

LAB 7 : DISK SCHEDULING

-By Prakash A CS20B061

Introduction

This Assignment is studying about different disk scheduling algorithms which are used in scheduling the disk I/O requests efficiently . Thereby we will see efficiency of each algorithm.

The 6 different disk scheduling algorithms are :

FCFS

First in, first out (FIFO), also known as first come, first served (FCFS), is the simplest scheduling algorithm. FIFO simply queues processes in the order that they arrive in the ready queue.

In this, the process that comes first will be executed first and next process starts only after the previous gets fully executed

SSTF

Basic idea is the tracks which are closer to the current disk head position should be serviced first in order to minimize the seek operations.

SCAN

In the SCAN disk scheduling algorithm, head starts from one end of the disk and moves towards the other end, servicing requests in between one by one and reaching the other end. Then the direction of the head is reversed and the process continues as the head continuously scans back and forth to access the disk.

In this Assignment SCAN has been implemented in such a way that it initially goes left then to right .

C-SCAN

C-SCAN moves the head from one end servicing all the requests to the other end. However, as soon as the head reaches the other end, it immediately returns to the beginning of the disk without servicing any requests on the return trip and starts servicing again once it reaches the beginning

In this Assignment C-SCAN has been implemented in such a way that it initially goes right then to left .

LOOK

The LOOK algorithm services request similarly as SCAN algorithm meanwhile it also “looks” ahead as if there are more tracks that are needed to be serviced in the same direction. If there are no pending requests in the moving direction the head reverses the direction and starts servicing requests in the opposite direction.

The main reason behind the better performance of LOOK algorithm in comparison to SCAN is because in this algorithm the head is not allowed to move till the end of the disk.

In this Assignment LOOK has been implemented in such a way that it initially goes left then to right .

C-LOOK

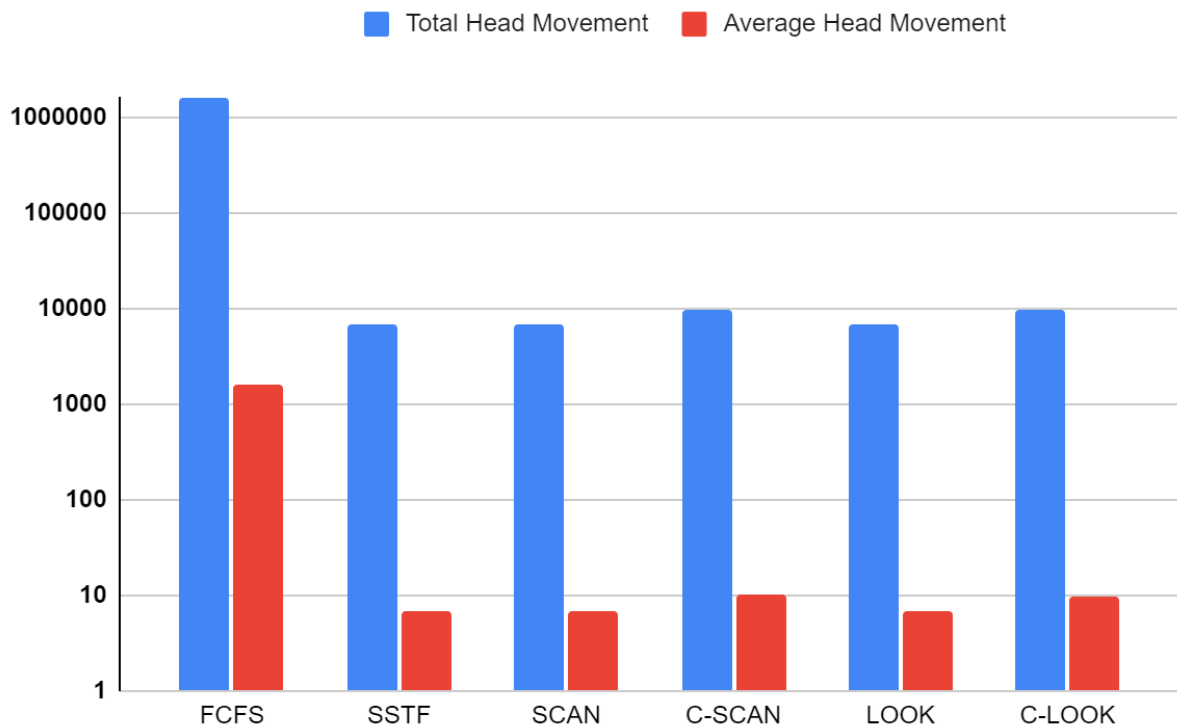
In this algorithm, the head services requests only in one direction(either left or right) until all the requests in this direction are not serviced and then jumps back to the farthest request on the other direction and service the remaining requests which gives a better uniform servicing as well as avoids wasting seek time for going till the end of the disk.

In this Assignment C-LOOK has been implemented in such a way that it initially goes right then to left .

For initial position of disk head = 2000

The values are :

	FCFS	SSTF	SCAN	C-SCAN	LOOK	C-LOOK
Total Head Movement	1620758	6995	6997	9997	6971	9979
Average Head Movement	1620.76	6.995	6.997	9.997	6.971	9.979



By the Graph it can be seen that $FCFS > C-SCAN \geq C-LOOK > SSTF \geq LOOK$.

From this we can infer that the FCFS Algorithm has the highest head movement and has most total and average seek time and LOOK Algorithm has least ones.