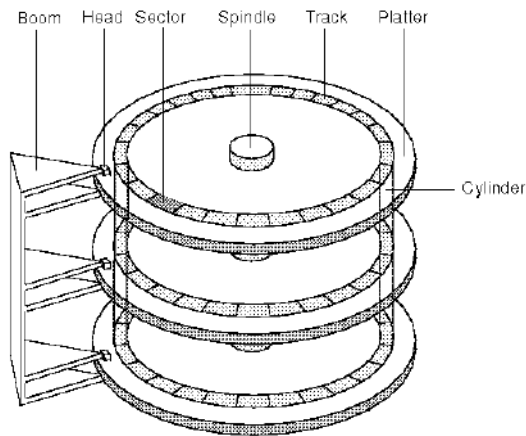


1) Second-Storage Management

a. What is a Second-Storage Management?



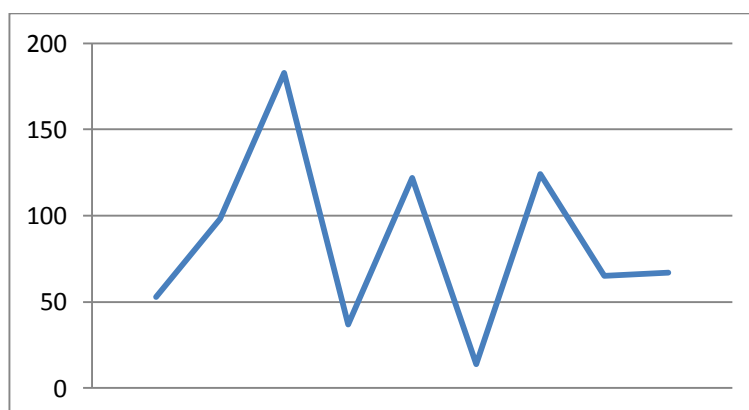
Second-storage management is the different algorithms that are able to read or write on the hard disk. Its efficiency is measured by the number of movements of head. In other words, we measure the number of tracks we have to pass through before to have the information we demand.

b. Why do we need algorithms to manage it?

Second-storage algorithms are important because hard drive requests are the most important. If we have not improved the efficiency of reading and writing on the hard drive, we will have long latency before the end of each operation.

c. How can we read/write on a hard disk?

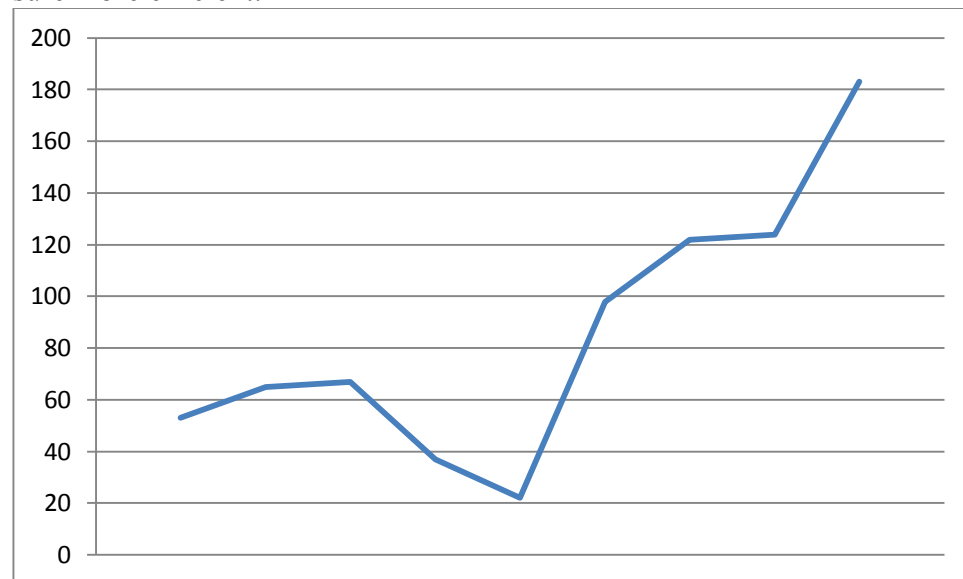
The easier way to match each track is to do it one after the order by the way they are coming. This algorithm is the FCFS (First Come First Served). For example let's have this request queue: 98-183-37-122-14-124-65-67 and the head is actually on 53.



