View:

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 definitions built on top of other tables (or views) . If any changes occur in the underlying table, the same changes are reflected in the view also.

Types of View in MySQL:

- Simple View.
- Complex View.

Simple View.

Contains only one single base table or is created from only one table.

```
mysql> create view myview as select * from tbl_employee1 where dno = 10;
Query OK, 0 rows affected (0.03 sec)

mysql> select * from myview;
+-----+--------+--------+------+
| id  | name   | salary | dno  |
+-----+--------+--------+------+
| 101 | Valan  |   3000 |   10 |
| 102 | Naveen |   4000 |   10 |
+-----+--------+--------+------+
2 rows in set (0.00 sec)
```

Update salary in myview:

```
mysql> update myview set salary = 7000 where id = 101;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0

mysql> select * from myview;
+-----+--------+--------+------+
| id  | name   | salary | dno  |
+-----+--------+--------+------+
| 101 | Valan  |   7000 |   10 |
| 102 | Naveen |   4000 |   10 |
+-----+--------+--------+------+
2 rows in set (0.00 sec)
```

Update salary in Base Table (tbl_employee1) :

```
mysql> update tbl_employee1 set salary = null where dno = 10;
Query OK, 2 rows affected (0.01 sec)
Rows matched: 2  Changed: 2  Warnings: 0

mysql> select * from myview;
+-----+--------+--------+------+
| id  | name   | salary | dno  |
+-----+--------+--------+------+
| 101 | Valan  |   NULL |   10 |
| 102 | Naveen |   NULL |   10 |
+-----+--------+--------+------+
2 rows in set (0.00 sec)

mysql> select * from tbl_employee1;
+-----+---------+--------+------+
| id  | name    | salary | dno  |
+-----+---------+--------+------+
| 101 | Valan   |   NULL |   10 |
| 102 | Naveen  |   NULL |   10 |
| 103 | Mahesh  |   5000 |   20 |
| 104 | Gaythri |   6000 |   20 |
| 105 | Aravind |   7000 |   20 |
+-----+---------+--------+------+
5 rows in set (0.00 sec)
```

Joins:

Inner join is the default join , based on the condition the inner join displays the result which it is matched.

Types of Joins:

- Inner Join.
- Outer Join.

4 syntax is possible to apply joins.

1) Table name with where clause.
2) Alias name with where clause.
3) Table name with join and on clause.
4) Alias name with join and on clause.

- **Table name with where clause.(syntax)**

```
mysql> select tbl_agents.Agent_code,tbl_agents.Agent_name,tbl_customers.Customer_name from tbl_agents,tbl_customers where tbl_agents.Working_area =tbl_customers.Custome
r_area;
```

- **Alias name with where clause.(syntax)**

```
mysql> select a.Agent_code,a.Agent_name,c.Customer_name from tbl_agents a,tbl_customers c where a.Working_area =c.Customer_area;
+------------+------------+---------------+
```

- **Table name with join and on clause.(syntax)**

```
mysql> select tbl_agents.Agent_code,tbl_agents.Agent_name,tbl_customers.Customer_name from tbl_agents join tbl_customers on tbl_agents.Working_area =tbl_customers.Custo
mer_area;
+------------+------------+--------------+
```

- **Alias name with join and on clause.(syntax)**

```
mysql> select a.Agent_code,a.Agent_name,c.Customer_name from tbl_agents a join tbl_customers c on a.Working_area =c.Customer_area;
+------------+------------+---------------+
```

Table name with where clause

```
mysql> select tbl_agent.AGENT_CODE,tbl_agent.AGENT_NAME,tbl_customers.CUSTOMER_NAME from tbl_agent,tbl_customers where tbl_agent.WORKING_AREA = tbl_customers.CUSTOMER_AREA;
+------------+------------+--------------+
| AGENT_CODE | AGENT_NAME | CUSTOMER_NAME |
+------------+------------+--------------+
| A102       | agent2     | customer1    |
| A101       | agent1     | customer1    |
| A102       | agent2     | customer2    |
| A101       | agent1     | customer2    |
| A102       | agent2     | customer3    |
| A101       | agent1     | customer3    |
| A104       | agent4     | customer4    |
| A103       | agent3     | customer4    |
| A104       | agent4     | customer5    |
| A103       | agent3     | customer5    |
+------------+------------+--------------+
10 rows in set (0.00 sec)
```

