decreased as newer processes have to wait for the older processes to execute and may starve for the CPU resource.

2. Shortest Job First Non Preemptive:

In this case, the response time has decreased a lot but due to this policy, there can be cases where processes that require larger execution time will starve for the resource.

3. Shortest Remaining time to Completion Preemptive:

For this case, jobs that require short time for completion get executed first. This also includes jobs that have a short execution time. The results obtained for these particular observations are somewhat similar to the results of the Shortest Job First.

4. Round Robin Preemptive:

For this policy, all the processes get equal time slice for execution. Due to this all processes in the queue get CPU for a limited time and completion of long processes does not take place after CPU allocation in a single turn. This majorly increases the turn around time of all the processes and the response time and wait time also increases in all the processes resulting in less throughput than the above algorithms.

5. Highest Priority First Preemptive:

This is the only policy as per the observations above while it has very less response time, wait time and turn around time as preemptiveness allows newer processes with high priority to run quickly. Among all the observations, this policy has the best throughput. Although, it can happen that processes with less priority may remain starved.

6. Highest Priority First Non Preemptive:

This policy provides less response to processes in queue of higher priority and can cause starvation for processes with low priority. Also, as per the observation, the thoughput of his policy is the lowest.

Conclusion:

Considering all the observations, it is fair to decide that the Highest Priority First Preemptive policy is the best policy as it provides us with the maximum throughput.