* Suppose we have a disk with 5 platters, 512 bytes per sector, 20,000 tracks per surface, and an average of 300 sectors per track. Then the capacity of the disk is: 30.72 gb = 512 \* 20000 \* 300
* Seek Time is The time required to move the arm to the specific target sector.
* A hard disk system has the following parameters :
* Number of tracks = 500 Number of sectors/track = 100 Number of bytes /sector = 500 Time taken by the head to move from one track to adjacent track = 1 ms Rotation speed = 600 rpm.
* What is the average time taken for transferring 250 bytes from the disk ?
* **My Approach**
* Avg. time to transfer = Avg. seek time + Avg. rotational delay + Data transfer time
* **Avg Seek Time**
* given that : time to move between successive tracks is 1 ms
* time to move from track 1 to track 1 : 0ms
* time to move from track 1 to track 2 : 1ms
* time to move from track 1 to track 3 : 2ms
* time to move from track 1 to track 500 : 499 ms
* Avg Seek time =enter image description here = 249.5 ms
* Rotational Latency is Once the head is in position over the track, the drive waits for the first bit of the target sector to pass under the head.
* Transfer rate When the first bit of the target sector is under the head, the time taken by the drive to read nor write the contents of the sector
* Find the average rotational latency (ms) for the disk with rotational rate is 7200 RPM (revolutions per minute) and T average seek is 9 ms and average sectors / track is 400 Tavg rotation = 1/2 x (60 secs/7200 RPM) x 1000 ms/sec = 4 ms .
* Find the average rotational latency (ms) for the disk with rotational rate is 15000 RPM (revolutions per minute) and T average seek is 8 ms and average sectors / track is 500. Tavg rotation = 1/2 x (60 secs/15000 RPM) x 1000 ms/sec = 2 ms.
* Find the average transfer rate (ms) for the disk with rotational rate is 15000 RPM (revolutions per minute) and T average seek is 8 ms and average sectors / track is 500.