Clayton Brutus
CS470
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Process Management Project
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This program uses a custom Process class to track the processes' PIDs, quantum time, burst time, etc. STL lists of this custom class is used for the queues to allow for easy iteration, and efficient modifying. The program loops continuously while reading each command and arguments of the input file and outputs each command and the status of the processes. This meets all the specifications of the project and should always run correctly given a input file of proper form.

1. The RR scheduling algorithm seems to work well for quantum sizes near the average burst times of the processes. This particular simulation program makes it difficult to compare the performance since no statistics are calculated and it always runs the same commands and time rather than running until the processes finish. It seems that the best quantum size for test1 is 9 since that is the only q that results in the running process having 6 left, 1 process in the ready queue and 1 in the wait queue at the end. It seems that the best quantum times for test2 is 4 or 10 since that is the only q that results in PID 0 running with 1 process in the wait queue waiting for an event that is not included in the test2 commands.

2. I found that it was most difficult to implement efficient and convenient data types for tracking each process and holding each process in the queues. I decided that a custom class for the processes and linked lists for the queues would be the closest to optimal solution that I could think of.

3. I found that, once I wrote a custom class for processes and wrote functions for moving the processes around, it was quite easy to manage the quantum time and decide when to move a given process between the possible states.

4. If I had the time, I would have liked to implement useful statistics to be presented at the end of the simulation. I would have also liked to allow the simulation to run until all of the processes finish so that it is easier to decide on the proper quantum time for a given set of processes and commands.

What, if anything, did you find interesting or surprising about process management that you did not know before doing this project?

5. I was not very surprised by process management in general while completing this project. After doing so many simulations by hand for homework and the exam, I expected this simulation project to be very similar to that, but done in code rather than by hand.