MySql

Create Database:

```
CREATE DATABASE database_name;
CREATE DATABASE tbl_employee;
```

Select Database:

You can use SQL command USE to select a particular database.

```
USE database_name;
```

Show Database:

List all the database in the MySql server host.the syntax is,

```
SHOW DATABASES;
```

Drop Database:

We can drop an existing database in MySql by using ,

```
DROP DATABASE database_name;
```

MSql Tables

Data Types:

MySql uses many different data types broken into three categories,

- Numeric

- Date and Time
- String Types

Create Table:

To begin with,the table creation command requires the following details,

- Name of the Table
- Name of the Fields
- Definition for each field

Syntax For Creating Table:

```
CREATE TABLE table_name(column_name column_type);
```

Syntax For Show Table:

```
SHOW tables;
```

Describe Table Structure:

Syntax For describe table structure,

```
Desc table_name;
```

This comment describes our table structure.

Rename Table:

Syntax for renaming table,

```
RENAME TABLE CURRENT_TABLE_NAME TO NEW TABLE_NAME;
```

```
rename table tbl_employee to tbl_employee1;
```

Drop Table:

Delete table from database.

```
DROP TABLE table_name;
```

```
DROP TABLE Employee;
```

Difference between char and Varchar:

VARCHAR-Dynamic Memory allocation.

CHAR-Static Memory allocation.

Types of SQL Comments:

- DDL
- DML
- TCL

DDL-DATA DEFINITION LANGUAGE:-auto commit

1. CREATE
2. RENAME
3. ALTER
4. DROP
5. TRUNCATE

Usage of Alter Query:

ALTER-To modify the table structure.

1. ADD-alter to add a new column name or table name.

```
alter table tbl_employee1 add gender char(1);
```

2. MODIFY-alter to modify a new column name or table name.

```
alter table tbl_employee1 modify gender varchar(10);
```

3. RENAME-alter to rename a new column name or table name.

```
alter table tbl_employee1 rename column gender to egender;
```

4. DROP-alter to drop a new column name or table name.

```
alter table tbl_employee1 drop column egender;
```

```
drop table tbl_employee1;
```

Code Execution: Code Execution Of MYSQL

DML-DATA MANIPULATION LANGUAGE:-manually commit

1. INSERT
2. DELETE
3. UPDATE

TCL-TRANSACTION CONTROL LANGUAGE:

1. COMMIT
2. ROLLBACK

MySql -Queries

INSERT Query

To insert data into a MYSQL table,you would need to use the INSERT INTO command.

Syntax

```
INSERT INTO table_name(field1,field2…filedN)
VALUES(value1,value2,…..valueN);
```

To insert string data types,it is required to keep all the values into double or single quotes.

NULL-is a not 0 it’s white space

There are two way to declare the null value,
1)declare the null in direct insert.

```
mysql> insert into tbl_employee values(104,null,5000);
```

2)what we have specify in column it will print null

```
mysql> insert into tbl_employee (eid,ename) values(105,'Shaji');
```

```
mysql> select * from tbl_employee;
+------+--------+---------+
| eid  | ename  | esalary |
+------+--------+---------+
|  101 | Jeban  |    2000 |
|  102 | Ignesh |    3000 |
|  103 | Sara   |    3000 |
|  104 | NULL   |    5000 |
|  105 | Shaji  |    NULL |
+------+--------+---------+
5 rows in set (0.00 sec)
```

SELECT Query:

Select data from the table.

The SQL SELECT command is used to fetch data from the MYSQL Table.

Syntax:

```
SELECT field1,field2......fieldN FROM table_name1,table_name2...
[Where Clause]
[OFFSET M][LIMIT  ]
```

Using Where clause:

It displays the table values depending on need.

Syntax:

```
SELECT * FROM TABLE_NAME WHERE Condition;
```

Examples:

- mysql> select * from tbl_employee where esalary>2000;
- mysql> select * from tbl_employee where esalary<2000;
- mysql> select * from tbl_employee where esalary>=2000;
- mysql> select * from tbl_employee where esalary<=2000;

To Select null values in the table:

Syntax:

```
SELECT * FROM TABLE_NAME WHREEN Column name is Null;
```

Example:

```
Select *from tbl_employee where ename is null;
```

To Select NOT NULL values in the table:

Syntax:

```
SELECT * FROM TABLE_NAME WHREEN Column name is NOT Null;
```

Example:

```
Select *from tbl_employee where ename is not null;
```

By using relational operators you cannot compare your null values.

AND Operator :
Retrieve the data if both conditions are true.