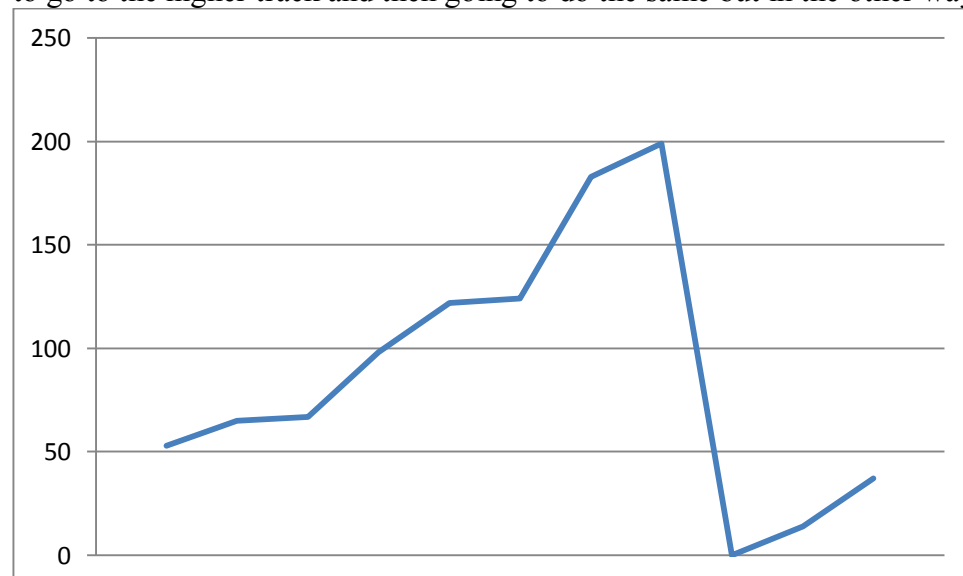
For each movement we calculated the number of tracks passed:
 53 to 98 = 45, 98 to 183 = 85 and so on until the end. Then we addition all the number to have the head movement rate. We obtain for this example 640movements

Another algorithm we look for the most closed track from the one it is actually. This algorithm is the SSTF (Short Seek Time First).

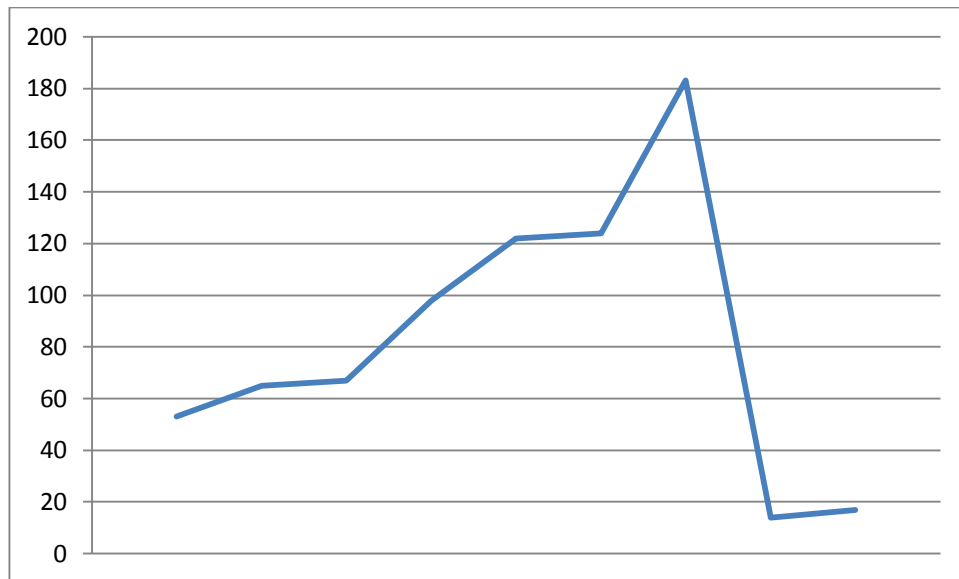
If we are doing the same example as above, we will obtain 236 movements. It is for sure more efficient.



Then we can make an algorithm which is going to start at 0 and read/write all request when they are coming until 199. After that, it will restart at the first track. This algorithm is SCAN. It has evolved to C-SCAN which is a circular SCAN. It is going to go to the higher track and then going to do the same but in the other way.



Finally, we have LOOK which is another evolution of the SCAN algorithm. The difference is that LOOK is not going to start at the first track and finished with the last one. It is going to limit itself to the requested track.



The advantage of the two last methods is that they are treated hard disk as a circular disk. It is still turning in the same way where others algorithms are running in both ways.

2) Conclusion

To conclude, the second memory management is obligatory to have an efficient computer.

The development of the algorithms to manage the head of lecture is important. Time of access to datas to read or write must be the slowest as possible?