

# SQL ASSIGNMENT 1

Creating DataBase

```
mysql> CREATE DATABASE TechShop;  
Query OK, 1 row affected (0.02 sec)  
  
mysql> Use Techshop;  
Database changed
```

Creating Tables

```
mysql> CREATE TABLE Customers (  
-> CustomerID INT PRIMARY KEY,  
-> FirstName VARCHAR(50),  
-> LastName VARCHAR(50),  
-> Email VARCHAR(100),  
-> Phone VARCHAR(20),  
-> Address VARCHAR(255)  
-> );  
Query OK, 0 rows affected (0.04 sec)  
  
mysql> CREATE TABLE Products (  
-> ProductID INT PRIMARY KEY,  
-> ProductName VARCHAR(100),  
-> Description TEXT,  
-> Price DECIMAL(10, 2)  
-> );  
Query OK, 0 rows affected (0.05 sec)  
  
mysql> CREATE TABLE Orders (  
-> OrderID INT PRIMARY KEY,  
-> CustomerID INT,  
-> OrderDate DATE,  
-> TotalAmount DECIMAL(10, 2),  
-> FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID)  
-> );  
Query OK, 0 rows affected (0.04 sec)  
  
mysql> CREATE TABLE OrderDetails (  
-> OrderDetailID INT PRIMARY KEY,  
-> OrderID INT,  
-> ProductID INT,  
-> Quantity INT,  
-> FOREIGN KEY (OrderID) REFERENCES Orders(OrderID),  
-> FOREIGN KEY (ProductID) REFERENCES Products(ProductID)  
-> );  
Query OK, 0 rows affected (0.05 sec)
```

```
mysql> CREATE TABLE Inventory (
  ->     InventoryID INT PRIMARY KEY,
  ->     ProductID INT,
  ->     QuantityInStock INT,
  ->     LastStockUpdate DATETIME,
  ->     FOREIGN KEY (ProductID) REFERENCES Products(ProductID)
  -> );
Query OK, 0 rows affected (0.04 sec)
```

Task 1:

Inserting Values

```
mysql> INSERT INTO Customers (CustomerID, FirstName, LastName, Email, Phone, Address)
  -> VALUES
  ->     (1, 'John', 'Doe', 'john.doe@email.com', '1234567890', '123 Main St'),
  ->     (2, 'Jane', 'Smith', 'jane.smith@email.com', '9876543210', '456 Oak St'),
  ->     (3, 'Rajesh', 'Kumar', 'rajesh.kumar@email.com', '7890123456', '567 Coconut
St, Chennai'),
  ->     (4, 'Priya', 'Sundaram', 'priya.sundaram@email.com', '2345678901', '789 Bana
na St, Hyderabad'),
  ->     (5, 'Karthik', 'Venkataraman', 'karthik.venkat@email.com', '4567890123', '89
0 Mango St, Bangalore'),
  ->     (6, 'Aishwarya', 'Natarajan', 'aishwarya.nat@email.com', '1232345678', '123
Pineapple St, Coimbatore'),
  ->     (7, 'Ganesh', 'Iyer', 'ganesh.iyer@email.com', '5678901234', '234 Papaya St,
Mysuru'),
  ->     (8, 'Meera', 'Srinivasan', 'meera.srini@email.com', '9012345678', '345 Guava
St, Trivandrum'),
  ->     (9, 'Suresh', 'Rajagopal', 'suresh.raj@email.com', '3456789012', '456 Apple
St, Kochi'),
  ->     (10, 'Deepa', 'Ganesan', 'deepa.gan@email.com', '6789012345', '567 Orange St
, Mangalore');
Query OK, 10 rows affected (0.02 sec)
Records: 10 Duplicates: 0 Warnings: 0
```

```
mysql> INSERT INTO Products (ProductID, ProductName, Description, Price)
  -> VALUES
  ->     (1, 'Laptop', 'High-performance laptop', 999.99),
  ->     (2, 'Smartphone', 'Latest smartphone model', 699.99),
  ->     (3, 'Tablet', 'High-quality tablet', 499.99),
  ->     (4, 'Smartwatch', 'Fitness and health tracker', 199.99),
  ->     (5, 'Desktop', 'Powerful desktop computer', 1299.99),
  ->     (6, 'Camera', 'Professional-grade camera', 799.99);
Query OK, 6 rows affected (0.01 sec)
```

```
mysql>     (7, 'Tablet', 'High-quality tablet', 499.99),
  ->     (8, 'Smartwatch', 'Fitness and health tracker', 199.99),
  ->     (9, 'Desktop', 'Powerful desktop computer', 1299.99),
  ->     (10, 'Camera', 'Professional-grade camera', 799.99);
```

```

mysql> INSERT INTO Orders (OrderID, CustomerID, OrderDate, TotalAmount)
-> VALUES
-> (1, 1, '2023-01-01', 1500.00),
-> (2, 2, '2023-02-15', 1200.00),
-> (3, 3, '2023-03-10', 699.99),
-> (4, 4, '2023-04-20', 1599.99),
-> (5, 5, '2023-05-15', 899.99),
-> (6, 6, '2023-06-25', 499.99),
-> (7, 7, '2023-03-10', 699.99),
-> (8, 8, '2023-04-20', 1599.99),
-> (9, 9, '2023-05-15', 899.99),
-> (10, 10, '2023-06-25', 499.99);
Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0

mysql> INSERT INTO OrderDetails (OrderDetailID, OrderID, ProductID, Quantity)
-> VALUES
-> (1, 1, 1, 2),
-> (2, 1, 2, 1),
-> (3, 3, 3, 1),
-> (4, 4, 4, 2),
-> (5, 5, 5, 1),
-> (6, 6, 6, 1),
-> (7, 7, 7, 2),
-> (8, 8, 8, 1),
-> (9, 9, 9, 1),
-> (10, 10, 10, 2);
Query OK, 10 rows affected (0.01 sec)
Records: 10 Duplicates: 0 Warnings: 0

mysql> INSERT INTO Inventory (InventoryID, ProductID, QuantityInStock, LastStockUpdate)
-> VALUES
-> (1, 1, 50, '2023-01-01'),
-> (2, 2, 100, '2023-02-01'),
-> (3, 3, 20, '2023-03-01'),
-> (4, 4, 30, '2023-04-01'),
-> (5, 5, 15, '2023-05-01'),
-> (6, 6, 25, '2023-06-01'),
-> (7, 7, 20, '2023-03-01'),
-> (8, 8, 30, '2023-04-01'),
-> (9, 9, 15, '2023-05-01'),
-> (10, 10, 25, '2023-06-01');
Query OK, 10 rows affected (0.00 sec)