Alias name with where clause:

```
mysql> select a.AGENT_CODE, a.AGENT_NAME, c.CUSTOMER_NAME from tbl_agent a, tbl_customers c  where a.WORKING_AREA = c.CUSTOMER_AREA;
+------------+------------+---------------+
| AGENT_CODE | AGENT_NAME | CUSTOMER_NAME |
+------------+------------+---------------+
| A102       | agent2     | customer1     |
| A101       | agent1     | customer1     |
| A102       | agent2     | customer2     |
| A101       | agent1     | customer2     |
| A102       | agent2     | customer3     |
| A101       | agent1     | customer3     |
| A104       | agent4     | customer4     |
| A103       | agent3     | customer4     |
| A104       | agent4     | customer5     |
| A103       | agent3     | customer5     |
+------------+------------+---------------+
10 rows in set (0.00 sec)
```

Table name with join and on clause:

```
mysql> select tbl_agents.Agent_code,tbl_agents.Agent_name,tbl_customers.Customer_name from tbl_agents join tbl_customers on tbl_agents.Working_area =tbl_customers.Custo
mer_area;
+------------+------------+---------------+
| Agent_code | Agent_name | Customer_name |
+------------+------------+---------------+
| A102       | agent2     | customer1     |
| A101       | agent1     | customer1     |
| A102       | agent2     | customer2     |
| A101       | agent1     | customer2     |
| A102       | agent2     | customer3     |
| A101       | agent1     | customer3     |
| A104       | agent4     | customer4     |
| A103       | agent3     | customer4     |
| A104       | agent4     | customer5     |
| A103       | agent3     | customer5     |
+------------+------------+---------------+
10 rows in set (0.00 sec)
```

Alias name with join and on clause:

```
mysql> select a.AGENT_CODE, a.AGENT_NAME, c.CUSTOMER_NAME from tbl_agent a join tbl_customers c on  a.WORKING_AREA = c.CUSTOMER_AREA;
+------------+------------+---------------+
| AGENT_CODE | AGENT_NAME | CUSTOMER_NAME |
+------------+------------+---------------+
| A102       | agent2     | customer1     |
| A101       | agent1     | customer1     |
| A102       | agent2     | customer2     |
| A101       | agent1     | customer2     |
| A102       | agent2     | customer3     |
| A101       | agent1     | customer3     |
| A104       | agent4     | customer4     |
| A103       | agent3     | customer4     |
| A104       | agent4     | customer5     |
| A103       | agent3     | customer5     |
+------------+------------+---------------+
10 rows in set (0.00 sec)
```

Types of Inner Join:

- Equi Join
- NON-Equi Join

Equi Join:

```
mysql> select a.AGENT_CODE, a.AGENT_NAME, c.CUSTOMER_NAME from tbl_agent a inner join tbl_customers c on  a.WORKING_AREA = c.CUSTOMER_AREA;
+------------+------------+---------------+
| AGENT_CODE | AGENT_NAME | CUSTOMER_NAME |
+------------+------------+---------------+
| A102       | agent2     | customer1     |
| A101       | agent1     | customer1     |
| A102       | agent2     | customer2     |
| A101       | agent1     | customer2     |
| A102       | agent2     | customer3     |
| A101       | agent1     | customer3     |
| A104       | agent4     | customer4     |
| A103       | agent3     | customer4     |
| A104       | agent4     | customer5     |
| A103       | agent3     | customer5     |
+------------+------------+---------------+
10 rows in set (0.00 sec)
```

NON-Equi Join:

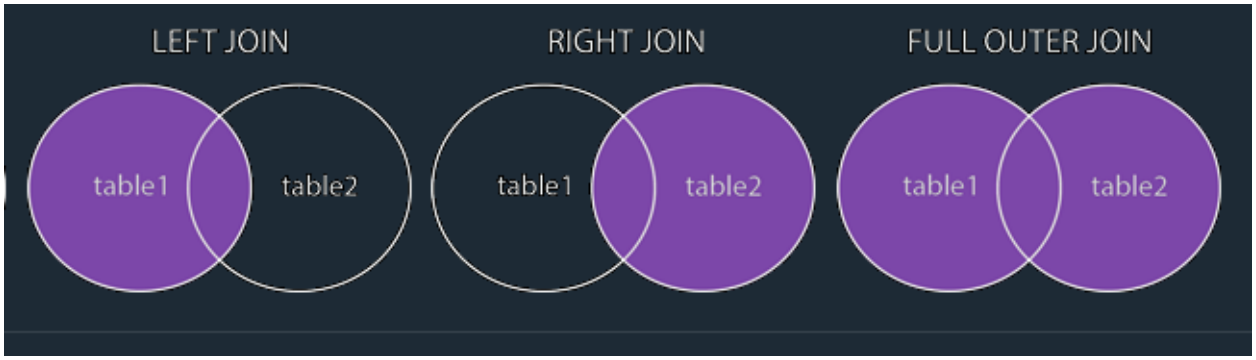
```
mysql> select a.AGENT_CODE, a.AGENT_NAME, c.CUSTOMER_NAME from tbl_agent a inner join tbl_customers c on  a.WORKING_AREA != c.CUSTOMER_AREA;
+------------+------------+---------------+
| AGENT_CODE | AGENT_NAME | CUSTOMER_NAME |
+------------+------------+---------------+
| A104       | agent4     | customer1     |
| A103       | agent3     | customer1     |
| A104       | agent4     | customer2     |
| A103       | agent3     | customer2     |
| A104       | agent4     | customer3     |
| A103       | agent3     | customer3     |
| A102       | agent2     | customer4     |
| A101       | agent1     | customer4     |
| A102       | agent2     | customer5     |
| A101       | agent1     | customer5     |
+------------+------------+---------------+
10 rows in set (0.00 sec)
```

Outer Join:

Types of Outer Join:

- Left Outer Join.
- Right Outer Join.
- Full Outer Join. (MySql does not support Full outer join).
- Cross join.

- `LEFT (OUTER) JOIN`: Returns all records from the left table, and the matched records from the right table
- `RIGHT (OUTER) JOIN`: Returns all records from the right table, and the matched records from the left table
- `FULL (OUTER) JOIN`: Returns all records when there is a match in either left or right table



Left Outer Join.

```
mysql> select * from tbl_agents a left outer join tbl_customers c on a.Working_area= c. Customer_area;
+------------+------------+--------------+---------------+---------------+---------------+
| Agent_code | Agent_name | Working_area | Customer_code | Customer_name | Customer_area |
+------------+------------+--------------+---------------+---------------+---------------+
| A101       | agent1     | chennai      | C103          | customer3     | chennai       |
| A101       | agent1     | chennai      | C102          | customer2     | chennai       |
| A101       | agent1     | chennai      | C101          | customer1     | chennai       |
| A102       | agent2     | chennai      | C103          | customer3     | chennai       |
| A102       | agent2     | chennai      | C102          | customer2     | chennai       |
| A102       | agent2     | chennai      | C101          | customer1     | chennai       |
| A103       | agent3     | Bangalore    | C105          | customer5     | Bangalore     |
| A103       | agent3     | Bangalore    | C104          | customer4     | Bangalore     |
| A104       | agent4     | Bangalore    | C105          | customer5     | Bangalore     |
| A104       | agent4     | Bangalore    | C104          | customer4     | Bangalore     |
| A105       | agent5     | Kolkata      | NULL          | NULL          | NULL          |
+------------+------------+--------------+---------------+---------------+---------------+
11 rows in set (0.02 sec)
```

