Lab 7 Report

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**Design Choices:**

We decided to make a priority-based scheduling system. In our application we have two distinct processors. A high priority processor that deals with programs that have priority 20 – 1 and a low priority processor that deals with programs that have priority 10-1. We divided the processor in two separate priority processor so that lower priority programs can execute sooner.

When we run the program, the user gets to choose the specific number of each processors, the total simulation time, and the number of programs per hour. We created a function that can randomly assign wait times to current programs. The only drawback with our design is that currently since it is priority based the processer waits until the IO responds instead of picking another program.

Then there is an output of the programs that run with the throughput, average wait time, average turnaround time, average response time, and processor utilization all outputted into the terminal. Then, after this is all done, it will print the above data into a CVS file. You can also search a program from it PID to check the logs of when it was idle and when it ran.

**Assumptions:**

Currently our program has three states, disabled, waiting and running. When it is disabled, the program is assumed to be terminated. When the program is waiting it is waiting to get a chance in the processer. When the program is running a random wait, time is generated but the running program still holds its place in the processor because it has the highest priority.

**Areas of Improvement:**

We want to create a system that kicks the program that is waiting out for I/O input.

We also want the program to be able to read CSV files so that when we are comparing we have controlled events. For this lab we choose randomly generated events to get a feel for how the program would work in real life scenario.

We want to create a decay system that increases priority of programs that have been in the waiting queue.