**Operating Systems and Concurrency (COMP2035)**

**AUM1 23-24**

**Readme File**

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| **Student Name** | **Course** | **Student ID** |
| Wong Syn Yee | CSAI | 20409327 |
| Ting Chung Hieng | CSAI | 20410848 |
| Lim Bing Qian | CSAI | 20408309 |
| Chai Ze Xuan | CSAI | 20391084 |

**Group Number**  **:** PGA1234

**Module Convenor :** Dr. Yasir Hafeez

**Overview**

This C program implements a scheduling algorithm that combines First Come First Served (FCFS), Round Robin (RR), and a Multi-Level Feedback Queue (MLFQ). The program prompts the user to select the scheduling algorithm and provides options for FCFS, RR, and Multi-Level Scheduling. The scheduling is demonstrated with Gantt charts, and the program will calculate and display a table that shows waiting time, turnaround time, and completion time for each process. Finally, the average waiting time and average waiting time of the program will be displayed.

The program consists of three main functions: firstcomefirstserve(), roundrobin(), and multilevel(). Each function implements a specific scheduling algorithm and includes relevant data structures and logic.

**First Come First Served** : Implements the First Come First Served scheduling algorithm.

**Round Robin** : Implements the Round Robin scheduling algorithm.

**Multilevel feedback queue** : Implements the Multi-Level scheduling algorithm, it runs on the higher priority queue first, which is Round Robin queue, then onto the lower priority queue, First Come First Served queue.

**Instructions to run this program**

1. Firstly, run the program and select an operation to run in the main menu by entering one of the keys available in the menu.

* Key ‘1’: Runs the FCFS queue.
* Key ‘2’: Runs the RR queue.
* Key ‘3’: Runs the MLFQ queue.
* Key ‘4’: Exit the program.

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2. Once an operation of your choice is selected, input your desired workload, these are the information required to be entered:

* Number of processes
* Arrival time for each process
* Burst time for each process
* Quantum time ( for RR and MLFQ only )

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3. Once all required information is inputted, the following results will be shown:

* How each process is being processed
* Gantt chart
* A table to show all the results for this workload running on the scheduler
* Average waiting time
* Average turnaround time
* Throughput

A screenshot of a computer program

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4. After an operation is finished, the main menu will be displayed again, and user can choose to exit the program by entering key ‘4’ or perform an operation again by selecting one of the keys (key ‘1’ to key ‘3’).