

Database Index

Gayane Petrosyan

March 6, 2014

What is an index?

A database index is a data structure that improves the speed of data retrieval operations on a database table at the cost of additional writes and the use of more storage space to maintain the extra copy of data.

–Wikipedia

What is an index?

- ▶ usually tree structure (good for range retrieval)
- ▶ index for primary keys
- ▶ single index, composite index
- ▶ good for
 - ▶ order by
 - ▶ group by
 - ▶ range retrieval

Query coverage

```
select a  
from table1  
where b = 10 and c = 20
```

Index on b and c fields does not cover this query

Drawbacks

1. space requirements
2. slow for
 - ▶ update
 - ▶ insert
 - ▶ delete