QUERY : SELECT * FROM Table_Name WHERE Condition_1 AND Condition_2;

OR Operator :
Retrieve the data if any one of the conditions is true.

QUERY : SELECT * FROM Table_Name WHERE Condition_1 OR Condition_2;

IN Operator :

It displays values in the given id name.

QUERY :

```
SELECT * FROM Table_Name WHERE Coulmn_Name IN
(Value_1,Value_2,....Value_N);
```

NOT IN Operator :

Retrieve the data if the values are not in the listed values.

QUERY :
SELECT * FROM Table_Name WHERE Coulmn_Name NOT IN
(Value_1,Value_2,....Value_N);

BETWEEN Operator :

Retrieve the data if the values are between the given range.

QUERY :

SELECT * FROM Table_Name WHERE Coulmn_Name BETWEEN Value_1 AND Value_2;

NOT BETWEEN Operator :

Retrieve the data if the values are not between the given range.

QUERY :
SELECT * FROM Table_Name WHERE Coulmn_Name NOT BETWEEN Value_1 AND Value_2;

LIKE Operator :

Retrieve the data if the values are like the given pattern.

QUERY :

SELECT * FROM Table_Name WHERE Coulmn_Name LIKE ‘Pattern’;

EX :SELECT * FROM Table_Name WHERE Emp_Name LIKE ‘S%’;

EX :SELECT * FROM Table_Name WHERE Emp_Name LIKE ‘_a%’;

Update Query

There may be a requirement where the existing data in a MySql table needs to be modified.You can do so by using the SQL **UPDATE** command.

This will modify any field value of any MySql table.

Syntax:

```
UPDATE TABLE_NAME SET field1=new-value1,field2=new-value2
[Where Class]
```

Example:

```
UPDATE Employee SET Emp_Salary = 6000 WHERE Emp_Id = 001;
```

- You can Update one or more fields altogether.
- You can specify any condition using the WHERE Clause.

Delete Query:

If you want to delete a record from any MySql table,then you can use the SQL command **DELETE FORM.**

You can use this command at the mysql> prompt as well as in any script like PHP.

Syntax:

```
DELETE FROM table-name[WHERE Clause];
```

- If the WHERE clause is not specified,then all records will be deleted from the given MySql table.
- You can specify any condition using the WHERE clause.
- You can delete records in a single table at a time.
- WHERE Class is very useful when you want to delete tables.

Like Clause:

- If you want to filter out all results ,SQL LIKE Clause along with the WHERE Clause.
- If the SQL LIKE clause is used along with the % character,then it will work like a meta character (*) as in UNIX.

Syntax:

```
SELECT field1,field2,.....fieldN table_name1,table_name2.....
WHERE field1 LIKE condition1 [AND[OR]] field2='some value';
```

- You can specify any condition using the WHERE Class.
- You can use the LIKE clause along with the WHERE clause.
- You can use the LIKE clause in place of the **equals to** sign.
- When LIKE is used along with % sign then it will work like a meta character search.
- You can specify more than one condition using AND or OR operators.
- A WHERE ... .LIKE clauses can be used along with DELETE or UPDATE SQL commands also to specify a condition.

Sorting Results

When you select rows,the MySql server is free to return them in any order,unless you instruct

Syntax:

```
SELECT field1,field2,.....fieldN table_name1,table_name2....
ORDER BY field,[field2....] [ASC[DESC]];
```

- You can sort the returned result on any field,if that field is being listed out.

- You can sort the result on more than one field.
- You can use keywords ASC or DSC to get the result in assenting or dissenting order.by default it is ascending order.

- You can use the WHERE….LIKE clause in the usual way to put a condition.

MySql Null Values:

We have seen the SQL SELECT command along with the WHERE clause to fetch the data from MySql table,but when we try to give a condition ,which compares the field or the column value to NULL ,it does not work.

- **ISNULL**-This operator returns true,if the column value is NULL.
- **IS NOT NULL**-This operator returns true,if the column value is not NULL.
- **< = >**-These operator compares values,which (unlike the = operator) is true even for two Null values.

03/10/2023-Tuesday

Alias in Mysql:

- I will rename the existing column name.
- We can use two types of this Alias one is Readable(use as),another one is Unreadable(use without as).

Readable:

```
select eid as "Employee ID" , ename as "Employee Name" from tbl_employee;
```

Unreadable:

```
select eid  "Employee ID" , ename  "Employee Name" from tbl_employee;
```

Subqueries:

- You can write a query within a query in MySql this is known as subquery or,an inner query or,a nested query.
- Usually,a subquery is embedded within the where clause.
- A subquery is used to return data that will be used in the main query as a condition to further restrict the data to be retrieved.
- Subquery can be used with the SELECT,INSERT,UPDATE and DELETE queries.

