CS300   
Computer Systems HW 3

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## Instructions:

1. Please name your file as CS300systems\_yourusername\_hw3.
2. All questions must be answered on an INDIVIDUAL basis. If your answer is inspired by the discussion with other students, you need mention their names in your acknowledgement section.
3. State clearly all your assumptions if anything is ambiguous. Always ask if you have any questions.
4. Please correctly cite and list any (online) references. Please pay attention to the academic conduct code, particularly the definition of plagiarism.
5. Please submit your homework through blackboard on time.
6. Thank You!

## Questions:

1. CPU Scheduling :
   * What the pros and cons of each of the following scheduling algorithms: FCFS, RR, and SJF?
2. Memory Management:
   * Compare the continuous allocation scheme with the paging scheme in terms of
     + Supporting dynamic allocation
     + Supporting memory sharing
     + Having external fragmentation

## *Answer:*

1. **CPU Scheduling:**
   1. *FCFS:*
      1. Pros:
         1. Very simple and basic scheduling algorithm.
         2. No starvation
         3. Every process will get an opportunity to execute on the CPU.
      2. Cons:
         1. Short process may suffer long waiting time if it arrives shortly after very long process.
         2. First process will get the CPU first, other processes can get CPU only after the current process has completed its execution.
         3. Average Turnaround/Response Time: not ideal
   2. *RR:*
      1. Pros:
         1. Every process gets an equal share of the CPU.
         2. No starvation.
      2. Cons:
         1. Set the quantum too large: same as FCFS
         2. Set the quantum to small: increase the overhead and lowers the CPU efficiency.
         3. Preemptive.
   3. *SJF:*
      1. Pros:
         1. Minimize waiting time.
         2. Shortest job are favored.
      2. Cons:
         1. Long process may suffer and starve if shorter processes keep coming.
         2. Hard to predict execution time.
2. **Memory Management:**
   1. *The continuous allocation scheme:*
      1. Supporting dynamic allocation: No
      2. Supporting memory sharing: No
      3. Having external fragmentation: Yes
   2. *The paging scheme:*
      1. Supporting dynamic allocation: Yes
      2. Supporting memory sharing: Yes
      3. Having external fragmentation: No

Reference:

* MET CS 300 O1 Introduction to software development slides and live class

## Feedback:

1. How long do you take to complete this homework? Is it too hard, too easy or OK?

I took me 40 mins, Its ok

1. How well do you understand this topic?

I understand it quite well

1. Do you have any other feedback? N/A