Right Outer Join:

```
mysql> select * from tbl_agents a right outer join tbl_customers c on a.Working_area= c. Customer_area;
+------------+------------+--------------+---------------+---------------+---------------+
| Agent_code | Agent_name | Working_area | Customer_code | Customer_name | Customer_area |
+------------+------------+--------------+---------------+---------------+---------------+
| A102       | agent2     | chennai      | C101          | customer1     | chennai       |
| A101       | agent1     | chennai      | C101          | customer1     | chennai       |
| A102       | agent2     | chennai      | C102          | customer2     | chennai       |
| A101       | agent1     | chennai      | C102          | customer2     | chennai       |
| A102       | agent2     | chennai      | C103          | customer3     | chennai       |
| A101       | agent1     | chennai      | C103          | customer3     | chennai       |
| A104       | agent4     | Bangalore    | C104          | customer4     | Bangalore     |
| A103       | agent3     | Bangalore    | C104          | customer4     | Bangalore     |
| A104       | agent4     | Bangalore    | C105          | customer5     | Bangalore     |
| A103       | agent3     | Bangalore    | C105          | customer5     | Bangalore     |
| NULL       | NULL       | NULL         | C106          | customer6     | Delhi         |
+------------+------------+--------------+---------------+---------------+---------------+
11 rows in set (0.00 sec)
```

Full Outer Join. (MySql does not support Full outer join).

```
mysql> select * from tbl_agents a full outer join tbl_customers c on a.Working_area= c. Customer_area;
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 'full outer jo
in tbl_customers c on a.Working_area= c. Customer_area' at line 1
mysql>
```

Cross join:

```
mysql> select * from tbl_agents cross join tbl_customers;
+------------+------------+--------------+---------------+---------------+---------------+
| Agent_code | Agent_name | Working_area | Customer_code | Customer_name | Customer_area |
+------------+------------+--------------+---------------+---------------+---------------+
| A105       | agent5     | Kolkata      | C101          | customer1     | chennai       |
| A104       | agent4     | Bangalore    | C101          | customer1     | chennai       |
| A103       | agent3     | Bangalore    | C101          | customer1     | chennai       |
| A102       | agent2     | chennai      | C101          | customer1     | chennai       |
| A101       | agent1     | chennai      | C101          | customer1     | chennai       |
| A105       | agent5     | Kolkata      | C102          | customer2     | chennai       |
| A104       | agent4     | Bangalore    | C102          | customer2     | chennai       |
| A103       | agent3     | Bangalore    | C102          | customer2     | chennai       |
| A102       | agent2     | chennai      | C102          | customer2     | chennai       |
| A101       | agent1     | chennai      | C102          | customer2     | chennai       |
| A105       | agent5     | Kolkata      | C103          | customer3     | chennai       |
| A104       | agent4     | Bangalore    | C103          | customer3     | chennai       |
| A103       | agent3     | Bangalore    | C103          | customer3     | chennai       |
| A102       | agent2     | chennai      | C103          | customer3     | chennai       |
| A101       | agent1     | chennai      | C103          | customer3     | chennai       |
| A105       | agent5     | Kolkata      | C104          | customer4     | Bangalore     |
| A104       | agent4     | Bangalore    | C104          | customer4     | Bangalore     |
| A103       | agent3     | Bangalore    | C104          | customer4     | Bangalore     |
| A102       | agent2     | chennai      | C104          | customer4     | Bangalore     |
| A101       | agent1     | chennai      | C104          | customer4     | Bangalore     |
| A105       | agent5     | Kolkata      | C105          | customer5     | Bangalore     |
| A104       | agent4     | Bangalore    | C105          | customer5     | Bangalore     |
| A103       | agent3     | Bangalore    | C105          | customer5     | Bangalore     |
| A102       | agent2     | chennai      | C105          | customer5     | Bangalore     |
| A101       | agent1     | chennai      | C105          | customer5     | Bangalore     |
| A105       | agent5     | Kolkata      | C106          | customer6     | Delhi         |
| A104       | agent4     | Bangalore    | C106          | customer6     | Delhi         |
| A103       | agent3     | Bangalore    | C106          | customer6     | Delhi         |
| A102       | agent2     | chennai      | C106          | customer6     | Delhi         |
| A101       | agent1     | chennai      | C106          | customer6     | Delhi         |
+------------+------------+--------------+---------------+---------------+---------------+
30 rows in set (0.00 sec)

mysql>
```