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DML(Data Manipulation Language)

MariaDB [department]> select * from dept;

```
+--------+------------+----------+
| deptno | deptname   | loc      |
+--------+------------+----------+
|     10 | Sales      | Mumbai   |
|     20 | Production | Pune     |
|     30 | Accounts   | Nasik    |
|     40 | Research   | Banglore |
+--------+------------+----------+
```
4 rows in set (0.06 sec)

MariaDB [department]> select * from emp;

```
+-------+----------+----------+--------+--------+
| empno | ename    | job      | deptno | salary |
+-------+----------+----------+--------+--------+
|   101 | Shyam    | Manager  |     10 |  50000 |
|   102 | Dhiraj   | Clerk    |     20 |  12000 |
|   103 | Vinay    | Salesman |     30 |  17000 |
|   104 | Mayur    | Salesman |     40 |  18000 |
|   105 | Sanjay   | Clerk    |    100 |  13000 |
|   106 | Abhishek | Manager  |     10 |  43000 |
+-------+----------+----------+--------+--------+
```
6 rows in set (0.00 sec)

Set Operations: (Union,Union All,Intersect,Minus)

1.Union:

MariaDB [department]> select deptno from emp Union select deptno from dept;

```
+--------+
| deptno |
+--------+
|     10 |
|     20 |
|     30 |
|     40 |
|    100 |
+--------+
```
5 rows in set (0.03 sec)

2.Union All

MariaDB [department]> select deptno from emp Union All select deptno from dept;

```
+--------+
| deptno |
+--------+
|     10 |
|     20 |
|     30 |
|     40 |
|    100 |
|     10 |
|     10 |
|     20 |
|     30 |
|     40 |
+--------+
10 rows in set (0.00 sec)
```

PREDICATES

Comparison predicates

```
+-------+----------+----------+--------+--------+
| empno | ename    | job      | deptno | salary |
+-------+----------+----------+--------+--------+
|   101 | Shyam    | Manager  |     10 | 50000  |
|   102 | Dhiraj   | Clerk    |     20 | 12000  |
|   103 | Vinay    | Salesman |     30 | 17000  |
|   104 | Mayur    | Salesman |     40 | 18000  |
|   105 | Sanjay   | Clerk    |    100 | 13000  |
|   106 | Abhishek | Manager  |     10 | 43000  |
+-------+----------+----------+--------+--------+
```

1.= to predicates

MariaDB [department]> **select * from emp where ename='Shyam';**

```
+-------+-------+---------+--------+--------+
| empno | ename | job     | deptno | salary |
+-------+-------+---------+--------+--------+
|   101 | Shyam | Manager |     10 | 50000  |
+-------+-------+---------+--------+--------+
1 row in set (0.02 sec)
```

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2. <(less than) prdicates

MariaDB [department]> select * from emp where salary<30000;

```
+-------+--------+----------+--------+--------+
| empno | ename  | job      | deptno | salary |
+-------+--------+----------+--------+--------+
|   102 | Dhiraj | Clerk    |     20 | 12000  |
|   103 | Vinay  | Salesman |     30 | 17000  |
|   104 | Mayur  | Salesman |     40 | 18000  |
|   105 | Sanjay | Clerk    |    100 | 13000  |
+-------+--------+----------+--------+--------+
4 rows in set (0.00 sec)
```

3. <= (less than or equal to) predicates:

MariaDB [department]> select * from emp where salary<=30000;

```
+-------+--------+----------+--------+--------+
| empno | ename  | job      | deptno | salary |
+-------+--------+----------+--------+--------+
|   102 | Dhiraj | Clerk    |     20 |  12000 |
|   103 | Vinay  | Salesman |     30 |  17000 |
|   104 | Mayur  | Salesman |     40 |  18000 |
|   105 | Sanjay | Clerk    |    100 |  13000 |
+-------+--------+----------+--------+--------+
4 rows in set (0.00 sec)
```

4. >(greter than) prdicates

MariaDB [department]> select * from emp where salary>30000;

```
+-------+----------+---------+--------+--------+
| empno | ename    | job     | deptno | salary |
+-------+----------+---------+--------+--------+
|   101 | Shyam    | Manager |     10 |  50000 |
|   106 | Abhishek | Manager |     10 |  43000 |
+-------+----------+---------+--------+--------+
2 rows in set (0.00 sec)
```

