DISTINCT CLAUSE:

It returns all the distinct values (unique values) from the specified column.

Select distinct(col_name) from <tbl_name>;

ORDER BY:

It is used to arrange the records either in the Ascending or Descending Order.

Select * from <tbl_name> order by(col_name) ASC; //ASCENDING

Select * from <tbl_name> order by(col_name) DESC; //DESCENDING

GROUP BY:

It is used to collect or combine data from multiple records.

It is mostly used with the AGGREGATE Functions.

Select count(col_name) from <tbl_name> group by(col_name);

Having clause:

It is used to specify a filter condition with group by clause because where clause is not allowed in the HAVING Clause.

Select count(col_name) from <tbl_name> group by(col_name) having condition;

JOINS:

It is used to retirve the data from two or more tables.

1) ***LEFT JOIN:*** **(LEFT OUTER JOIN)**
   It returns all the records from the left table and only the matching records from the right table.
   Select * from <left-tbl_name>
   Left join <right_tbl_name>
   On <left_tbl.col> = <right_tbl.col>;

2) RIGHT JOIN: (RIGHT OUTER JOIN)
   It returns all the records from the right table and only the matching records from the left table.
   Select * from <left-tbl_name>
   right join <right_tbl_name>
   On <left_tbl.col> = <right_tbl.col>;

3) **INNER JOIN: (JOIN)**
It returns only the matching records from both the tables.
Select * from <left-tbl_name>
join <right_tbl_name>
On <left_tbl.col> = <right_tbl.col>;

AGGREGATE Functions

1) **min():**
It returns the minimum value from the specified column.
Select min(col_name) from <tbl_name>;

2) **max():**
It returns the maximum value from the specified column.
Select max(col_name) from <tbl_name>;

3) **sum():**
It returns us the summation of the values present in the specified column.
Select sum(col_name) from <tbl_name>;

4) **avg():**
It returns the average value of the specified numeric column.
Select avg(col_name) from <tbl_name>;

5) **count():**
It returns the count number of the records or rows.
Select count(col_name) from <tbl_name>;

Enter password: **
Welcome to the MySQL monitor. Commands end with ; or \g.
Your MySQL connection id is 282
Server version: 8.0.26 MySQL Community Server - GPL

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> create database b27new;
Query OK, 1 row affected (0.04 sec)

