

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING
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CHAPRA, BIHAR

Subject: Operating System

Assignment- 5

Subject Code: 061403

1. Illustrate with examples the following Disk Scheduling Algorithms:
 - a. SSTF
 - b. C-Look
 - c. SCAN

2. Suppose a Disk drive has 5000 cylinders, numbered 0 to 4999. The drive is currently serving a request on cylinder 143, and the previous request was on 125 cylinder, the queue of pending requests, in FIFO order is: 86, 1470, 913, 1774, 948, 1509, 1022, 1750, 130.
Starting from the current head position, what is the total distance (in cylinders) that the disk arm moves to satisfy all the pending requests for each of the following disk scheduling algorithms?
 - a. FCFS
 - b. SSTF
 - c. C-SCAN

3. Is disk scheduling other than FCFS scheduling, helpful in single user environment: Explain your answers?

4. Disk requests are received by a disk drive for cylinder 5, 25, 18, 3, 39, 8 and 35 in that order. A seek takes 5 msec per cylinder moved. How much seek time is needed to serve these requests for a Shortest Seek First (SSF) algorithm? Assume that the arm is at cylinder 20 when the last of these requests is made with none of the requests yet served

5. Consider a disk system with 100 cylinders. The request to access the cylinders occur in the following sequences 4, 34, 10, 7, 19, 73, 2, 15, 6, 20 Assuming the head is currently at cylinder 50, what is the time taken to satisfy all requests if it takes 1 ms to move from one cylinder to adjacent one and shortest seek time first algorithm is used.

6. A disk drive has 100 cylinders, numbered 0 to 99. Disk requests come to the disk driver for cylinders 12, 26, 24, 4, 42, 8 and 50 in that order. The driver is currently serving a request at cylinder 24. A seek takes 6 msec per cylinder moved. How much seek time is needed for shortest seek time first (SSTF) algorithm?

7. disk requests come to disk driver for cylinder 10,22,20,2,40,6,X in that order at a time when the disk drive is reading from cylinder 20 the seek time is 6ms per cylinder if the total seek time 876ms under FCFS scheduling algorithm then what is the value of x?

8. Write short notes on the following:
 - a. Disk scheduling
 - b. Disk structure
 - c. Disk Reliability
 - d. Disk Formatting
 - e. Boot Block