```

Task 2:

1. Write an SQL query to retrieve the names and emails of all customers

```
mysql> SELECT FirstName, LastName, Email
-> FROM Customers;
```

FirstName	LastName	Email
John	Doe	john.doe@email.com
Jane	Smith	jane.smith@email.com
Rajesh	Kumar	rajesh.kumar@email.com
Priya	Sundaram	priya.sundaram@email.com
Karthik	Venkataraman	karthik.venkat@email.com
Aishwarya	Natarajan	aishwarya.nat@email.com
Ganesh	Iyer	ganesh.iyer@email.com
Meera	Srinivasan	meera.srini@email.com
Suresh	Rajagopal	suresh.raj@email.com
Deepa	Ganesan	deepa.gan@email.com

10 rows in set (0.01 sec)

2. Write an SQL query to list all orders with their order dates and corresponding customer names

```
mysql> SELECT Orders.OrderID, OrderDate, CONCAT(FirstName, ' ', LastName) AS CustomerName
-> FROM Orders
-> JOIN Customers ON Orders.CustomerID = Customers.CustomerID;
```

OrderID	OrderDate	CustomerName
1	2023-01-01	John Doe
2	2023-02-15	Jane Smith
3	2023-03-10	Rajesh Kumar
4	2023-04-20	Priya Sundaram
5	2023-05-15	Karthik Venkataraman
6	2023-06-25	Aishwarya Natarajan
7	2023-03-10	Ganesh Iyer
8	2023-04-20	Meera Srinivasan
9	2023-05-15	Suresh Rajagopal
10	2023-06-25	Deepa Ganesan

10 rows in set (0.01 sec)

3. Write an SQL query to insert a new customer record into the "Customers" table. Include customer information such as name, email, and address.

```
mysql> INSERT INTO Customers(CustomerID, FirstName, LastName, Email, Phone, Address)
-> VALUES (11, 'Anusha', 'Chavva', 'Email', '1234567890', '123 ABC st');
Query OK, 1 row affected (0.01 sec)
```

4. Write an SQL query to update the prices of all electronic gadgets in the "Products" table by increasing them by 10%.

```
mysql> UPDATE Products
  -> SET Price = Price * 1.1
  -> WHERE Description = 'High-quality tablet';
Query OK, 2 rows affected, 2 warnings (0.01 sec)
Rows matched: 2  Changed: 2  Warnings: 2
```

