

Melson Heo

Assignment 4 Report

Algorithm Definition:

1. FCFS (First Come First Serve): a scheduling algorithm that automatically executes queued requests and processes whenever in arrival (similar to FIFO queue).
2. SCAN: a scheduling algorithm where the heads from one end of the disk move towards the other end. After it is done, the direction of the head is reversed and the process continues scanning back and forth to access the disk. This is also known as the elevator algorithm.
3. CSCAN: a scheduling algorithm where it is the modified version of SCAN where it deals with the inefficiency of the SCAN algorithm by servicing the requests more uniformly. It moves the head from one end servicing all the requests to the other end. However, as the head reaches to the other end, it returns to the beginning of the disk without servicing any requests. This is also known as the circular elevator algorithm.

The results for each of the algorithm:

When the parameters become 10:

FCFS: 3290734

SCAN: 11506

CSCAN: 19985

Which algorithm is the best? Why?

Among the three algorithms, the SCAN algorithm is the best one because it requires the least amount of head movement as shown in the results.

Screenshot of the Output:

```
melson@melson-VirtualBox:~/Documents/CSC 332 Class/Assignment 4$ gcc assignment4.c
melson@melson-VirtualBox:~/Documents/CSC 332 Class/Assignment 4$ ./a.out 10
--Disk Algorithm: Head Movement--
FCFS: 3290734
SCAN: 11506
CSCAN: 19985
melson@melson-VirtualBox:~/Documents/CSC 332 Class/Assignment 4$ ./a.out 15
--Disk Algorithm: Head Movement--
FCFS: 3402454
SCAN: 10831
CSCAN: 19991
melson@melson-VirtualBox:~/Documents/CSC 332 Class/Assignment 4$ ./a.out 256
--Disk Algorithm: Head Movement--
FCFS: 3401896
SCAN: 14913
CSCAN: 19998
melson@melson-VirtualBox:~/Documents/CSC 332 Class/Assignment 4$ ./a.out 722
--Disk Algorithm: Head Movement--
FCFS: 3336064
SCAN: 10094
CSCAN: 19996
melson@melson-VirtualBox:~/Documents/CSC 332 Class/Assignment 4$ ./a.out
Too few parameters, please add a starting position.
melson@melson-VirtualBox:~/Documents/CSC 332 Class/Assignment 4$ ./a.out 1001
Incorrect parameter, starting position should be 0-999
```