9/4/18

Storage Management

Disk Scheduling Algorithms:

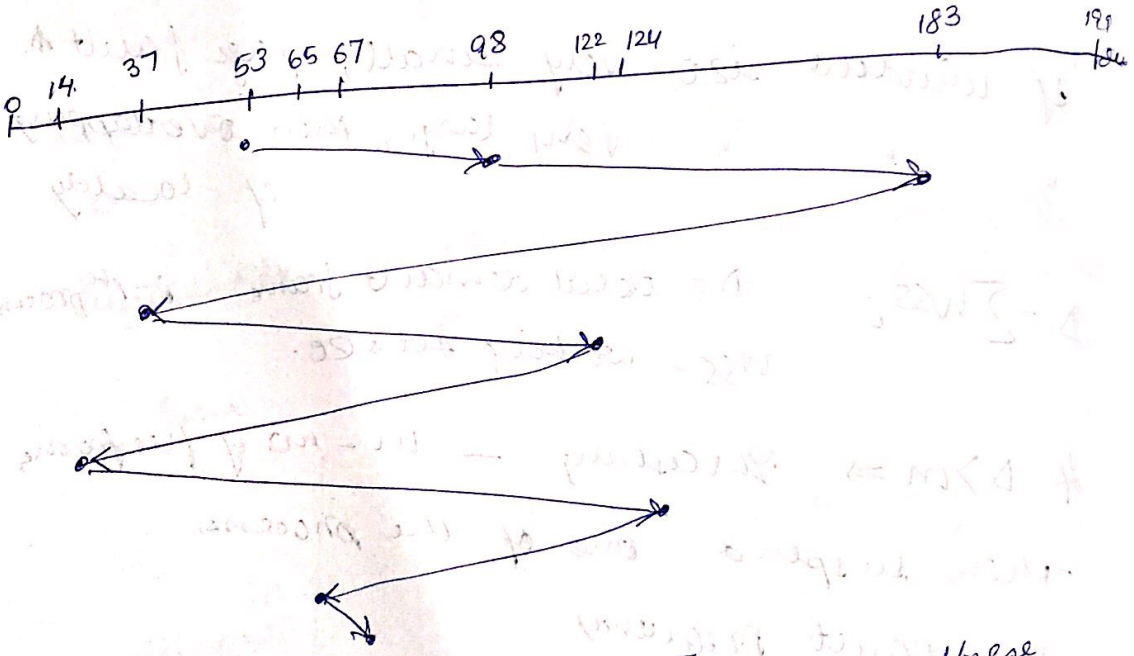
- FCFS
- SSTF
- SCAN
- C-SCAN
- C-LOOK

Disk queue - request of particular block or sector stored in disk queue.

FCFS diff. sectors

98 183 37 122 14 124 65 67

initially, head is at 53.



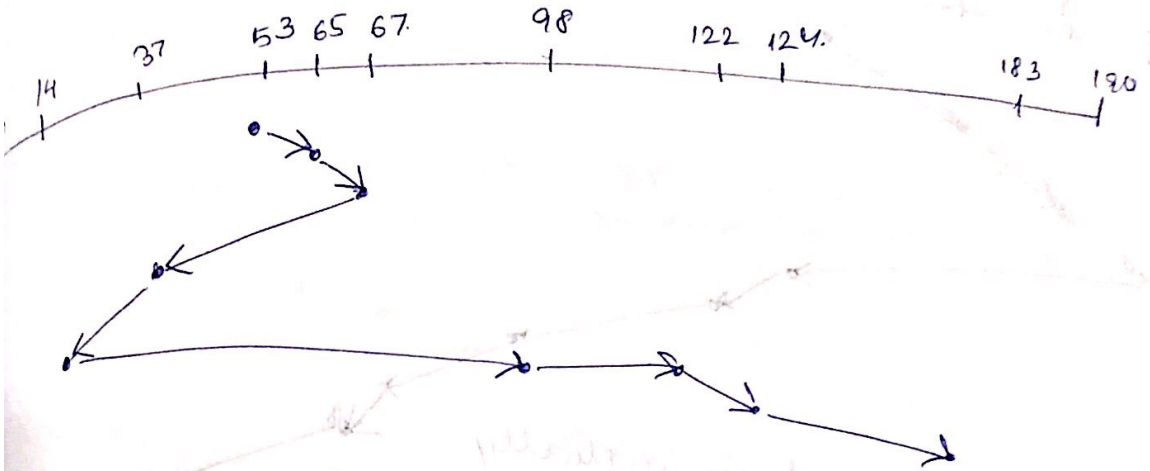
1st req. = 98 - 53 =
2nd " = 183 - 98 =
3rd " = 183 - 37 =
124 - 37 =
124 - 14 =
183 - 14 =
|14 - 65| =
67 - 65

sum of these differences is the total head movement

= 640

SSTF

shortest seek time first



Head movement :-

65-53 =
67-65 =
67-37 =
37-14 =
98-14 =
122-98 =
124-122 =
183-124 =

= 236

Disadvantages :-

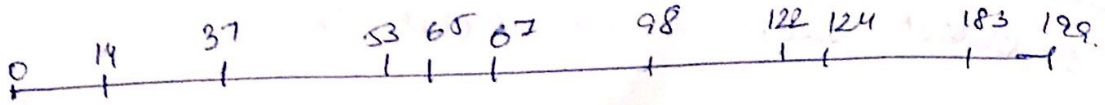
- all request need to be present initially, which is not always possible
- causes starvation

