**Operating Systems Homework-2**

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**1.Compute the response time and turnaround time when running five jobs of length 200 with the FIFO & SJF schedulers.**

**Ans:**

**FIFO: python./scheduler.py -p FIFO -l 200,200,200,200,200 -c**

A screenshot of a computer

Description automatically generated

**SJF: python./scheduler.py -p SJF -l 200,200,200,200,200 -c**

A screenshot of a computer

Description automatically generated with medium confidence

**2.** **Now do the same but with jobs of different lengths: 100, 200, and 300.**

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**3. Now do the same, but also with the RR scheduler and a time-slice of 1.**

**Ans: python./scheduler.py -p RR -l 200,200,200,200,200 -q 1 -c**

A computer screen capture

Description automatically generated with medium confidence

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**4.For what types of workloads does SJF deliver the same turnaround times as FIFO?**

**Ans:** SJF- Shortest Job First always delivers the same turnaround time as FIFO-First in First Out when all the jobs are of the same size or the jobs which monotonically increase in size.

**5. For what types of workloads and quantum lengths does SJF deliver the same response times as RR?**

**Ans:**  SJF- Shortest Job First always delivers the same turnaround time as RR-Round Robin when all the jobs are of the same size or the jobs which monotonically increase in size. For both the scenarios the quantum length of the RR algorithm should be greater than the job whose length is maximum

**6.What happens to response time with SJF as job lengths increase? Can you use the simulator to demonstrate the trend?**

**Ans:** As the job lengths increases the response time with SJF also Increases. The job length and response time have linear relation which results the same.

**Demonstration:**

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**7. What happens to response time with RR as quantum lengths increase? Can you write an equation that gives the worst-case response time, given N jobs?**

**Ans:** The response time increases with RR as the quantum length increases.

If N is the No: of jobs

If q be the quantum length,

Then the worst case response time is (N-1)q/N.

**Demonstration:**

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