

Final Project Design Document: Round Robin Scheduler.

For the final project in Operating Systems I will create a round robin scheduler simulation. The program will allow users to manually set a quantum, as well as a time for context switching, and will automatically track turnaround time, wait time, and time to completion.

The scheduler will run through a list of tasks, likely stored as an array with values for the required burst time for each. The scheduler may run through the list once, or may loop through the list continuously.

Additionally, different scheduling algorithms will be simulated to compare their performance to round robin. For example, I will test FCFS by simply increasing the quantum to a large value so that effectively, the scheduler works on the first task until completion. I will also test a shortest job first algorithm and potentially more that I come across in my research.

An ideal outcome for the project would be to have a clean program with different functions for different scheduling algorithms. They should all be able to take an array of tasks as a parameter, and should output key information about the performance of the scheduler such as turnaround time and wait time. Hopefully, this will give me a good understanding of the advantages and disadvantages of different algorithms, and their ability to perform over varying tasks.

The program will be written in Python and tested/executed on my local machine. I may need to research minor details on Python syntax and will also research different scheduling algorithms and the specifics of how they operate.