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Intro to OS

Lab 3

1. `*grep -R "pw" \*.sh | sort | head -n 20 | tail -n 20 > fileo*`
2. C program attached
3. **FIFO:**   
   *Avg. Turnaround Time:*   
   *Avg Response Time:*A colorful rectangles on a black background

   Description automatically generated  
   D arrives first and runs to completion. A arrives before B so is scheduled first. Then C arrives at t = 20 ms and is scheduled to run after B.  **SJF:**   
   *Avg. Turnaround Time:*   
   *Avg Response Time:*  
   A colorful rectangles on a black background

   Description automatically generated

D arrives at t = 0 with 30 ms run time. A arrives at t = 10 ms while D is running and is a shorter job, but the scheduler does not run A instead since SJF is non-preemptive. A is scheduled for next, then B arrives shortly after at t = 10 ms. B has a longer 20 ms run time so A remains scheduled before B. Then, C arrives at t = 20 ms and has a 20 ms run time so it is scheduled after B since it has arrived later and has the same run time. A, then B, then C runs after D is completed. **STCF:** A colorful rectangles on a black background

Description automatically generated  
*Avg. Turnaround Time:*   
*Avg Response Time:*  
D arrives at t = 0 with a 30 ms run time. A arrives at t = 10 ms with a 10 ms run time. Since STCF is preemptive, the scheduler begins to run A. Shortly after, B arrives at t = 10 ms with a 20 ms run time. It is scheduled to be run after D since D arrived earlier and only has 20 ms run time left. A finishes at t = 20 ms and C arrives at the same time with a 20 ms run time. Since D, B, C all have the same remaining run time and arrived in that order, they are then subsequently ran in the same order following A’s completion.  
 **RR with a time slice of 5 ms:** A colorful rectangular pattern on a black background

Description automatically generated  
*Avg. Turnaround Time:*   
*Avg Response Time:*  
D arrives at t = 0 and runs for a time slice of 5 ms. No other processes have arrived to be scheduled, so D runs for another 5 ms. Then, A arrives shortly before B arrives both at t = 10 ms. A run first since it arrived first for 5 ms, then B runs for a time slice of 5 ms. At the completion of B’s first time slice, C arrives at t = 20 ms. The process continues to schedule the processes in the order D, A, B, C until each finishes.

1. <https://github.com/nickrwu/os-labs>