

MCA 2<sup>nd</sup> Semester

CS-23 Operating System and Shell Programming

Unit 4

Topic : Disk Head Scheduling

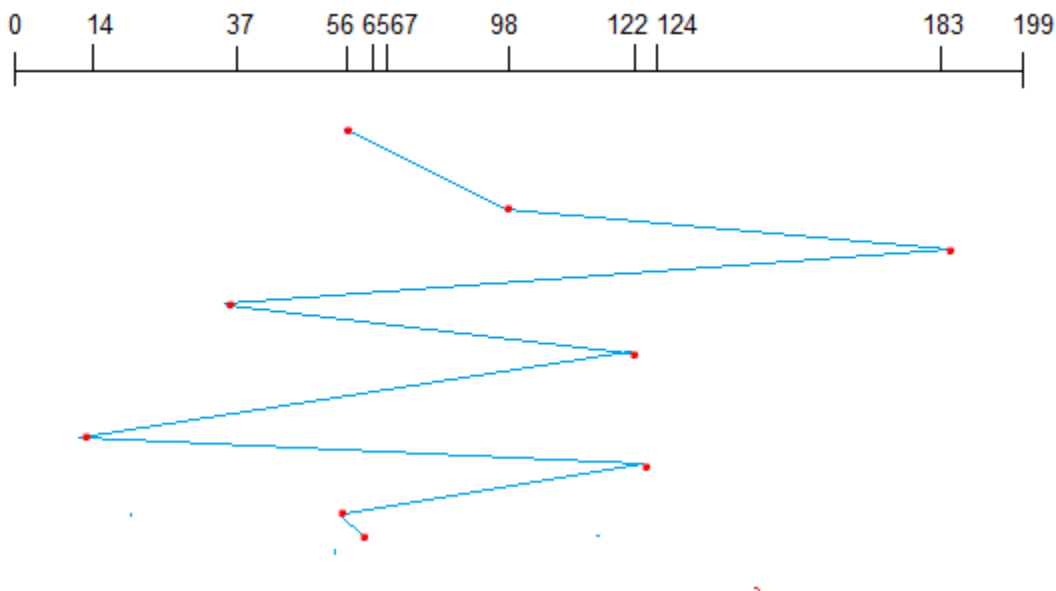
On a typical multiprogramming system, there will usually be multiple disk access requests at any point of time. So those requests must be scheduled to achieve good efficiency. Disk scheduling is similar to process scheduling. Some of the disk scheduling algorithms are described below.

## First Come First Serve

This algorithm performs requests in the same order asked by the system. Let's take an example where the queue has the following requests with cylinder numbers as follows:

**98, 183, 37, 122, 14, 124, 65, 67**

Assume the head is initially at cylinder **56**. The head moves in the given order in the queue i.e., **56→98→183→...→67**.

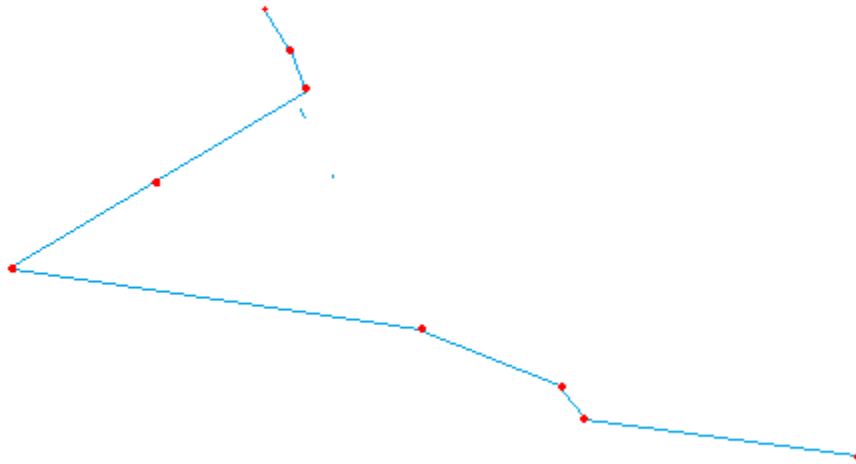
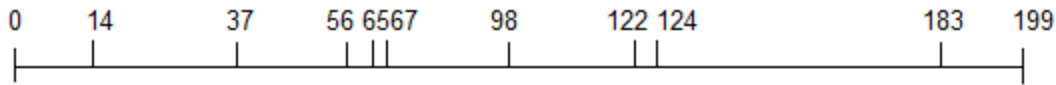


## Shortest Seek Time First (SSTF)

Here the position which is closest to the current head position is chosen first. Consider the previous example where disk queue looks like,

**98, 183, 37, 122, 14, 124, 65, 67**

Assume the head is initially at cylinder **56**. The next closest cylinder to **56** is **65**, and then the next nearest one is **67**, then **37**, **14**, so on.



## SCAN algorithm

This algorithm is also called the elevator algorithm because of its behavior. Here, first the head moves in a direction (say backward) and covers all the requests in the path. Then it moves in the opposite direction and covers the remaining requests in the path. This behavior is similar to that of an elevator. Let's take the previous example,

**98, 183, 37, 122, 14, 124, 65, 67**

Assume the head is initially at cylinder **56**. The head moves in backward direction and accesses **37** and **14**. Then it goes in the opposite direction and accesses the cylinders as they come in the path.

