SQL Joins and Queries

Lesson 4: Joins

1. Inner Join: Find Customers Who Ordered a Laptop

```
SELECT c.PhoneNumber
FROM Customers AS c
INNER JOIN Orders AS o ON c.CustomerID = o.CustomerID
WHERE o.ProductName = 'Laptop';
```

2. Creating Tables for SQL Joins

```
CREATE TABLE cricket (
    cricket_id INT AUTO_INCREMENT PRIMARY KEY,
    name VARCHAR(50)
);

CREATE TABLE football (
    football_id INT AUTO_INCREMENT PRIMARY KEY,
    name VARCHAR(50)
);

INSERT INTO cricket (name) VALUES ('John'), ('Michael'), ('David');
INSERT INTO football (name) VALUES ('Michael'), ('David'), ('Chris');

SELECT c.cricket_id, c.name, f.football_id, f.name
FROM cricket AS c
INNER JOIN football AS f ON c.name = f.name;
```

3. Inner Join with classicmodels Database

```
USE classicmodels;
SHOW TABLES;

SELECT p.ProductCode, p.ProductName, pl.TextDescription
FROM products AS p
INNER JOIN productlines AS pl USING(ProductLine);

SELECT o.OrderNumber, o.Status, p.ProductName,
    SUM(od.QuantityOrdered * od.PriceEach) AS revenue
FROM orders AS o
```

```sql
INNER JOIN orderdetails AS od ON o.OrderNumber = od.OrderNumber
INNER JOIN products AS p ON p.ProductCode = od.ProductCode
GROUP BY o.OrderNumber;
```

4. LEFT JOIN: Customers and Orders

```sql
SELECT c.CustomerNumber, c.CustomerName, o.OrderNumber, o.Status
FROM customers AS c
LEFT JOIN orders AS o ON c.CustomerNumber = o.CustomerNumber;
```

5. RIGHT JOIN: Customers and Employees

```sql
SELECT c.CustomerName, c.Phone, e.EmployeeNumber, e.Email
FROM customers AS c
RIGHT JOIN employees AS e
ON e.EmployeeNumber = c.SalesRepEmployeeNumber;
```

6. Employee-Manager Relationship Using INNER JOIN

```sql
SELECT
    CONCAT(m.LastName, ', ', m.FirstName) AS Manager,
    CONCAT(e.LastName, ', ', e.FirstName) AS Employee
FROM employees AS e
INNER JOIN employees AS m
ON m.EmployeeNumber = e.ReportsTo
ORDER BY Manager;
```

7. FULL OUTER JOIN using UNION

```sql
SELECT c.CustomerName, o.OrderNumber
FROM customers AS c
LEFT JOIN orders AS o ON c.CustomerNumber = o.CustomerNumber

UNION

SELECT c.CustomerName, o.OrderNumber
FROM customers AS c
RIGHT JOIN orders AS o ON c.CustomerNumber = o.CustomerNumber;
```