5. Write an SQL query to delete a specific order and its associated order details from the "Orders" and "OrderDetails" tables. Allow users to input the order ID as a parameter.

```
mysql> INSERT INTO Orders (OrderID, CustomerID, OrderDate, TotalAmount)
  -> VALUES (11, 3, '2023-07-01', 1299.99);
Query OK, 1 row affected (0.01 sec)
```

6. Write an SQL query to update the contact information (e.g., email and address) of a specific customer in the "Customers" table. Allow users to input the customer ID and new contact information.

```
mysql> UPDATE Customers
  -> SET Email = 'new.email@email.com', Address = '456 Updated St'
  -> WHERE CustomerID = 1;
Query OK, 1 row affected (0.01 sec)
Rows matched: 1  Changed: 1  Warnings: 0
```

7. Write an SQL query to recalculate and update the total cost of each order in the "Orders" table based on the prices and quantities in the "OrderDetails" table.

```
mysql> UPDATE Orders
  -> SET TotalAmount = (
  ->   SELECT SUM(Quantity * Price)
  ->   FROM OrderDetails
  ->   JOIN Products ON OrderDetails.ProductID = Products.ProductID
  ->   WHERE OrderDetails.OrderID = Orders.OrderID
  -> )
  -> ;
Query OK, 11 rows affected (0.01 sec)
Rows matched: 11  Changed: 11  Warnings: 0
```

8. Write an SQL query to delete all orders and their associated order details for a specific customer from the "Orders" and "OrderDetails" tables. Allow users to input the customer ID as a parameter.

```
mysql> DELETE FROM OrderDetails WHERE OrderID IN (SELECT OrderID FROM Orders WHERE CustomerID = 3);
Query OK, 1 row affected (0.01 sec)

mysql> DELETE FROM Orders WHERE CustomerID = 3;
Query OK, 2 rows affected (0.00 sec)
```

9. Write an SQL query to insert a new electronic gadget product into the "Products" table.

```
mysql> INSERT INTO Products (ProductID, ProductName, Description, Price)
  -> VALUES (11, 'Phone', 'Smart Phone', 499.99);
Query OK, 1 row affected (0.00 sec)
```

Task 3:

1. Write an SQL query to retrieve a list of all orders along with customer information (e.g.. customer name) for each order.

```
SELECT Orders.OrderID, OrderDate, CONCAT(FirstName, ' ', LastName) AS CustomerName
mysql> SELECT Orders.OrderID, OrderDate, CONCAT(FirstName, ' ', LastName) AS CustomerName
me
-> FROM Orders
-> JOIN Customers ON Orders.CustomerID = Customers.CustomerID;
```

OrderID	OrderDate	CustomerName
1	2023-01-01	John Doe
2	2023-02-15	Jane Smith
4	2023-04-20	Priya Sundaram
5	2023-05-15	Karthik Venkataraman
6	2023-06-25	Aishwarya Natarajan
7	2023-03-10	Ganesh Iyer
8	2023-04-20	Meera Srinivasan
9	2023-05-15	Suresh Rajagopal
10	2023-06-25	Deepa Ganesan

9 rows in set (0.00 sec)

2. Write an SQL query to find the total revenue generated by each electronic gadget product. Include the product name and the total revenue.

```
mysql> SELECT Products.ProductID, ProductName, SUM(Quantity * Price) AS TotalRevenue
-> FROM OrderDetails
-> JOIN Products ON OrderDetails.ProductID = Products.ProductID
-> WHERE Products.Description = 'High-quality tablet'
-> GROUP BY Products.ProductID, ProductName;
```

ProductID	ProductName	TotalRevenue
7	Tablet	1099.98

1 row in set (0.00 sec)

3. Write an SQL query to list all customers who have made at least one purchase. Include their names and contact information.

```
mysql> SELECT DISTINCT Customers.CustomerID, FirstName, LastName, Email, Phone, Address
    -> FROM Customers
    -> JOIN Orders ON Customers.CustomerID = Orders.CustomerID;
```

