6th homework assignment for Computer Operating Systems – Disk Scheduling

This assignment is worth 15 points and the due date is in D2L.

Write a program that implements the following disk-scheduling algorithms:

a. FCFS
b. SSTF
c. SCAN
d. C-SCAN
e. LOOK
f. C-LOOK

Your program will service a disk with n cylinders numbered 0 to n-1. The program will read a data file ("Asg6Data.txt") found in the assignment section which has two sets of scheduling data. The first entry in the data file is the number of cylinders for your disk. The next entry is the cylinder number the disk position at the beginning of the simulation. Next, comes a line with a string of numbers representing the numbers of cylinders with I/O requests and service them according to each of the algorithms listed above. Following that is a second set of this data in the file but with different values including a different number of cylinders and a different start position. Your program will output the total amount of head movement required by each algorithm. The output should consist of two sets of data in the following format:

For FCFS, the total head movement was xxx cylinders.
For SSTF, the total head movement was xxx cylinders.
For SCAN, the total head movement was xxx cylinders.
For C-SCAN, the total head movement was xxx cylinders.
For LOOK, the total head movement was xxx cylinders.
For C-LOOK, the total head movement was xxx cylinders.

Make certain to remove or turn off any debug output before you generate the output file.

Assume the disk will move from the smaller to larger cylinder numbers for the scan and look algorithms. Do not forget to count the "back to the start" movement for the C-SCAN and C-LOOK algorithms.

There are two sets of data to read into your program and work on. Note that the data second set has different number of cylinders.

For your observations file: Do any of the algorithms look especially good or bad? How many hours did the assignment take? What did you learn from this assignment?

As always, please put comments at the top of your program with your name, the date, the assignment number, and a brief description of the program. I must also see comments within the program. Also, remember to put your name and the assignment number at the top of your observations and output files.

Place your program, observations file, and output file in a zip file and put the zip file in the Dropbox for assignment 6.

You man need to use the Internet to do some research on how the different methods work.