Team Project for Python CS 2520

Cal Poly Pomona

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Team Information

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Problem Description

The problem we chose to tackle was exploring how computer processes are completed. We began with doing work to build a simulator for a CPU task scheduler that would be able to take a list of jobs with priorities and provide their completion time. Initially we chose to replicate First Come First Serve Algorithm, Shortest Job First, Longest Job First, and Round Robin. However upon implementation, we were unable to implement a fully successful Round Robin algorithm. However in order to remedy the lack of results we would have, we also went with emulating the algorithms with a single core rather than only for multicore. By doing so we were able to expand the possibilities since they would create different outcomes even if the algorithm and the jobs were the same.

Within the CPU scheduler we created, we would need to access a list of jobs with different priorities. We had used info we learned in the course such as accessing files in order to read a text file that would contain these jobs and priorities. There will also be premade files with the program that should allow us to read them in order to simulate the jobs with priority as well. It is important that if the user decides to create their own file that they follow the original file's patterns in order to get correct results. The length of the text files are not limited and depend primarily on the user's preference, therefore the results from each algorithm on however many cores will provide different results. However, if the user is unable to consider a file of their own for whatever reason, it is possible for the program to create random data in order for users to see the results of the algorithm. There was also a desire to implement GUI to the program, although we weren't able to implement a GUI that we both felt were up to our standards.