CSL 333 LAB 5 – Memory Management and Disk Scheduling

This lab consists of 2 parts: -

1. In the first part, you are required to implement the following page replacement algorithms:

a) FIFO
b) OPTIMAL
c) LRU

The input will be a .txt file. The first line consists of the reference string and second line tells the number of frames available. The two numbers in the first line need to be separated by two space characters.

For example: -

1 2 3 4 1 2 5 1 2 3 4 5
3

Here, the first line specifies the reference string and the second line states that there are 3 frames available.
The output needs to be a .txt file stating the number of page faults encountered in each algorithm.

2. In the second part, you are required to implement the following disk scheduling algorithms:

a) FCFS (First come First Serve)
b) SSTF (Shortest Seek Time first)
c) SCAN

The input will be an input.txt file. The first line will specify the number of cylinders available, the second line will specify the current position of the head and the third line will state the queue of the requests. The two numbers in the third line will need to be separated by two space characters.

For example: -

5000
2400
86 1470 913 1774 948 1509 1022 1750 130

The first line specifies that there are 5000 cylinders numbered from 0 to 4999. The second line specifies the current position of the head. The third line is the queue of the pending requests.

The output will need to be an output.txt file containing the total distance (in cylinders) that the disk arm moves to satisfy all the pending requests for the different cases of the disk scheduling algorithms.

You need to submit C programs, which take input.txt as input and generates output.txt. Please note that your program needs to work for any valid input file containing the data as specified.