CMPE 322 – PROJECT 1

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A Brief Explanation of The Project

Here I will briefly discuss how I approached to the project and what kind of algorithm and data structures I used. There are 2 classes: Process and main. The essential part is implemented inside the "main.cpp" file whereas Process class just includes the necessary fields for a process and a constructor.

There are 2 important data structures. An arrival queue and a ready queue which are implemented as both priority queues. While arrival queue is prioritized according to arrival times, ready queue is prioritized according to priorities of the processes. In arrival queue, if there are multiple processes whose arrivals are the same, they are arranged according to their priorities and in ready queue if there are multiple processes whose priorities are the same, then they are arranged according to their arrival times.

The scheduling is performed in a while loop which iterates while both ready queue and the arrival queue is not empty. When a process comes it is popped from arrival queue and pushed to the ready queue. If it's priority is higher than the current process, then the current one is preempted and the incoming process takes place.

The turnaround time is calculated as finishing time of a process minus arrival time of the process. The waiting time is calculated as turnaround time of the process minus total execution time of the process.

The Development Platform

I developed the project in Clion IDE with gcc compiler inside the Ubuntu 18.04 OS. After I finished the project, I tested it in the command line interface using the g++ compiler and I took the correct result in the output file.

How to Run

g++ main.cpp Process.cpp -o out

./out

After execution of these commands, program will the read the files **"definition.txt"** and the given code files and the output will be written to the **"output.txt"** file. Here I assumed that definition and the code files will be in the same directory of my files. I also assumed that instruction times and the arrival times will be integer.