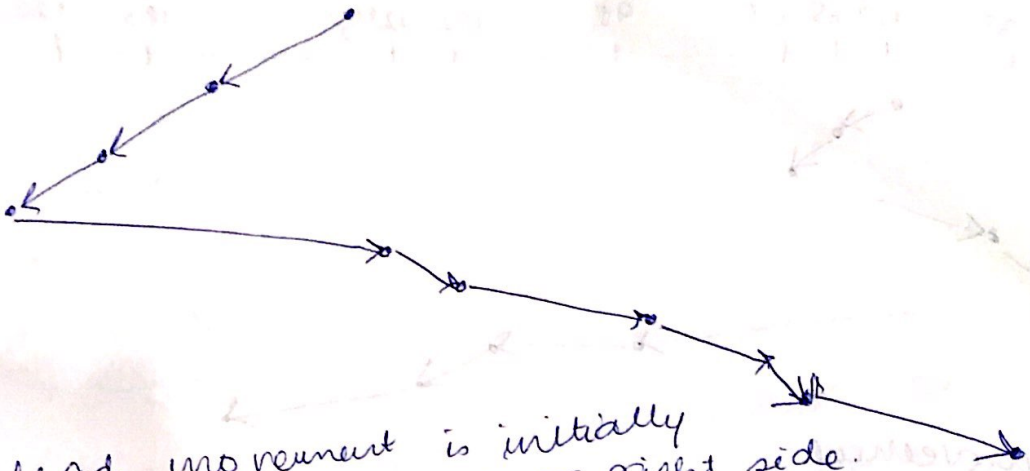
eg. when head at 53 → 65 → 67 → 37. If we get new request at 35, 14, 10, 8, 40, then, head remains at left side only. It cannot service the requests at higher positions.

198, 122, 183, ... ~~remain~~ starve.

SCAN

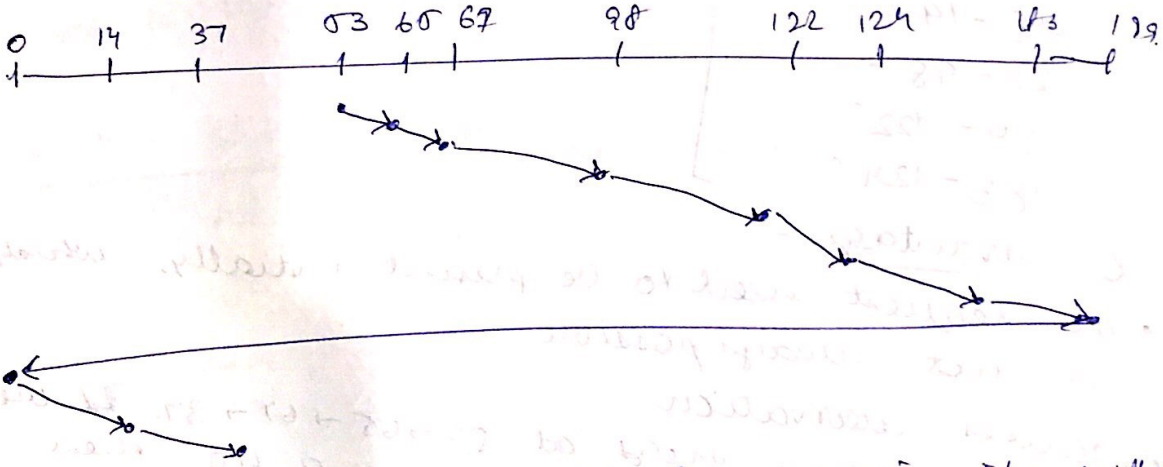
- also called elevator algorithm
- when head moves to one side, it moves to the farthest direction of that side. and then ~~now~~ turns to other side.



