- Module - 5 -

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- Disk Scheduling -

→ OS is responsible for using the hardware efficiently.
→ For disk drives - this means: having a fast access time.

→ Access Time has 2 major components:
(1) Seek Time is the time for the disk arm to move the heads to the cylinder containing the desired sectors.
(2) Rotational Latency is the additional time waiting for the disk to rotate the desired sector to the disk head. (Assumed to be negligible)

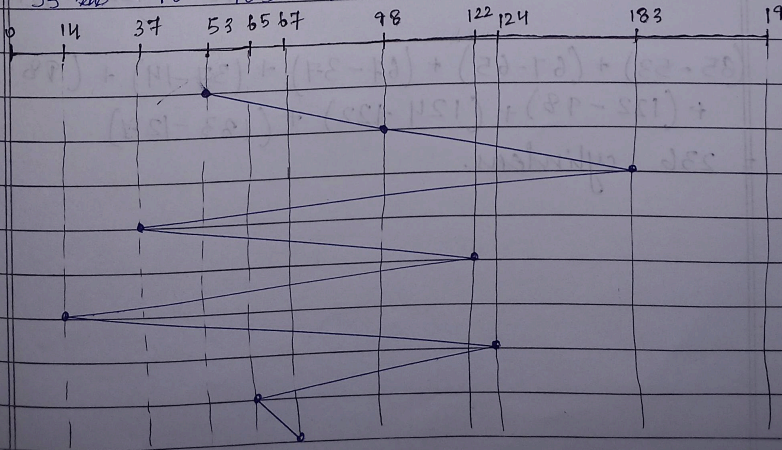
→ Objective: Minimize seek time.

→ Several algorithms are there to schedule the servicing of disk I/O requests.

→ We can illustrate them by using a request queue (0-199)
98, 183, 37, 122, 14, 124, 65, 67
Suppose the head pointer is at: 53

FCFS -
Move the head in the direction in which cylinders are requested.

53 → 98 → 183 → 37 → 122 → 14 → 124 → 65 → 67



(98-53) + (183-98) + (183-37) + (122-37) +
(122-14) + (124-14) + (124-65) + (67-65)

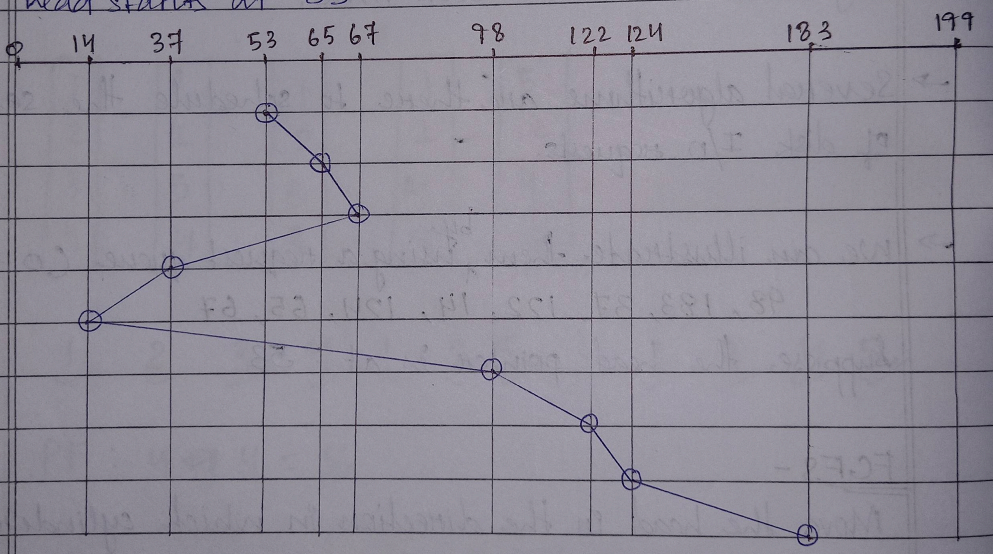
= 640 (Total cylinders)

Shortest Seek Time First (SSTF) Algorithm:-

→ Selects the request with the min. ~~no. of~~ seek time from the current head position.

queue: 98, 183, 37, 122, 14, 124, 65, 67

head starts at 53



53 → 65 → 67 → 37 → 14 → 98 → 122 → 124 → 183

(65-53) + (67-65) + (67-37) + (37-14) + (98-14)
+ (122-98) + (124-122) + (183-124)

= 236 cylinders.