Cairo University

Faculty of Computers & Information

Advanced Operating System (2017-2018)

Assignment 3

Disk Scheduling

You should try to compare the output after applying **one of** the following disk scheduling algorithms (**FCFS**, **SSTF**, **SCAN**, **C-SCAN**, and **C-Look**) and 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

6   Every three teams should reach an agreement so that each team work on different two traditional algorithms as well as the new algorithm. Each team will be discussed separately but they should deliver a sheet with a comparison between their systems and the other two teams' systems. For example:

    ○   **Team A: FCFS, SSTF, New algorithm**

    ○   **Team B: SCAN, C-SCAN, New algorithm**

    ○   **Team C: C-Look, SCAN, New algorithm**

Submission date: Saturday 5May2018

Groups: maximum of 4 students.

No late submission.

One student from each group should send a zipped folder; this zipped folder's name is id1-id2 which are the ids of the students.

This zipped folder contains the code, needed text files if any, and files containing student's names and ids.

Each group could only submit their solution to their lab's TA.

Each group will discuss the assignment at lab time inside the lab.