mysql> use b27new;

```
Database changed
mysql> show tables;
Empty set (0.02 sec)

mysql> create table employee
    -> (
    -> eid int,
    -> name varchar(40),
    -> des varchar(40)
    -> );
Query OK, 0 rows affected (0.08 sec)

mysql> desc employee;
+-------+-------------+------+-----+---------+-------+
| Field | Type        | Null | Key | Default | Extra |
+-------+-------------+------+-----+---------+-------+
| eid   | int         | YES  |     | NULL    |       |
| name  | varchar(40) | YES  |     | NULL    |       |
| des   | varchar(40) | YES  |     | NULL    |       |
+-------+-------------+------+-----+---------+-------+
3 rows in set (0.02 sec)

mysql> insert into employee values
    -> (1, 'Akshay', 'ADMIN'),
    -> (2, 'Vrushal', 'HR'),
    -> (3, 'Vinay', 'IT'),
    -> (4, 'Abhi', 'HR'),
    -> (5, 'Vipul', 'IT'),
    -> (6, 'AKSHAY', 'IT'),
    -> (7, 'Vipul', 'HR'),
    -> (8, 'Akshay', 'Admin'),
    -> (9, 'Vinay', 'HR');
Query OK, 9 rows affected (0.02 sec)
Records: 9  Duplicates: 0  Warnings: 0

mysql> select * from employee;
+------+---------+-------+
| eid  | name    | des   |
+------+---------+-------+
|    1 | Akshay  | ADMIN |
|    2 | Vrushal | HR    |
|    3 | Vinay   | IT    |
|    4 | Abhi    | HR    |
|    5 | Vipul   | IT    |
|    6 | AKSHAY  | IT    |
|    7 | Vipul   | HR    |
|    8 | Akshay  | Admin |
|    9 | Vinay   | HR    |
```

```
+------+---------+-------+
9 rows in set (0.00 sec)

mysql> select distinct(name) from employee;
+---------+
| name    |
+---------+
| Akshay  |
| Vrushal |
| Vinay   |
| Abhi    |
| Vipul   |
+---------+
5 rows in set (0.00 sec)

mysql> select * from employee order by(name);
+------+---------+-------+
| eid  | name    | des   |
+------+---------+-------+
|   4 | Abhi    | HR    |
|   1 | Akshay  | ADMIN |
|   6 | AKSHAY  | IT    |
|   8 | Akshay  | Admin |
|   3 | Vinay   | IT    |
|   9 | Vinay   | HR    |
|   5 | Vipul   | IT    |
|   7 | Vipul   | HR    |
|   2 | Vrushal | HR    |
+------+---------+-------+
9 rows in set (0.00 sec)

mysql> select * from employee order by(des);
+------+---------+-------+
| eid  | name    | des   |
+------+---------+-------+
|   1 | Akshay  | ADMIN |
|   8 | Akshay  | Admin |
|   2 | Vrushal | HR    |
|   4 | Abhi    | HR    |
|   7 | Vipul   | HR    |
|   9 | Vinay   | HR    |
|   3 | Vinay   | IT    |
|   5 | Vipul   | IT    |
|   6 | AKSHAY  | IT    |
+------+---------+-------+
9 rows in set (0.00 sec)

mysql> select * from employee;
```

```
+------+---------+-------+
| eid  | name    | des   |
+------+---------+-------+
|   1 | Akshay  | ADMIN |
|   2 | Vrushal | HR    |
|   3 | Vinay   | IT    |
|   4 | Abhi    | HR    |
|   5 | Vipul   | IT    |
|   6 | AKSHAY  | IT    |
|   7 | Vipul   | HR    |
|   8 | Akshay  | Admin |
|   9 | Vinay   | HR    |
+------+---------+-------+
9 rows in set (0.00 sec)

mysql> select count(name) from employee group by(des);
+-------------+
| count(name) |
+-------------+
|           2 |
|           4 |
|           3 |
+-------------+
3 rows in set (0.00 sec)

mysql> select count(name),des from employee group by(des);
+-------------+-------+
| count(name) | des   |
+-------------+-------+
|           2 | ADMIN |
|           4 | HR    |
|           3 | IT    |
+-------------+-------+
3 rows in set (0.00 sec)

mysql> select count(name),des from employee group by(des) having des='HR';
+-------------+------+
| count(name) | des  |
+-------------+------+
|           4 | HR   |
+-------------+------+
1 row in set (0.00 sec)

mysql> select name,des from employee group by(des) having des='HR';
+---------+------+
| name    | des  |
+---------+------+