Examples:

Query inside the query:

```
select dname from tbl_dept where dno=(select edno from tbl_employee where ename="Jeban");
```

MySql Constraints:- to write rules in particular column

The Constraints in MySql is used to specify the rule that allows or restricts what values/data will be stored in the table.

They provide a suitable method to ensure data accuracy and integrity inside the table.

It also helps to limit the type of data that will be inserted in the table.

Constraints Used in MySql:

- **NOT NULL**
- **CHECK**
- **DEFAULT**

- **PRIMARY KEY**
- **AUTO_INCREMENT**
- **UNIQUE**

  Constraints are used successfully.

GROUP FUNCTIONS:

Group by->Campaign multiple values together.

- **COUNT();--->count the values in the table.**

  Syntax:

  ```
  select count(*) from tbl_employee1;
   select count(*) from tbl_employee1 group by dno ;
  select dno, count(*) from tbl_employee1 group by dno ;
  select dno as "Department No" ,count(*) as "No of Employees" from
  tbl_employee1 group by dno;
  select dno as "Department No" ,count(*) as "No of Employees" from
  tbl_employee1 group by dno order by dno desc;
  ```

- **SUM();--->sum of the table values.**

  ```
  select sum(dno) from tbl_employee1;
  select  count(dno) from tbl_employee1 group by dno ;
  select dno as "Department No" ,sum(esalary) as "Sum of Employee Salary"
  from tbl_employee1 group by dno;
  ```

- **AVG();--->avg of the table values.**

  ```
  select dno as "Department No" ,avg(esalary) as "Average of Employee
  Salary" from tbl_employee1 group by dno;
  ```

- **MIN();--->min of the table values.**

  ```
  select dno as "Department No" ,min(esalary) as "Average of Employee
  Salary" from tbl_employee1 group by dno;
  ```

- **MAX();--->max of the table values.**

  ```
  select dno as "Department No" ,max(esalary) as "Average of Employee
  Salary" from tbl_employee1 group by dno;
  ```

<u>View</u>

- A view is a database object that has no values.Its contents are based on the base table.

- It contains rows and columns similar to the real table.In MySql ,the view is a virtual table created by a query by joining one or more tables.
- It is operated similarly to the base table but does not contain any data of its own.
- The View and table have one main difference that the views are defined on top of other tables (or views).If any changes occur in the underlying table ,the same changes are reflected in the view also.

There are two types in View.

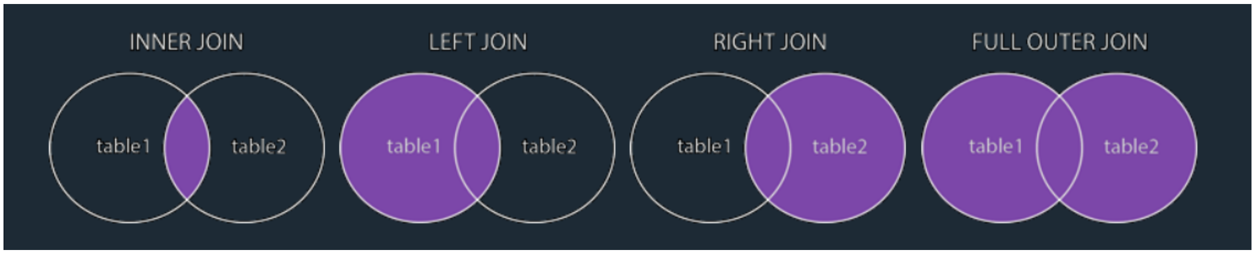
- Simple View.
- Complex View.

Create View: To create new views.

QUERY : CREATE VIEW View_Name AS SELECT Colunm_Name FROM Table_Name WHERE Conditions;

EX : CREATE VIEW My_View AS SELECT * FROM employee1 WHERE Dept_ID = 10;

Joins:



There are two types of Joins.

- Inner Join-Its a default join.

  select a.Agent_Code,a.Agent_Name,c.Customer_Name from tbl_agents a inner join tbl_customers c on a.Working_area=c.Customer_area;

  Equi Join

In that condition we use the equal (=) symbol; it's an Equi join.
Non-Equi Join

Without using (=) symbol and using other operators symbols, it’s called a Non-Equi Join.

- Outer Join
  1. Left Outer Join
  2. Right Outer Join
  3. Full Outer Join