What is DBMS & RDBMS and also Difference ?

* 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.

Rdbms

**RDBMS** stands for *Relational Database Management Systems.*.

All modern database management systems like SQL, MS SQL Server, IBM DB2, ORACLE, My-SQL and Microsoft Access are based on RDBMS.

It is called Relational Database Management System (RDBMS) because it is based on relational model introduced by E.F. Codd.

DBMS + E.F. Codd 12 Rules =  RDBMS.

XAMPP <https://www.apachefriends.org/download.html>

X CROSS PLATFORM

A APATCH SERVER

M MYSQL

P PERL

P PHP

Xampp/xampp-control -> open

Apache / Mysql -> start

Google : localhost/phpmyadmin

SQL What is SQL & TYPES?

* SQL stands for **Structured Query Language**
* SQL lets you access and manipulate databases

**4 Types**

1. **DDL Data Definition Language** -----> **4 Commands  create / alter / drop / truncate**

* It is used to define the structure of **databases and tables**.
* We can **create**, **modify** or **delete** the structure of tables.

**Create :**

=>create database shop

=>create table customers(id int PRIMARY key AUTO\_INCREMENT, cust\_name varchar(100),user\_name varchar(100), password varchar(100),email varchar(100), mob bigint(11), address varchar(255), pincode bigint(11))

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1 foreign key

=>create table feedbacks(id int PRIMARY key AUTO\_INCREMENT, fed\_comment varchar(100), fed\_date date,cus\_id int(11), FOREIGN key(cus\_id) REFERENCES customers(id));

2 foreign key

=>create table feedback\_product(id int PRIMARY key AUTO\_INCREMENT, fed\_comment varchar(100), fed\_date date, cus\_id int(11),FOREIGN key(cus\_id) REFERENCES customers(id), pro\_id int(11), FOREIGN key(pro\_id) REFERENCES product(id));

**alter:**

ALTER TABLE  customer add(gender varchar(100)) AFTER ‘password’;  // add column

[ALTER](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/alter-table.html) [TABLE](http://localhost/phpmyadmin/url.php?url=https://dev.mysql.com/doc/refman/8.0/en/alter-table.html) `customers` CHANGE `name` `username` VARCHAR(255)

ALTER TABLE `customer` CHANGE ‘phone’ ‘mobile’ BIGINT(11) //  change column name

ALTER TABLE `customer` DROP `gender`;   // column delete

===================================================================

**drop:**

drop database database\_name  // drop database delete

drop table tbl\_name   // drop table delete

ALTER TABLE `customer` DROP `gender`;   //  table column delete

**truncate:  / delete all data from table /empty table**

truncate table tabl\_name  // delete all table data not table

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1. DML  Data Manipulation Language    3 command   insert / delete / update

* insert:

insert into customer(cust\_name,user\_name,pass,email,mobile,address,pincode,gender) values("Akshay","akashay701","12 34","akashay@gmail.com","5646944","Ahmedabad","325874","Male")

INSERT INTO customers (cust\_name,user\_name,password,email,mob,gender,dob,address,pincode) VALUES ("Raj","raj@gmail.com","1234","raj@gmail.com","123467891","Male","1990-11-17","Chandlodia","382481");

* update:    data update as per id
* UPDATE customer set name="pavan Nagar" ,  password="abc" where id=3

* delete:  data delete as per id

delete from customer where id=3

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1. DQL  Data Query Language  :   Select

* Select Description: This will select  ‘n‘ columns from the table. Or To select all records from the database.

Select \* from customer      // get all data with all column

Select cus\_id,cust\_name from customer  // get all data with particular column

Select \* from customer where cus\_id=2

Select cus\_id,cust\_name from customer where cus\_id=2

1. TCL Transaction Control Language

=> rollback / commit

Rollback :  ctl+z  undo

commit : ctl+s  save as

Advance SQL

1) DISTINCT

SELECT DISTINCT COUNTRY FROM Customers;

2) ORDER BY

SELECT \* FROM Products ORDER BY ProductName ASC

SELECT \* FROM Products ORDER BY ProductName DESC

3) AND OR NOT

SELECT \* FROM Customers WHERE Country="Germany" AND City="Berlin"

SELECT \* FROM Customers WHERE Country="Germany" OR Country =" Mexico "

SELECT \* FROM Customers WHERE Not Country="Germany”

SELECT \* FROM Customers WHERE City NOT IN ('Paris', 'London');

SELECT \* FROM products WHERE NOT price > 50;

4) BETWEEN

SELECT \* FROM products WHERE price BETWEEN 10 AND 60;

SELECT \* FROM order WHERE ord\_date BETWEEN “01-06-2024” AND “31-06-2024”;

5)NUL / NOT NULL

SELECT \* FROM Customers WHERE Address IS NULL;

SELECT \* FROM Customers WHERE Address IS NOT NULL;

6) LIMIT

SELECT \* FROM Customers LIMIT 3;

SELECT \* FROM Customers FETCH FIRST 3 ROWS ONLY;

SELECT TOP 50 PERCENT \* FROM Customers;

SELECT TOP 3 \* FROM Customers WHERE Country='Germany';

SELECT TOP 3 \* FROM Customers ORDER BY CustomerName DESC;

7) Aggregate Function

* MIN() - returns the smallest value within the selected column
* MAX() - returns the largest value within the selected column
* COUNT() - returns the number of rows in a set
* SUM() - returns the total sum of a numerical column
* AVG() - returns the average value of a numerical column

SELECT MIN(Price) FROM Products;

SELECT MIN(Price) AS MIN\_PRICE FROM Products;

SELECT MAX(Price) FROM Products;

SELECT COUNT(**ProductID**) FROM Products;

8) Like

SELECT \* FROM Customers WHERE CustomerName LIKE 'raj%';

SELECT \* FROM Customers WHERE CustomerName LIKE '%aa';

9) Aliases / AS

SELECT CustomerID FROM Customers;

SELECT CustomerID AS ID FROM Customers;