

The Storage Layer

Exercise 9.5 Consider a disk with a sector size of 512 bytes, 2000 tracks per surface, 50 sectors per track, five double-sided platters, and average seek time of 10 msec.

1. What is the capacity of a track in bytes? What is the capacity of each surface? What is the capacity of the disk?
2. How many cylinders does the disk have?
3. Give examples of valid block sizes. Is 256 bytes a valid block size? 2048? 51200?
4. If the disk platters rotate at 5400 rpm (revolutions per minute), what is the maximum rotational delay?
 - a. What is the average rotational delay?
5. If one track of data can be transferred per revolution, what is the transfer rate?

Exercise 9.12 What is *sequential flooding* of the buffer pool?

Exercise 9.14 Explain the term prefetching. Why is it important?