| Vrushal | HR   |
```

```
+---------+------+
1 row in set (0.00 sec)

mysql> create table python
   -> 9
   -> ;
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that
corresponds to your MySQL server version for the right syntax to use near '9' at line 2
mysql> create table python
   -> (
   -> rn int,
   -> c_name varchar(40)
   -> );
Query OK, 0 rows affected (0.05 sec)

mysql> create table java
   -> (
   -> rn int,
   -> c_name varchar(40)
   -> );
Query OK, 0 rows affected (0.04 sec)

mysql> desc python;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| rn     | int         | YES  |     | NULL    |       |
| c_name | varchar(40) | YES  |     | NULL    |       |
+--------+-------------+------+-----+---------+-------+
2 rows in set (0.02 sec)

mysql> desc java;
+--------+-------------+------+-----+---------+-------+
| Field  | Type        | Null | Key | Default | Extra |
+--------+-------------+------+-----+---------+-------+
| rn     | int         | YES  |     | NULL    |       |
| c_name | varchar(40) | YES  |     | NULL    |       |
+--------+-------------+------+-----+---------+-------+
2 rows in set (0.00 sec)

mysql> insert into python values
   -> (1, 'PDBC'),
   -> (2, 'SQLALCHEMY'),
   -> (3, 'FLASK'),
   -> (4, 'DJANGO'),
   -> (5, 'BOTTLE'),
   -> (6, 'PYRAMID');
Query OK, 6 rows affected (0.02 sec)
```

```
Records: 6  Duplicates: 0  Warnings: 0

mysql> insert into java values
    -> (4, 'Hibernate'),
    -> (5, 'SPRING'),
    -> (6, 'SPRINGBOOT'),
    -> (7, 'HADOOP'),
    -> (8, 'REST');
Query OK, 5 rows affected (0.02 sec)
Records: 5  Duplicates: 0  Warnings: 0

mysql> select * from python;
+------+------------+
| rn   | c_name     |
+------+------------+
|    1 | PDBC       |
|    2 | SQLALCHEMY |
|    3 | FLASK      |
|    4 | DJANGO     |
|    5 | BOTTLE     |
|    6 | PYRAMID    |
+------+------------+
6 rows in set (0.01 sec)

mysql> select * from java;
+------+------------+
| rn   | c_name     |
+------+------------+
|    4 | Hibernate  |
|    5 | SPRING     |
|    6 | SPRINGBOOT |
|    7 | HADOOP     |
|    8 | REST       |
+------+------------+
5 rows in set (0.01 sec)

mysql>
mysql> select * from python
    -> left join java
    -> on python.rn = java.rn;
+------+------------+------+------------+
| rn   | c_name     | rn   | c_name     |
+------+------------+------+------------+
|    1 | PDBC       | NULL | NULL       |
|    2 | SQLALCHEMY | NULL | NULL       |
|    3 | FLASK      | NULL | NULL       |
|    4 | DJANGO     |    4 | Hibernate  |
|    5 | BOTTLE     |    5 | SPRING     |
```

```
|   6 | PYRAMID    |    6 | SPRINGBOOT |
+------+------------+------+------------+
6 rows in set (0.00 sec)

mysql> select * from java
   -> left join python
   -> on python.rn = java.rn;
+------+------------+------+---------+
| rn   | c_name     | rn   | c_name  |
+------+------------+------+---------+
|   4 | Hibernate  |    4 | DJANGO  |
|   5 | SPRING     |    5 | BOTTLE  |
|   6 | SPRINGBOOT |    6 | PYRAMID |
|   7 | HADOOP     | NULL | NULL    |
|   8 | REST       | NULL | NULL    |
+------+------------+------+---------+
5 rows in set (0.00 sec)

mysql> select 8 from python;
+---+
| 8 |
+---+
| 8 |
| 8 |
| 8 |
| 8 |
| 8 |
| 8 |
+---+
6 rows in set (0.00 sec)

mysql> select * from python;
+------+------------+
| rn   | c_name     |
+------+------------+
|   1 | PDBC       |
|   2 | SQLALCHEMY |
|   3 | FLASK      |
|   4 | DJANGO     |
|   5 | BOTTLE     |
|   6 | PYRAMID    |
+------+------------+
6 rows in set (0.00 sec)

mysql> select * from java;
+------+------------+
| rn   | c_name     |
+------+------------+
```

```
|   4 | Hibernate  |
