جامعة الملك سعود
King Saud University

CSC227 PROJECT

Supervised by Abeer Alshaya
Second Semester 1441H
Spring 2020
Section : 46304
Group #5

CSC227

In this project, we are required to program a simulation of a simple multiprogramming batch operating system.

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The system hardware specifications:

- A single-core CPU.
- A hard disk with 2 GB available for user
- programs. A RAM with 192 MB available for
- user programs. A single IO device.

The simulation covers two features of the operating system:

- Job scheduling: The operating system maintains a single job queue. Job Scheduler follows the Smallest Storage Requirement (SSR) policy.
- Process scheduling. The operating system maintains a single ready queue and a single I/O queue. CPU Scheduler follows the First-Come, First-Served (FCFS) scheduling algorithm policy.

A

Name ID

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- shahad alshabri 438201590
- nura alsubaye 438202523
- maha alzeghaibi 438201770
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B

Task	Name	Task	Name
General	All members	LinkedQueue class	madawi
Setup	All members	Node class	madawi
The main For Project class	All members	PCB class	shahad
Writing the README file	shahad	Simulator class	Fawziah&maha
Comprehensive review	All members		
Job class	nura		

C Instructions on how to execute the program

1. to execute our system you most have a java IDE installed in your computer .
2. open the .zip file then copy all the classes .java into your framework that you use to run java files like eclipse or NetBeans …act (if you are using a basic framework such as jgrasp make sure you have complied all the classes before running the main .)
3. one we execute the main operating system will running and generate job.txt with random number of jobs and each job has its own PCB .
4. all the jobs will stay on the ROM wait to be selected by the Job scheduler.
5. When the job scheduler with (FCFS) scheduling algorithm select a job to be a process the process will move to the ready queue then to the running
6. Process status going to change from running to terminated
7. The system will chick wither the termination was normally or up-normally and will print the result.
8. Finally the system will finish all the jobs and processes and result.txt file will be generated with the total number of processed jobs and the number of the processes that completed normally or up-normally .

D Student reflection on the simulation

The idea of this project is very good and it’s a great opportunity to learn and understand the operating system subject because nothing better than experience in learning and . The project was a real application of the knowledge we gained during the semester ,we wish if we had enough time and better situations which would make a difference where we can work together at the same place and time where we can exchange the knowledge easily and understand the project better , we suggest for the next semesters to release the project specification more early.

Suggestions for improving performance

- add more RAMs'
- more parallel execution use
- multiple I/O devices