Cairo University

Faculty of Computers & Artificial Intelligence

Advanced Operating System (2021-2022)

Assignment 2

Disk Scheduling

You should try to compare the output after applying **all** the following disk scheduling algorithms (**FCFS**, **SSTF**, **SCAN**, **C-SCAN**, **LOOK** and **C-LOOK**) as well as **the newly optimized algorithm**

by implementing their algorithms and applying it on a disk queue with requests for I/O blocks on cylinders.

Example of cylinders I/O requests:

98, 183, 37, 122, 14, 124, 65, 67
Initial head start cylinder: 53

The newly optimized algorithm procedure and flowchart are found in page 10 in the following paper:

https://research.ijcaonline.org/volume93/number18/pxc3896046.pdf

The following information should be followed:

1- The Input queue like above should be an input to your program from the command line, from a file or through GUI.

2- The Initial head start cylinder should also be an input to your program and entered by the user.

3- The output result should **show the sequence** of head movement to access the requested cylinders based on the implemented algorithms.

4- Also, show **the total head movement** per algorithm.

5- You should summarize the newly optimized algorithm in your own words.

** **1 Bonus Grade** for visualizing the sequence of the head movements using GUI.

Submission Instructions:

1- This assignment will be submitted into groups of **(three to four students)** and the due date is on **Friday 22th of April 2022 at 11:59 PM** on Blackboard. **You should work in groups from the same lab.**

2- You can deliver code in (Java, C++, C#, or Python). You should deliver a running code and match the assignment criteria.

3- You should submit your code on Blackboard before the specified time. Follow these steps in your submissions or you will lose your grades (No Excuses):

   a. You should deliver a folder with your program files. Do not deliver any subfolders just one folder with sub-files.

   b. Name the folder with your IDs separated by underscores **without any spaces**.

   c. Compress this folder in a .**zip** file with the same folder name and upload it. This zipped folder contains the code, needed text files if any, and file containing students' names and ids.

   d. Only one member from the group should upload the assignment file.

   e. You should deliver your own code. Don't copy from the other teams or the internet **(NO CHEATING).** Otherwise, you will get a negative grade.

   f. Late submission is NOT allowed.

Good Luck