CustomerID	FirstName	LastName	Email	Phone	Address
1	John	Doe	new.email@email.com	1234567890	456 U
2	Jane	Smith	jane.smith@email.com	9876543210	456 O
4	Priya	Sundaram	priya.sundaram@email.com	2345678901	789 B
5	Karthik	Venkataraman	karthik.venkat@email.com	4567890123	890 M
6	Aishwarya	Natarajan	aishwarya.nat@email.com	1232345678	123 P
7	Ganesh	Iyer	ganesh.iyer@email.com	5678901234	234 P
8	Meera	Srinivasan	meera.srini@email.com	9012345678	345 G
9	Suresh	Rajagopal	suresh.raj@email.com	3456789012	456 A
10	Deepa	Ganesan	deepa.gan@email.com	6789012345	567 O

```
9 rows in set (0.00 sec)
```

4. Write an SQL query to find the most popular electronic gadget, which is the one with the highest total quantity ordered. Include the product name and the total quantity ordered.

```
mysql> SELECT TOP 1 Products.ProductID, ProductName, SUM(Quantity) AS TotalQuantityOrdered
    -> FROM OrderDetails
    -> JOIN Products ON OrderDetails.ProductID = Products.ProductID
    -> WHERE Products.Category = 'Electronic Gadgets'
    -> GROUP BY Products.ProductID, ProductName
    -> ORDER BY TotalQuantityOrdered DESC;
```

5. Write an SQL query to retrieve a list of electronic gadgets along with their corresponding categories.

```
mysql> SELECT Orders.CustomerID, FirstName, LastName, AVG(TotalAmount) AS AverageOrderValue
    -> FROM Orders
    -> JOIN Customers ON Orders.CustomerID = Customers.CustomerID
    -> GROUP BY Orders.CustomerID, FirstName, LastName;
```

CustomerID	FirstName	LastName	AverageOrderValue
1	John	Doe	2699.970000
2	Jane	Smith	NULL
4	Priya	Sundaram	399.980000
5	Karthik	Venkataraman	1299.990000
6	Aishwarya	Natarajan	799.990000
7	Ganesh	Iyer	1099.980000
8	Meera	Srinivasan	199.990000
9	Suresh	Rajagopal	1299.990000
10	Deepa	Ganesan	1599.980000

```
9 rows in set (0.00 sec)
```

6. Write an SQL query to calculate the average order value for each customer. Include the customer's name and their average order value.

```
mysql> SELECT Products.ProductID, ProductName, SUM(Quantity * Price) AS TotalRevenue
-> FROM OrderDetails
-> JOIN Products ON OrderDetails.ProductID = Products.ProductID
-> WHERE Products.Description = 'High-performance laptop'
-> GROUP BY Products.ProductID, ProductName;
```

ProductID	ProductName	TotalRevenue
1	Laptop	1999.98

1 row in set (0.00 sec)

7. Write an SQL query to find the order with the highest total revenue. Include the order ID, customer information, and the total revenue.

```
mysql> SELECT Products.ProductID, ProductName, COUNT(OrderDetails.OrderID) AS OrderCount
-> FROM Products
-> LEFT JOIN OrderDetails ON Products.ProductID = OrderDetails.ProductID
-> WHERE Products.Description = 'High-quality tablet'
-> GROUP BY Products.ProductID, ProductName;
```

ProductID	ProductName	OrderCount
3	Tablet	0
7	Tablet	1

2 rows in set (0.00 sec)

8. Write an SQL query to list electronic gadgets and the number of times each product has been ordered.

```
mysql> SELECT TOP 1 OrderID, OrderDate, CONCAT(FirstName, ' ', LastName) AS CustomerName, TotalAmount
-> FROM Orders
-> JOIN Customers ON Orders.CustomerID = Customers.CustomerID
-> ORDER BY TotalAmount DESC;
```

9. Write an SQL query to find customers who have purchased a specific electronic gadget product. Allow users to input the product name as a parameter.

```
mysql> SELECT DISTINCT Customers.CustomerID, FirstName, LastName, Email, Phone, Address
-> FROM Customers
-> JOIN Orders ON Customers.CustomerID = Orders.CustomerID
-> JOIN OrderDetails ON Orders.OrderID = OrderDetails.OrderID
-> JOIN Products ON OrderDetails.ProductID = Products.ProductID
-> WHERE Products.ProductName = 'Laptop';
```

CustomerID	FirstName	LastName	Email	Phone	Address
1	John	Doe	new.email@email.com	1234567890	456 Updated St

1 row in set (0.00 sec)



Task 4:

1. Write an SQL query to find out which customers have not placed any orders.

```
mysql> SELECT Customers.CustomerID, Customers.FirstName, Customers.LastName
-> FROM Customers
-> LEFT JOIN Orders ON Customers.CustomerID = Orders.CustomerID
-> WHERE Orders.OrderID IS NULL;
+-----+-----+-----+
| CustomerID | FirstName | LastName |
+-----+-----+-----+
|          3 | Rajesh   | Kumar    |
|         11 | Anusha   | Chavva   |
+-----+-----+-----+
2 rows in set (0.03 sec)
```

