This project was meant to simulate the CPU by using FCFS, SPN, HRRN algorithms for choosing which process to run. All these algorithms are non-preemptive and will decide which process will go next based on their criteria. For instance, FCFS will go through depending on which process came first, SPN will choose the shortest process next, and HRRN will use the equation of (serve time + wait time)/ serve time.

For my program, I initially was having an issue with reading the file since my read file method always rereads the last length and takes that as a process to execute which is not true. Therefore, I included the requirement that all process ID’s must be an alpha value and that seems to solve the problem. I also misunderstood the instructions and thought that the processes start times would be out-of-order and I thought as well that processes could come at the same time. I deleted the code for both as a way to keep the program neat and organize. Another issue I faced was how to output the results of each algorithm. I thought of continuously printing as the algorithm was executing but decided to give each algorithm their own matrix and queue for the results. What I found interesting is that if my matrices were initialized as local variables for my methods then it would duplicate the previous algorithms answers, so I made the answers as global variables. My last issue was to coordinate the column number in the matrix and the “time” that the algorithm was on. That issue ended after a few debugging modes in Visual Studio Code. For this project I tried to keep my c program neat through delegating tasks to certain methods. I also tried to keep methods from being called a redundant number of times through calling the sort methods once before executing a process. Lastly, putting the output in order was difficult but that was because I put the queues in the wrong methods.

This program assignment helped me understand the programs more clearly. I now know how the CPU goes about executing certain processes over others since I had to do the algorithm by hand at times to understand my bugs clearly.

The program now can simulate a CPU through using FCFS, SPN, or HRRN for deciding which process to execute next.