Santa Clara University

Department of Computer Engineering
Advanced Operating Systems (COEN 383)

Project-5 (10 pts)
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Disk scheduling algorithms

Suppose that a disk drive has 5000 cylinders, numbered 0 to 4999. The drive is currently serving a request at cylinder 2255, and the previous request was at cylinder 1723. The queue of pending requests, in FIFO order, is:

2055, 1175, 2304, 2700, 513, 1680, 256, 1401, 4922, 3692

For each of the following disk-scheduling algorithms, starting from the current head position, what is the order of cylinders visited by the head?

What is the total distance (in cylinders) that the disk arm moves to satisfy all the pending requests for each of the following disk-scheduling algorithms?

1. **FCFS:** First Come First Serve
2. **SSTF:** Shortest Seek Time First
3. **SCAN:** Elevator Algorithm – Serving in both directions and always starts at cylinder 0 to the highest cylinder and then reverses direction
4. **LOOK:** similar to SCAN in serving in both directions, however it reverses as soon as there is no more requests in the moving direction
5. **C-SCAN:** Similar to SCAN but serving in one direction only
6. **C-LOOK:** correspond to C-SCAN but reverses as soon as there is no more requests in the moving direction. Similar to LOOK but serves in one direction only.

[1.5 points each plus bonus 1 points if you get them all correct.]

What to turn in

Section-2: Email your answers to the grader. Your subject line should **COEN383 Assignment #5, Group-n**. Cc all your group members so that the grader can do a "Reply all" when needed. This is a group assignment; all group members will receive the same score.