Assignment #5

{'instructor' : 'Ezzat',
'group' : 'ForkQueue' }

Francisco McGee • Scot Matson • Tyler Jones • Daniel Tam

Disk scheduling algorithms:

Suppose that a disk drive has 5000 cylinders, numbered 0 to 4999. The drive is currently serving a request at cylinder 2255, and the previous request was at cylinder 1723. The queue of pending requests, in FIFO order, is:

Previous	1723									
Current	2255									
Queue	2055	1175	2304	2700	513	1680	256	1401	4922	3692
Sorted	256	513	1175	1401	1680	2055	2304	2700	3692	4922

Q1: For each of the following disk-scheduling algorithms, starting from the current head position, what is the order of cylinders visited by the head?

Q2: 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?

FCFS:

First Come First Serve
A1.1:

2055	1175	2304	2700	513	1680	256	1401	4922	3692

A1.2:
Total Distance = 13,079

SSTF:

Shortest Seek Time First
A2.1:

2055	2304	2700	3692	4922	1680	1401	1175	513	256

A2.2:
Total Distance = 7533

SCAN: Elevator Algorithm

Serving in both directions and always starts at cylinder 0 to the highest cylinder and then reverses direction
A3.1:

2055	2304	2700	3692	4922	4999	1680	1401	1175	513	256

A3.2:
Total Distance = 7687

LOOK:

Similar to SCAN in serving in both directions, however it reverses as soon as there is no more requests in the moving direction
A4.1:

2055	2304	2700	3692	4922	1680	1401	1175	513	256

A4.2:
Total Distance = 7533

C-SCAN:

Similar to SCAN but serving in one direction only
A5.1:

2055	2304	2700	3692	4922	4999	0	256	513	1175	1401	1680

A5.2:
Total Distance = 9623

C-LOOK:

Correspond to C-SCAN. Similar to LOOK but serves in one direction only.
A5.1:

2055	2304	2700	3692	4922	256	513	1175	1401	1680

A5.2:
Total Distance = 8957