|   5 | SPRING     |
|   6 | SPRINGBOOT |
|   7 | HADOOP     |
|   8 | REST       |
+------+------------+
5 rows in set (0.00 sec)

mysql> select * from java
    -> right join python
    -> on java.rn = python.rn;
+------+------------+------+------------+
| rn   | c_name     | rn   | c_name     |
+------+------------+------+------------+
| NULL | NULL       |    1 | PDBC       |
| NULL | NULL       |    2 | SQLALCHEMY |
| NULL | NULL       |    3 | FLASK      |
|   4 | Hibernate  |    4 | DJANGO     |
|   5 | SPRING     |    5 | BOTTLE     |
|   6 | SPRINGBOOT |    6 | PYRAMID    |
+------+------------+------+------------+
6 rows in set (0.00 sec)

mysql> select * from python;
+------+------------+
| rn   | c_name     |
+------+------------+
|   1 | PDBC       |
|   2 | SQLALCHEMY |
|   3 | FLASK      |
|   4 | DJANGO     |
|   5 | BOTTLE     |
|   6 | PYRAMID    |
+------+------------+
6 rows in set (0.00 sec)

mysql> select * from java;
+------+------------+
| rn   | c_name     |
+------+------------+
|   4 | Hibernate  |
|   5 | SPRING     |
|   6 | SPRINGBOOT |
|   7 | HADOOP     |
|   8 | REST       |
+------+------------+
5 rows in set (0.00 sec)
```

```
mysql> select * from python
   -> inner join java
   -> on java.rn = python.rn;
+------+---------+------+------------+
| rn   | c_name  | rn   | c_name     |
+------+---------+------+------------+
|    4 | DJANGO  |    4 | Hibernate  |
|    5 | BOTTLE  |    5 | SPRING     |
|    6 | PYRAMID |    6 | SPRINGBOOT |
+------+---------+------+------------+
3 rows in set (0.00 sec)

mysql> select * from java
   -> join python
   -> on java.rn = python.rn;
+------+------------+------+---------+
| rn   | c_name     | rn   | c_name  |
+------+------------+------+---------+
|    4 | Hibernate  |    4 | DJANGO  |
|    5 | SPRING     |    5 | BOTTLE  |
|    6 | SPRINGBOOT |    6 | PYRAMID |
+------+------------+------+---------+
3 rows in set (0.00 sec)

mysql> select * from employee;
+------+---------+-------+
| eid  | name    | des   |
+------+---------+-------+
|    1 | Akshay  | ADMIN |
|    2 | Vrushal | HR    |
|    3 | Vinay   | IT    |
|    4 | Abhi    | HR    |
|    5 | Vipul   | IT    |
|    6 | AKSHAY  | IT    |
|    7 | Vipul   | HR    |
|    8 | Akshay  | Admin |
|    9 | Vinay   | HR    |
+------+---------+-------+
9 rows in set (0.01 sec)

mysql> select min(eid),name,des from employee;
+-----------+--------+-------+
| min(eid)  | name   | des   |
+-----------+--------+-------+
|         1 | Akshay | ADMIN |
+-----------+--------+-------+
1 row in set (0.01 sec)
```

```
mysql> select max(eid),name,des from employee;
+----------+--------+-------+
| max(eid) | name   | des   |
+----------+--------+-------+
|        9 | Akshay | ADMIN |
+----------+--------+-------+
1 row in set (0.00 sec)

mysql> select sum(eid) from employee;
+----------+
| sum(eid) |
+----------+
|       45 |
+----------+
1 row in set (0.01 sec)

mysql> select avg(eid) from employee;
+----------+
| avg(eid) |
+----------+
|   5.0000 |
+----------+
1 row in set (0.00 sec)

mysql> select count(eid) from employee;
+------------+
| count(eid) |
+------------+
|          9 |
+------------+
1 row in set (0.00 sec)

mysql>
mysql> select count(name) from employee;
+-------------+
| count(name) |
+-------------+
|           9 |
+-------------+
1 row in set (0.00 sec)

mysql> select count(des) from employee;
+------------+
| count(des) |
+------------+
|          9 |
+------------+
1 row in set (0.00 sec)
```

```
mysql> select count(des) from employee where des='HR';
+------------+
| count(des) |
+------------+
|          4 |
+------------+
1 row in set (0.00 sec)

mysql>
```