

SQL ASSIGNMENT 1

NAME : VENKATA SAI SUKHESH

CREATING DATABASE :

CREATE THE DATABASE NAMED 'TECH SHOP'

```
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.

