SQL Practice Journey

Lesson 1: SELECT Statement

Table Setup

```
CREATE TABLE Products (
    ProductID INT,
    ProductName VARCHAR(100),
    Category VARCHAR(50),
    Price DECIMAL(10,2),
    Stock INT
);

INSERT INTO Products VALUES
(1, 'Laptop', 'Electronics', 999.99, 15),
(2, 'Mouse', 'Electronics', 25.50, 150),
(3, 'Desk Chair', 'Furniture', 199.99, 45),
(4, 'Monitor', 'Electronics', 299.99, 30),
(5, 'Notebook', 'Stationery', 5.99, 200);
```

Q1: Display all columns from the Products table

SOLUTION:

```
SELECT * FROM Products;
```

Q2: Display only ProductName and Price

SOLUTION:

```
SELECT ProductName, Price FROM Products;
```

Q3: Display only the Category column

SOLUTION:

```
SELECT Category FROM Products;
```

Q4: Show ProductID, ProductName, and Stock

SOLUTION:

```
SELECT ProductID, ProductName, Stock FROM Products;
```

Q5: Display all product information

SOLUTION:

```
SELECT * FROM Products;
```

Lesson 2: WHERE Clause

Q1: Find products where Price is less than 50

SOLUTION:

```
SELECT * FROM Products WHERE Price < 50;
```

Q2: Show ProductName and Category where Stock is >= 100

SOLUTION:

```
SELECT ProductName, Category FROM Products WHERE Stock >= 100;
```

Q3: Find all products in Furniture category

SOLUTION:

```
SELECT * FROM Products WHERE Category = 'Furniture';
```

Q4: Find products where Price is exactly 299.99

SOLUTION:

```
SELECT * FROM Products WHERE Price = 299.99;
```

Q5: Show products where Category is NOT Stationery

SOLUTION:

```
SELECT * FROM Products WHERE Category != 'Stationery';
```

Lesson 3: Logical Operators

Q1: Find Electronics products with Stock > 20

SOLUTION:

```
SELECT * FROM Products WHERE Category = 'Electronics' AND Stock > 20;
```

Q2: Find products where Price < 30 OR Stock < 50

SOLUTION:

```
SELECT * FROM Products WHERE Price < 30 OR Stock < 50;
```

Q3: Find products NOT in Electronics AND Price > 100

SOLUTION:

```
SELECT * FROM Products WHERE NOT Category = 'Electronics' AND Price > 100;
```

Q4: Find Furniture products OR products where Price > 500

SOLUTION:

```
SELECT * FROM Products WHERE Category = 'Furniture' OR Price > 500;
```

Q5: Find (Electronics with Price < 100) OR Stationery products

SOLUTION:

```
SELECT * FROM Products WHERE Category = 'Electronics' AND Price < 100 OR Category = 'Stationery';
```

Lesson 4: Operator Precedence

Table Setup

```
CREATE TABLE Employees (
    EmployeeID INT,
    Name VARCHAR(100),
    Department VARCHAR(50),
    Salary DECIMAL(10,2),
    YearsOfExperience INT,
    City VARCHAR(50)
);

INSERT INTO Employees VALUES
(1, 'Alice Johnson', 'IT', 85000, 5, 'New York'),
(2, 'Bob Smith', 'HR', 60000, 3, 'Chicago'),
(3, 'Charlie Brown', 'IT', 95000, 8, 'New York'),
(4, 'Diana Prince', 'Sales', 70000, 4, 'Los Angeles'),
(5, 'Eve Davis', 'IT', 55000, 2, 'Chicago'),
(6, 'Frank Miller', 'Sales', 80000, 6, 'New York'),
(7, 'Grace Lee', 'HR', 65000, 5, 'Los Angeles'),
(8, 'Henry Wilson', 'Finance', 90000, 7, 'New York'),
(9, 'Ivy Chen', 'Finance', 75000, 4, 'Chicago'),
(10, 'Jack Taylor', 'Sales', 62000, 3, 'Los Angeles');
```

Q1: Find IT employees earning > 80000 OR Sales employees

SOLUTION (WITHOUT PARENTHESES):

```
SELECT * FROM Employees
WHERE Department = 'IT' AND Salary > 80000 OR Department = 'Sales';
```

SOLUTION (WITH PARENTHESES FOR CLARITY):

```
SELECT * FROM Employees
WHERE (Department = 'IT' AND Salary > 80000) OR Department = 'Sales';
```

Q2: Find IT or Finance employees in New York earning > 70000

SOLUTION:

```
SELECT * FROM Employees
WHERE (Department = 'IT' OR Department = 'Finance') AND (Salary > 70000 AND City = 'New York');
```

Q3: Find non-HR employees with Salary > 75000 OR Experience > 5

SOLUTION:

```
SELECT * FROM Employees
WHERE NOT Department = 'HR' AND (Salary > 75000 OR YearsOfExperience > 5);
```

Q4: Find IT in New York OR Sales > 70000 OR Experience >= 7

SOLUTION:

```
SELECT * FROM Employees
WHERE (Department = 'IT' AND City = 'New York') OR (Department = 'Sales' AND Salary > 70000) OR YearsOfExperience >= 7;
```

Q5: Find Finance employees OR Chicago employees earning < 70000

SOLUTION:

```
SELECT * FROM Employees
WHERE Department = 'Finance' OR City = 'Chicago' AND Salary < 70000;
```

Progress: 20/20 Questions Completed ✓