

What is Database?

A database is a collection of **information** that is organized so that it can be easily accessed, managed and updated.

A database is a data structure that stores organized information. Most databases contain multiple tables, which may each include several different fields. For example, a company database may include tables for products, employees, and financial records. Each of these tables would have different fields that are relevant to the information stored in the table.

There are many databases available like MySQL, Sybase, Oracle, MongoDB, Informix, PostgreSQL, SQL Server, etc.

What is DBMS?

Database management system is a software which is used to manage the database. For example: [MySQL](#), [Oracle](#), etc are a very popular commercial database which is used in different applications.

DBMS provides an interface to perform various operations like database creation, storing data in it, updating data, creating a table in the database and a lot more.

It provides protection and security to the database. In the case of multiple users, it also maintains data consistency.

What is SQL?

- SQL stands for Structured Query Language.
- It is designed for managing data in a relational database management system (RDBMS).
- It is pronounced as S-Q-L or sometime See-Qwell.
- SQL is a database language, it is used for database creation, deletion, fetching rows, and modifying rows, etc.
- All DBMS like MySQL, Oracle, MS Access, Sybase, Informix, PostgreSQL, and SQL Server use SQL as standard database language.

Create DATABASE;

- CREATE DATABASE database_name;

=> create database record_shop;

Delete DATABASE;

- Drop DATABASE database_name;

=> drop database record_shop;

Create TABLE;

- `CREATE TABLE table_name (column_1 datatype, column_2 datatype,...);`

=> `create table users(id int primary key auto_increment, name varchar(255), email varchar(100));`

Add data into TABLE;

- `INSERT INTO TABLE table_name (column_1,column_2,..)
VALUES (value_1,value_2);`

=> `insert into users(name,email) values
("Naqvi","test@gmail.com");`

Select data in TABLE;

- `SELECT * FROM table_name;`

=> `select * from users;`

Select data where in TABLE;

- `SELECT * FROM table_name WHERE condition;`

=> `select * from users where name="Ali";`

update data in TABLE;

- UPDATE table_name
SET column1 = value1, column2 = value2
WHERE some_column = some_value;
- => update users
set name = "Ali", password = "abc"
WHERE id = 1;

DELETE DATA IN TABLE;

- DELETE FROM table_name WHERE some_column = some_value;

=> delete from users where id=1;

ALTER TABLE;

- ALTER TABLE table_name ADD column_name datatype;;

=> alter users add column password varchar(50);

Delete TABLE;

- DROP TABLE table_name;

=> drop table users;

Create table and make relation;

- create table products(column_1 datatype,column_2 datatype,FOREIGN KEY (column_name) REFERENCES otherTable(id));;

=> create table products(prodname varchar(50),id int primary key auto_increment,price int ,userID int,FOREIGN KEY (userID) REFERENCES users(id));;

Select from more tables using INNER JOIN;

- `SELECT table1_column_name_1,table1_column_name_2,
table2_column_name_1,table2_column_name_2 FROM
table_name_1 INNER JOIN table_name_2 ON conditon;`

=> `select products.prodname, products.price,
users.name, users.email from products inner join
users on products.userid=users.id;`