SQL Intern task-5

NAME : SWETHA R
NUMBER: 6380453779
Email: rswetha2807@gmail.com

Task-5 : SQL Joins (Inner, Left, Right, Full)

Tools Needed:

SQLite doesn't support RIGHT and FULL JOINs directly.
MYSQL Worbench supports all JOIN types.

Create Two Related Tables

- Customers table (customer info)
- Order table (order placed by customers)

```
CREATE TABLE Customers (
      customer _id INTEGER PRIMARY KEY,
      name TEXT,
      city TEXT
);

CREATE TABLE Orders (
       order_id  INTEGER PRIMARY KEY,
       customer _id  INTEGER,
       Product TEXT,
       FOREIGN KEY (xustomer_id) REFERENCES Customers (customer_id)
);
```

Insert Sample Data

```
INSERT INTO Customers VALUES (1, 'Alice', 'Chennai' );
INSERT INTO Customers VALUES (2, 'Bob' , ' Coimbatore' );
INSERT INTO Customers VALUES (3, 'Charlie' , 'Madurai' );

INSERT INTO Orders VALUES ( 101,1, 'Laptop' );
INSERT INTO Orders VALUES  (102, 1, ' Mouse' );
INSERT INTO Orders VALUES (103, 2, 'Keyboard' );
```

INNER JOIN (returns records where there's match in both tables).

```
SELECT Customers.name, Orders.product
FROM Customers
INNER JOIN Orders ON Customers. Customer_id = Orders.customer_id;
```

LEFT JOIN (returns all customers,and the matching orders (if any).
If no order, it shows NULL for product.

```
SELECT Customers.name , Orders. Product
FROM Customers
LEFT JOIN Orders ON Customers.customer_id = Orders.customer_id;
```

RIGHT JOIN (returns all orders, even if no customer match) (Only in MYSQL)

```
SELECT Customers.name , Orders.product
FROM Customers
RIGHT JOIN Order ON Customers.customer_id = Orders.customer_id;
```

FULL JOIN (returns all records from both tables - matches or not)

```
SELECT Customers.name , Orders.product
FROM Customers
FULL OUTER JOIN Order ON Customers.customer_id = Orders.customer_id;
```

**** Simulate FULL JOIN in SQLite****

```
SELECT Customers.name , Orders.product
FROM Customers
LEFT JOIN Order ON Customers.customer_id = Orders.customer_id
UNION
SELECT Customers.name, Orders.product
FROM Customers
RIGHT JOIN Orders ON CUstomers.customer_id = Orders.customer_id;
```

Mastery of Merging Data:

➔ **Combining data from multiple tables** using various types of SQL joins.

- **INNER JOIN** helps fetch only the matching records between two related tables.

- **LEFT JOIN** retrieves all records from the left table and the matched ones from the right, filling in NULLs for unmatched entries.

- **RIGHT JOIN** (tested in MySQL) allows access to all records from the right table and matched records from the left.

- **FULL JOIN** (simulated in SQLite using `LEFT JOIN + UNION`) gives a complete view of all data across both tables, whether or not a match exists.

This was how relational data is merged, analyzed, and interpreted efficiently.