Task 5

SQL Joins (Inner, Left, Right, Full)

 Objective: Learn to combine data from multiple tables

Tools : DB Browser for SQLite / MySQL

Workbench Deliverables: SQL queries using all join types

 Create Customers table

```
CREATE TABLE Customers (

    CustomerID INT PRIMARY KEY,

    CustomerName VARCHAR(50),

    Country VARCHAR(50)

);

-- Create Orders table

CREATE TABLE Orders (

    OrderID INT PRIMARY KEY,

    CustomerID INT,

    Product VARCHAR(50),

    FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID)

);

INSERT INTO Customers (CustomerID, CustomerName, Country) VALUES

(1, 'Alice', 'USA'),

(2, 'Bob', 'UK'),(3, 'Charlie', 'Canada'),(4, 'David', 'USA');
```

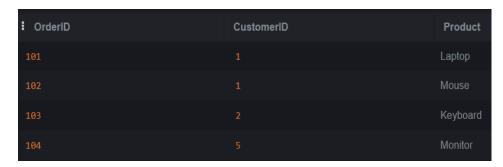| CustomerID	CustomerName	Country
1	Alice	USA
2	Bob	UK
3	Charlie	Canada
4	David	USA

INSERT INTO Orders (OrderID, CustomerID, Product) VALUES

(101, 1, 'Laptop'),

(102, 1, 'Mouse'),

(103, 2, 'Keyboard'),

(104, 5, 'Monitor');

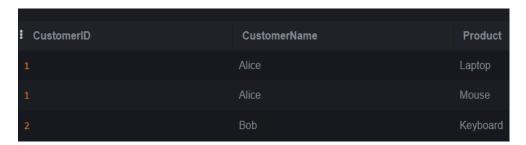| OrderID	CustomerID	Product
101	1	Laptop
102	1	Mouse
103	2	Keyboard
104	5	Monitor

INNER JOIN

SELECT Customers.CustomerID, Customers.CustomerName, Orders.Product
FROM Customers INNER JOIN Orders ON Customers.CustomerID =
Orders.CustomerID;

CustomerID	CustomerName	Product
1	Alice	Laptop
1	Alice	Mouse
2	Bob	Keyboard

LEFT JOIN

SELECT Customers.CustomerID, Customers.CustomerName, Orders.Product

FROM Customers

LEFT JOIN Orders

ON Customers.CustomerID = Orders.CustomerID;

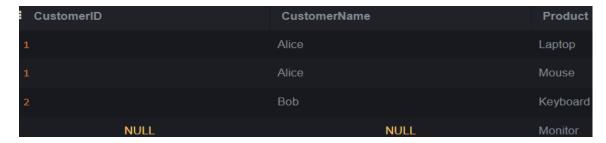| CustomerID	CustomerName	Product
1	Alice	Laptop
1	Alice	Mouse
2	Bob	Keyboard
3	Charlie	NULL
4	David	NULL

RIGHT JOIN

SELECT Customers.CustomerID, Customers.CustomerName, Orders.Product

FROM Customers

RIGHT JOIN Orders

ON Customers.CustomerID = Orders.CustomerID;

CustomerID	CustomerName	Product
1	Alice	Laptop
1	Alice	Mouse
2	Bob	Keyboard
NULL	NULL	Monitor

FULL JOIN

SELECT Customers.CustomerID, Customers.CustomerName, Orders.Product

FROM Customers

FULL OUTER JOIN Orders

ON Customers.CustomerID = Orders.CustomerID;

CustomerID	CustomerName	Product
1	Alice	Laptop
1	Alice	Mouse
2	Bob	Keyboard
3	Charlie	NULL
4	David	NULL
NULL	NULL	Monitor