2. Write an SQL query to find the total number of products available for sale.

```
mysql> SELECT COUNT(*) AS TotalProducts
-> FROM Products;
+-----+
| TotalProducts |
+-----+
|             11 |
+-----+
1 row in set (0.01 sec)
```

3. Write an SQL query to calculate the total revenue generated by TechShop.

```
mysql> SELECT SUM(TotalAmount) AS TotalRevenue
-> FROM Orders;
+-----+
| TotalRevenue |
+-----+
|       9399.87 |
+-----+
1 row in set (0.00 sec)
```

4. Write an SQL query to calculate the average quantity ordered for products in a specific category. Allow users to input the category name as a parameter.

```
mysql> SELECT AVG(Quantity) AS AverageQuantity
-> FROM OrderDetails
-> JOIN Products ON OrderDetails.ProductID = Products.ProductID
-> WHERE Products.Description = 'Electronics';
+-----+
| AverageQuantity |
+-----+
|             NULL |
+-----+
1 row in set (0.00 sec)
```

5. Write an SQL query to calculate the total revenue generated by a specific customer. Allow users to input the customer ID as a parameter.

```
mysql> SELECT SUM(TotalAmount) AS TotalRevenue
-> FROM Orders
-> WHERE CustomerID = 1;
+-----+
| TotalRevenue |
+-----+
|      2699.97 |
+-----+
1 row in set (0.00 sec)
```

6. Write an SQL query to find the customers who have placed the most orders. List their names and the number of orders they've placed.

```
mysql> SELECT TOP 1 Customers.FirstName, Customers.LastName, COUNT(Orders.OrderID) AS OrderCount
-> FROM Customers
-> LEFT JOIN Orders ON Customers.CustomerID = Orders.CustomerID
-> GROUP BY Customers.CustomerID, Customers.FirstName, Customers.LastName
-> ORDER BY OrderCount DESC;
```

7. Write an SQL query to find the most popular product category, which is the one with the highest total quantity ordered across all orders.

```
mysql> SELECT TOP 1 Products.CategoryName, SUM(OrderDetails.Quantity) AS TotalQuantityOrdered
-> FROM OrderDetails
-> JOIN Products ON OrderDetails.ProductID = Products.ProductID
-> GROUP BY Products.CategoryName
-> ORDER BY TotalQuantityOrdered DESC;
```

8. Write an SQL query to find the customer who has spent the most money (highest total revenue) on electronic gadgets. List their name and total spending.

```
mysql> SELECT TOP 1 Customers.FirstName, Customers.LastName, SUM(OrderDetails.Quantity * Products.Price) AS TotalSpending
-> FROM Customers
-> JOIN Orders ON Customers.CustomerID = Orders.CustomerID
-> JOIN OrderDetails ON Orders.OrderID = OrderDetails.OrderID
-> JOIN Products ON OrderDetails.ProductID = Products.ProductID
-> WHERE Products.CategoryName = 'Electronics'
-> GROUP BY Customers.CustomerID, Customers.FirstName, Customers.LastName
-> ORDER BY TotalSpending DESC;
```

9. Write an SQL query to calculate the average order value (total revenue divided by the number of orders) for all customers.

```
mysql> SELECT AVG(TotalAmount) AS AverageOrderValue
-> FROM Orders;
+-----+
| AverageOrderValue |
+-----+
|      1174.983750 |
+-----+
1 row in set (0.00 sec)
```

10. Write an SQL query to find the total number of orders placed by each customer and list their names along with the order count.

```
mysql> SELECT Customers.FirstName, Customers.LastName, COUNT(Orders.OrderID) AS OrderCount
      -> FROM Customers
      -> LEFT JOIN Orders ON Customers.CustomerID = Orders.CustomerID
      -> GROUP BY Customers.CustomerID, Customers.FirstName, Customers.LastName;
```

FirstName	LastName	OrderCount
John	Doe	1
Jane	Smith	1
Rajesh	Kumar	0
Priya	Sundaram	1
Karthik	Venkataraman	1
Aishwarya	Natarajan	1
Ganesh	Iyer	1
Meera	Srinivasan	1
Suresh	Rajagopal	1
Deepa	Ganesan	1
Anusha	Chavva	0

```
11 rows in set (0.01 sec)
```