Lab 10: Mass Storage

Sejong Yoon, Ph.D.

References:

- Silberschatz, et al. *Operating System Concepts* (9e), 2013
- Materials from OS courses offered at TCNJ (Dr. Jikai Li), Princeton, Rutgers, Columbia (Dr. Junfeng Yang), Stanford, MIT, UWisc, VT

Agenda

- Exercise

Exercise 10.24

- Write a program that implements the following disk-scheduling algorithms:
  - FCFS
  - SSTF
  - SCAN
  - C-SCAN
  - LOOK
  - C-LOOK

- Your program need to read input.txt in the same directory and write output.txt in the same directory, like before.

Input format

- Following example input.txt means that you will service a disk with 5,000 cylinders numbered 0 to 4,999. Your program will get a series of 1,000 cylinder requests listed starting from the third line of the file. The last line is the initial position of the disk head

input.txt

5000
1000
1234
1222
…
3400
42

1000 requests

Output format

- Report the total amount of head movement required by each algorithm

output.txt

FCFS: xxxxx
SSTF: xxxxx
SCAN: xxxxx
C-SCAN: xxxxx
LOOK: xxxxx
C-LOOK: xxxxx

xxxxx should be the total number of cylinders head travelled via each algorithm

Lab 10 assignment

- Add a comment to the beginning of your source code containing your name, the name of the course, and the title of the assignment:

  /** John Smith

  CSC345-01

  Lab 10 Exercise 1 */
- Rename your source file into lab10_ex1.c
- Prepare Makefile that compiles your source codes into object code lab10_ex1
- Zip your source file into lab10.zip
- Submit your zip file via Canvas