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CSCI 470

Chapter 7

1. 3 jobs at 200 for FIFO and SJF
   1. FIFO:
      1. Response: 1.67
      2. Turnaround: 5.67
   2. SJF:
      1. Response: 1.67
      2. Turnaround: 5.67
      3. I got the exact same times when running the SJF command.
2. Now, more calculations (python tester.py -p FIFO -l 100,200,300):
   1. FIFO:
      1. Response: 133.33
      2. Turnaround: 333.33
   2. SJF:
      1. Response: 133.33
      2. Turnaround: 333.33
      3. Once again, SJF performed exactly the same. This is because the list of numbers input is already in SJF, meaning it did it exactly the same as FIFO. If we were to change the order, such as 200,100,300, we would then see a difference.
3. Now, for RR:
   1. RR:
      1. Response: 1.0
      2. Turnaround: 465.67
4. SJF and FIFO would have the same turnaround times only if the jobs were already in ascending order. Then, they would perform exactly the same. This case, or the case that all the jobs had the exact same length so order was irrelevant. Otherwise, the SJF would re-order things to do a shorter job first, changing the turnaround time (shortening it) when compared to FIFO.
5. Again, if the jobs are the same length, and the RR quantum length is set to that length (the length of the job), then the RR and SJF would produce the same response times. I believe this is the only case where this would occur though. If the quantum length of the RR differed from the length of a process, then SJF would differ in response times. Or, if jobs had different lengths, the quantum length would once again create issues because I it is static, and would differ from SJF.
6. If there’s multiple larger jobs, SJF will do the shortest first and the larger ones later, reducing the response time slightly, but it will still be large (much larger than RR would be in comparison). If there’s a few small jobs, couple medium jobs, and larger jobs, the SJF will most likely have much better response times than the FIFO, having a lower average in response times. In general, the larger the jobs get, the larger the response times will be. SJF will mitigate this, but there’s only so much it can do to reduce response times.
7. As quantum length increases for RR, the response time is going to directly increase based off this. Large quantum lengths mean larger response times. I believe worst case scenario would be the quantum length is the length of the jobs themselves, giving it the max response times.