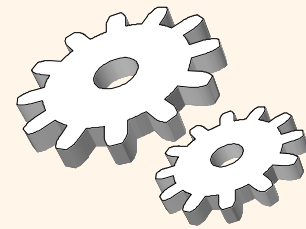


Common Question Clarifications

Storage, Indexing, and Query
Evaluation



*Alternatives for data entries k^**

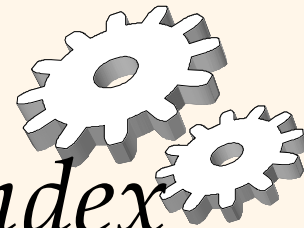
❖ Three alternatives

1. Data record with key value k
2. $\langle k, \text{rid of data record with search key } k \rangle$
3. $\langle k, \text{list of rids pf data record with search key } k \rangle$

❖ Choice of alternatives for data entries is orthogonal to the indexing technique

- Example of indexing techniques: B+-tree, hashing-based structures
- Typically, index contains auxiliary information that directs searches to the desired data entries

Cost of query evaluation using index



- ❖ We have been focusing on #page IOs
 - Expensive, compared to operations in memory
- ❖ Two sources that lead to page IOs:
 1. Locating the data entries (if index are not fully in memory)
 - This is heavily determined by the indexing technique
 2. Cost of retrieving data from disk (if page is not in buffer pool)
 - Clustered vs unclustered can lead to different costs