5. >=(greter than or equal) predicates

MariaDB [department]> select * from emp where salary>=18000;

```
+-------+----------+----------+--------+--------+
| empno | ename    | job      | deptno | salary |
+-------+----------+----------+--------+--------+
|   101 | Shyam    | Manager  |     10 |  50000 |
|   104 | Mayur    | Salesman |     40 |  18000 |
|   106 | Abhishek | Manager  |     10 |  43000 |
+-------+----------+----------+--------+--------+
3 rows in set (0.00 sec)
```

6. <> Not Equal to predicate
MariaDB [department]> select * from emp where salary<>18000;

```
+-------+----------+----------+--------+--------+
| empno | ename    | job      | deptno | salary |
+-------+----------+----------+--------+--------+
|   101 | Shyam    | Manager  |     10 |  50000 |
|   102 | Dhiraj   | Clerk    |     20 |  12000 |
|   103 | Vinay    | Salesman |     30 |  17000 |
|   105 | Sanjay   | Clerk    |    100 |  13000 |
|   106 | Abhishek | Manager  |     10 |  43000 |
+-------+----------+----------+--------+--------+
5 rows in set (0.08 sec)
```

7. Combination of predicates can be used with AND operator
MariaDB [department]> select * from emp where salary >=10000 and salary <=40000;

```
+-------+--------+----------+--------+--------+
| empno | ename  | job      | deptno | salary |
+-------+--------+----------+--------+--------+
|   102 | Dhiraj | Clerk    |     20 |  12000 |
|   103 | Vinay  | Salesman |     30 |  17000 |
|   104 | Mayur  | Salesman |     40 |  18000 |
|   105 | Sanjay | Clerk    |    100 |  13000 |
+-------+--------+----------+--------+--------+
4 rows in set (0.04 sec)
```

BETWEEN PREDICATES

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1. Between predicate is used specify range of values. The and keyword is used in this predicate.

MariaDB [department]> select * from emp where salary between 10000 and 20000;
```
+-------+--------+----------+--------+--------+
| empno | ename  | job      | deptno | salary |
+-------+--------+----------+--------+--------+
|   102 | Dhiraj | Clerk    |     20 |  12000 |
|   103 | Vinay  | Salesman |     30 |  17000 |
|   104 | Mayur  | Salesman |     40 |  18000 |
|   105 | Sanjay | Clerk    |    100 |  13000 |
+-------+--------+----------+--------+--------+
4 rows in set (0.03 sec)
```

----

2. In "Between " predicate the NOT keyword can also used

MariaDB [department]> select * from emp where salary not between 10000 and 20000;
```
+-------+----------+---------+--------+--------+
| empno | ename    | job     | deptno | salary |
+-------+----------+---------+--------+--------+
|   101 | Shyam    | Manager |     10 |  50000 |
|   106 | Abhishek | Manager |     10 |  43000 |
+-------+----------+---------+--------+--------+
2 rows in set (0.00 sec)
```

----

3. In predicate

MariaDB [department]> select * from emp where salary in(12000,13000);
```
+-------+--------+-------+--------+--------+
| empno | ename  | job   | deptno | salary |
+-------+--------+-------+--------+--------+
|   102 | Dhiraj | Clerk |     20 |  12000 |
|   105 | Sanjay | Clerk |    100 |  13000 |
+-------+--------+-------+--------+--------+
2 rows in set (0.04 sec)
```

Like predicate

Example:Display records of employee whose name starts with letter 'S'

MariaDB [department]> select * from emp where ename like 'S%';
```
+-------+--------+---------+--------+--------+
| empno | ename  | job     | deptno | salary |
+-------+--------+---------+--------+--------+
|   101 | Shyam  | Manager |     10 |  50000 |
|   105 | Sanjay | Clerk   |    100 |  13000 |
+-------+--------+---------+--------+--------+
```
2 rows in set (0.01 sec)

