

## Database Concepts (Database, DBMS, Data Models, RDBMS, and SQL)

- In-order to understand SQL, we must first understand different Database Concepts like:
  - Database
  - DBMS
  - Data Models
  - RDBMS
  - SQL etc.
- Database Concepts:
  - Databases
    - The place we can store the related data and later retrieve the data is known as Database.
      - Storing the related Data like Employee ID, Employee Name, Employee Salary, Department etc. can be stored.
      - Retrieving the data based on some conditions.
  - Database Management Systems
    - Shortly called as DBMS
    - Software that stores data in databases in an organized way to make it easier to create, retrieve, update etc.
    - Examples: DBase, FoxPro, MySQL, Oracle, MangoDB, MariaDB, SQLite, Cassandra and many more
  - Data Models
    - Defines how related data is connected to each other and stored inside the database.
    - Types of Data Models:
      - Hierarchical Model
      - Network Model
      - Entity-Relationship Model
      - Relational Model
        - Data is stored in the form of tables.
        - Tables organize the data in the form of rows and columns.
        - It is a popular and widely used by most of the DBMS Software
  - RDBMS
    - DBMS using Relational Data Models are known as RDBMS.
    - Examples for RDBMS Software:
      1. Oracle
      2. MS-SQL Server
      3. DB2
      4. MySQL
      5. MS-ACCESS
      6. etc.
  - SQL
    - Query language for Relational Databases
    - Stands for Structured Query Language
    - The following things can be performed on Database using SQL:
      - Inserting Data
      - Retrieving Data

- Updating Data
- Deleting Data
- And many more