

# Database Technologies

UE19CS344

6th Semester, Academic Year 2021-22

Week #: 3 - Indexing problem(Numerical)

(Lab 3)

Date: 1/2/2022

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Given ,

$$\# \text{ records} = 3,00,000$$

$$\text{Size of records} = 100$$

$$\text{Block size} = 4096$$

$$\Rightarrow \# \text{ records in 1 block} = 40$$

$$\Rightarrow \# \text{ blocks} = \frac{300000}{40} = 7500$$

$$\therefore \# \text{ blocks accesses in binary search} \\ = \log_2(7500) \approx 13$$

$$\text{Blocking factor} = \frac{4096}{100} \approx 273$$

$$\text{Binary search on index file} = \log_2\left(\frac{7500}{273}\right)$$

$$\approx 5$$

$$\therefore \# \text{ block accesses using index} \\ = 5 + 1 = 6$$