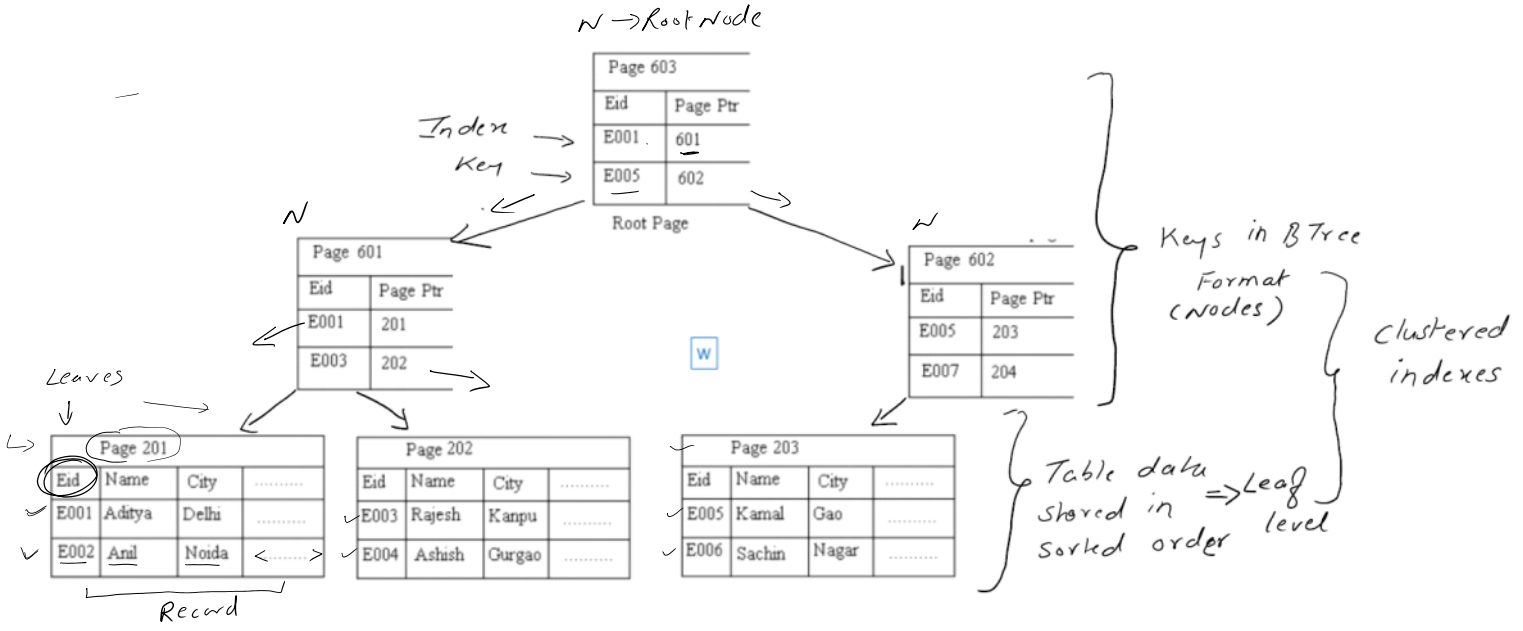
Indexes

Friday, March 25, 2022 6:36 AM

Indexes are used to find rows with specific column values quickly.

Without an index, MySQL must begin with the first row and then read through the entire table to find the relevant rows. The larger the table, the more this execution costs (server response time and resource consumption)



Example of Adding an Index on Table

Option 1

```
CREATE TABLE t1 (
  i INT,
  j INT,
  k INT,
  INDEX i_idx (i)   -- secondary index
) ;
```

Option 2

```
CREATE INDEX j_idx ON t1 (j);
```

Option 3

```
ALTER TABLE t1 ADD INDEX k_idx (k);
```

Table as BTREE → Column value + Rowid

Clustered and Secondary Indexes

Each table has a special index called the clustered index that stores row data.

- When you define a **PRIMARY KEY** on a table, Database use it as the **clustered index**.
- If you do not define a PRIMARY KEY for a table, Database uses the first UNIQUE index with all key columns defined as NOT NULL as the clustered index.
- If a table has no PRIMARY KEY or suitable UNIQUE index, Database generate a hidden clustered index named GEN_CLUST_INDEX on a synthetic column that contains row ID values

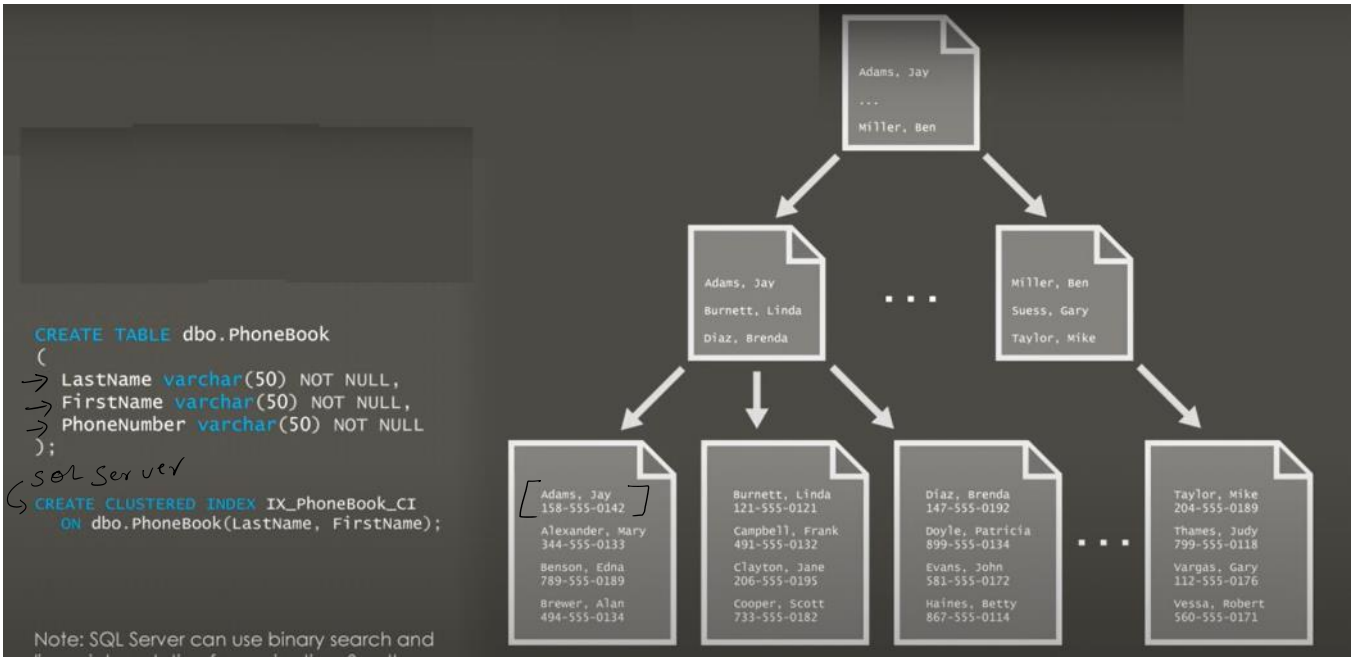
Clustered index

MySQL + SQL Server

Oracle + Postgresql

Suggested Watch

Clustered vs. Nonclustered Index Structures in SQL Server



Non Clustered Indexes