Example: Display records of employee whose name ends with letter 'y'
MariaDB [department]> select * from emp where ename like '%y';
```
+-------+--------+----------+--------+--------+
| empno | ename  | job      | deptno | salary |
+-------+--------+----------+--------+--------+
|   103 | Vinay  | Salesman |     30 |  17000 |
|   105 | Sanjay | Clerk    |    100 |  13000 |
+-------+--------+----------+--------+--------+
```
2 rows in set (0.00 sec)

Example:Display records of employee whose name contains 'a' as second character.
MariaDB [department]> select * from emp where ename like '_a%';
```
+-------+--------+----------+--------+--------+
| empno | ename  | job      | deptno | salary |
+-------+--------+----------+--------+--------+
|   104 | Mayur  | Salesman |     40 |  18000 |
|   105 | Sanjay | Clerk    |    100 |  13000 |
+-------+--------+----------+--------+--------+
```
2 rows in set (0.00 sec)

Example:Display record of employee whose name contains character 'A'anywhere.
MariaDB [department]> select * from emp where ename like '%_a%';
```
+-------+--------+----------+--------+--------+
| empno | ename  | job      | deptno | salary |
+-------+--------+----------+--------+--------+
|   101 | Shyam  | Manager  |     10 |  50000 |
|   102 | Dhiraj | Clerk    |     20 |  12000 |
|   103 | Vinay  | Salesman |     30 |  17000 |
|   104 | Mayur  | Salesman |     40 |  18000 |
|   105 | Sanjay | Clerk    |    100 |  13000 |
+-------+--------+----------+--------+--------+
```
5 rows in set (0.00 sec)

IS [NOT] NULL:

Example: Display records of employees who never get any salary

MariaDB [department]> select * from emp where salary is NULL;
Empty set (0.01 sec)

Example: Display records of employees who get salary.

MariaDB [department]> select * from emp where salary is NOT NULL;

```
+-------+----------+----------+--------+--------+
| empno | ename    | job      | deptno | salary |
+-------+----------+----------+--------+--------+
|   101 | Shyam    | Manager  |     10 |  50000 |
|   102 | Dhiraj   | Clerk    |     20 |  12000 |
|   103 | Vinay    | Salesman |     30 |  17000 |
|   104 | Mayur    | Salesman |     40 |  18000 |
|   105 | Sanjay   | Clerk    |    100 |  13000 |
|   106 | Abhishek | Manager  |     10 |  43000 |
+-------+----------+----------+--------+--------+
```
6 rows in set (0.00 sec)

Logical Operators : (AND,OR,NOT,EX-OR)

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1. AND Operator

MariaDB [department]> select * from emp where salary >=10000 && salary <=40000;

```
+-------+--------+----------+--------+--------+
| empno | ename  | job      | deptno | salary |
+-------+--------+----------+--------+--------+
|   102 | Dhiraj | Clerk    |     20 |  12000 |
|   103 | Vinay  | Salesman |     30 |  17000 |
|   104 | Mayur  | Salesman |     40 |  18000 |
|   105 | Sanjay | Clerk    |    100 |  13000 |
+-------+--------+----------+--------+--------+
```
4 rows in set (0.01 sec)

2.OR Operator

MariaDB [department]> select * from emp where salary >=10000 || salary <=40000;

```
+-------+----------+----------+--------+--------+
| empno | ename    | job      | deptno | salary |
+-------+----------+----------+--------+--------+
|   101 | Shyam    | Manager  |     10 |  50000 |
|   102 | Dhiraj   | Clerk    |     20 |  12000 |
|   103 | Vinay    | Salesman |     30 |  17000 |
|   104 | Mayur    | Salesman |     40 |  18000 |
|   105 | Sanjay   | Clerk    |    100 |  13000 |
|   106 | Abhishek | Manager  |     10 |  43000 |
+-------+----------+----------+--------+--------+
```
6 rows in set (0.00 sec)

3.NOT Operator

MariaDB [department]> select * from emp where NOT ename ='Shyam';

empno	ename	job	deptno	salary
102	Dhiraj	Clerk	20	12000
103	Vinay	Salesman	30	17000
104	Mayur	Salesman	40	18000
105	Sanjay	Clerk	100	13000
106	Abhishek	Manager	10	43000

5 rows in set (0.00 sec)