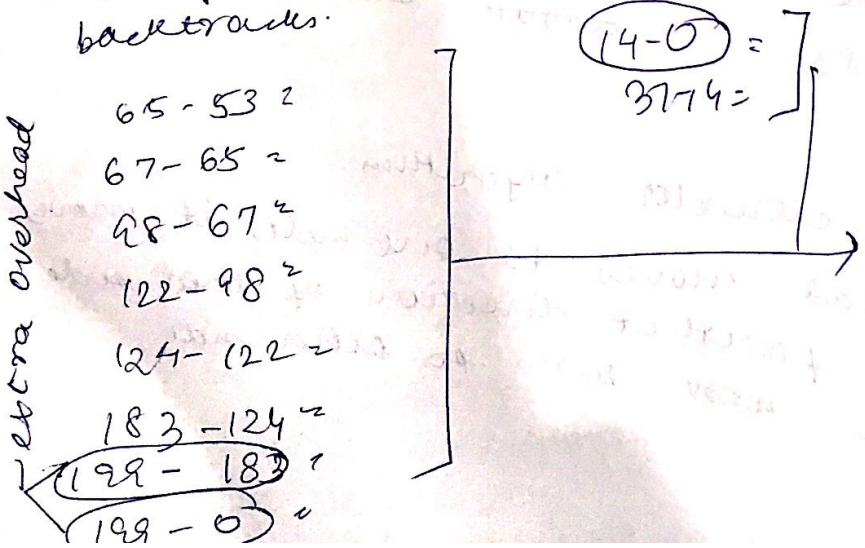


Head movement is initially fixed, either left side or right side.

C-SCAN

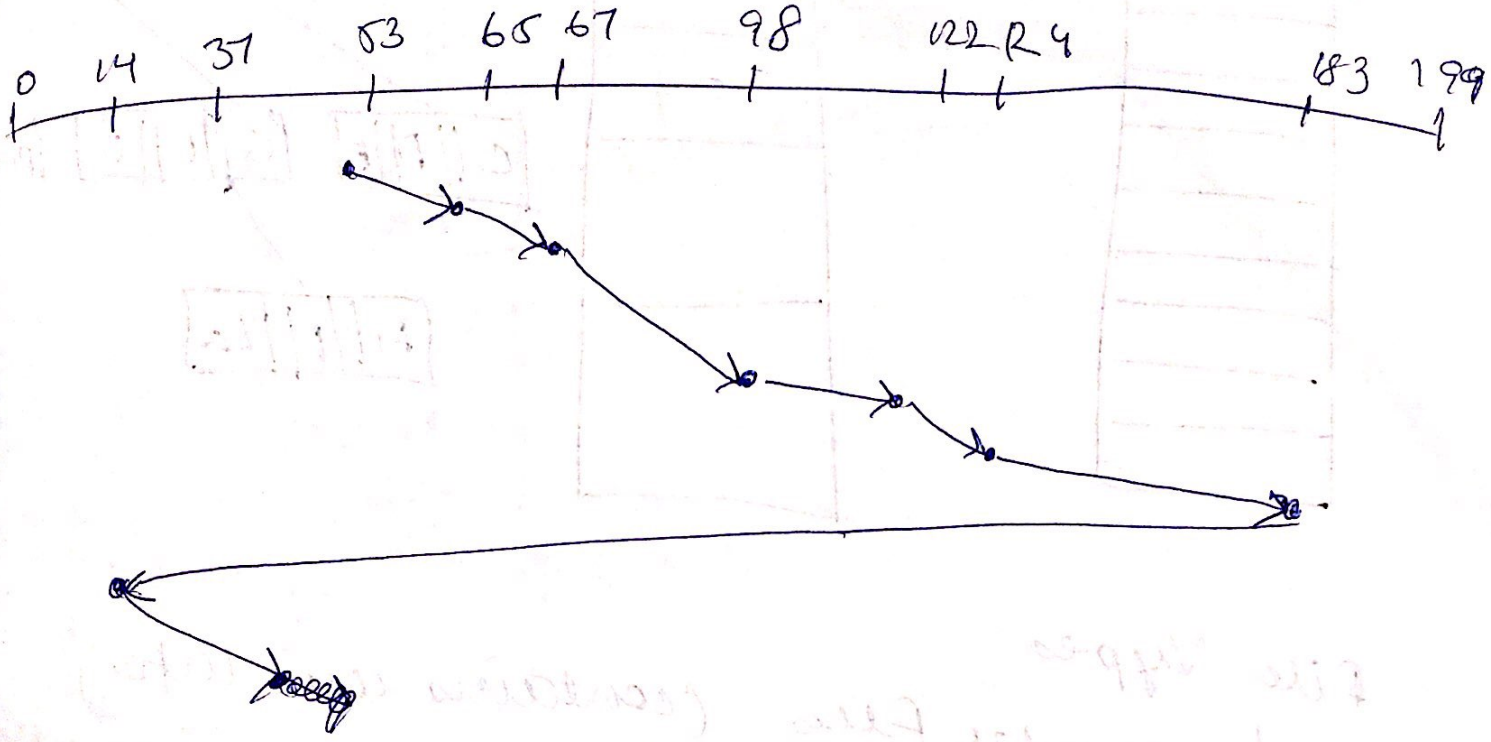


It starts from one side. On reaching the farthest end of that side, it goes to the farthest end of the ~~end~~ other side and then backtracks.



Here extra move is given so that others can be serviced in short time.

C-LOOK



does not go to extremes.