Vijay R

Superset ID: 5371616

Saveetha Engineering College

TechShop, an electronic gadgets shop

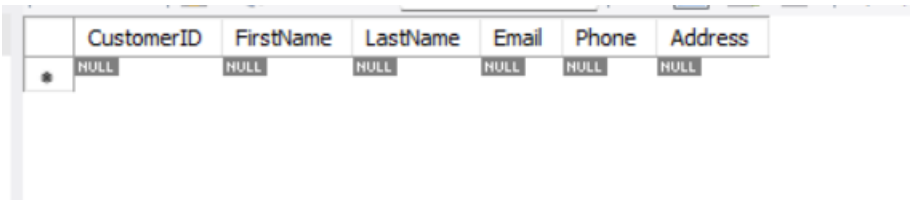
Task:1. Database Design:

1.Creating Database:

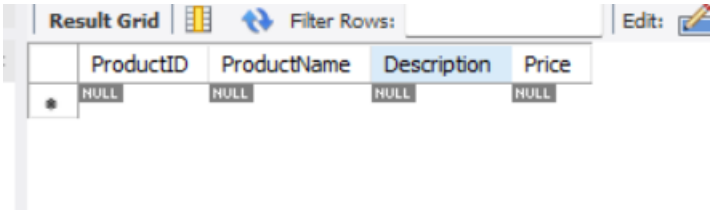
```
CREATE DATABASE TechGadgetShop;
USE TechGadgetShop;
```

2.Tables:

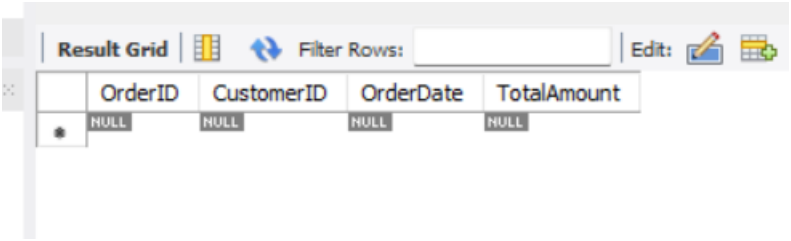
```
CREATE TABLE Customers (
    CustomerID INT AUTO_INCREMENT PRIMARY KEY,
    FirstName VARCHAR(50) NOT NULL,
    LastName VARCHAR(50) NOT NULL,
    Email VARCHAR(100) UNIQUE NOT NULL,
    Phone VARCHAR(15) NOT NULL,
    Address TEXT NOT NULL
);
```



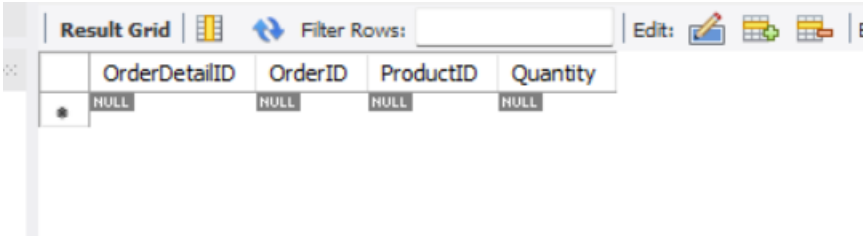
```
CREATE TABLE Products (
    ProductID INT AUTO_INCREMENT PRIMARY KEY,
    ProductName VARCHAR(100) NOT NULL,
    Description TEXT,
    Price DECIMAL(10,2) NOT NULL
);
```



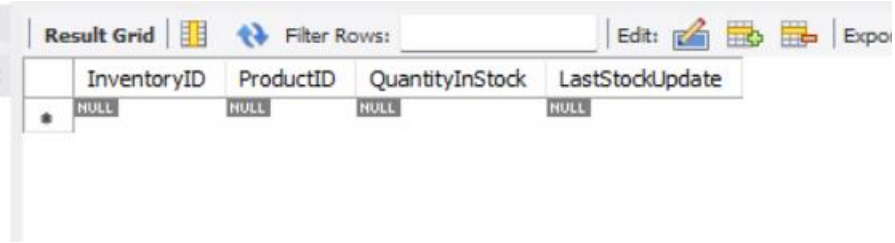

```
CREATE TABLE Orders (
    OrderID INT AUTO_INCREMENT PRIMARY KEY,
    CustomerID INT NOT NULL,
    OrderDate DATE NOT NULL,
    TotalAmount DECIMAL(10,2) NOT NULL,
    FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID) ON DELETE CASCADE
);
```



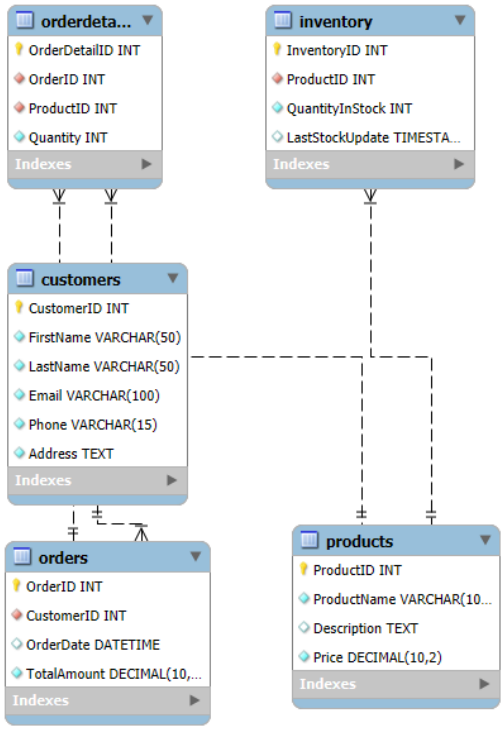

```
CREATE TABLE OrderDetails (
    OrderDetailID INT AUTO_INCREMENT PRIMARY KEY,
    OrderID INT NOT NULL,
    ProductID INT NOT NULL,
    Quantity INT NOT NULL CHECK (Quantity > 0),
    FOREIGN KEY (OrderID) REFERENCES Orders(OrderID) ON DELETE CASCADE,
    FOREIGN KEY (ProductID) REFERENCES Products(ProductID) ON DELETE CASCADE);
```




```
CREATE TABLE Inventory (
    InventoryID INT AUTO_INCREMENT PRIMARY KEY,
    ProductID INT NOT NULL,
    QuantityInStock INT NOT NULL CHECK (QuantityInStock >= 0),
    LastStockUpdate DATE NOT NULL,
    FOREIGN KEY (ProductID) REFERENCES Products(ProductID) ON DELETE
CASCADE
);
```



3. Create an ERD (Entity Relationship Diagram) for the database.



4. Insert at least 10 sample records into each of the following tables.

INSERT INTO Customers (FirstName, LastName, Email, Phone, Address) VALUES

('Steve', 'John', 'steve.john@email.com', '9876543210', '123 Main St, NY'),

('Mark', 'Smith', 'mark.smith@email.com', '9876543211', '456 Last St, LA'),

('Kelly', 'Brown', 'kelly.brown@email.com', '9876543212', '789 Pine St, SF'),

('Mohamad', 'Sherif', 'sherif.m345@email.com', '9876543213', '101 Broadway St, TX'),

('David', 'Raj', 'david.rr45@email.com', '9876543214', '202 Paris St, FL'),

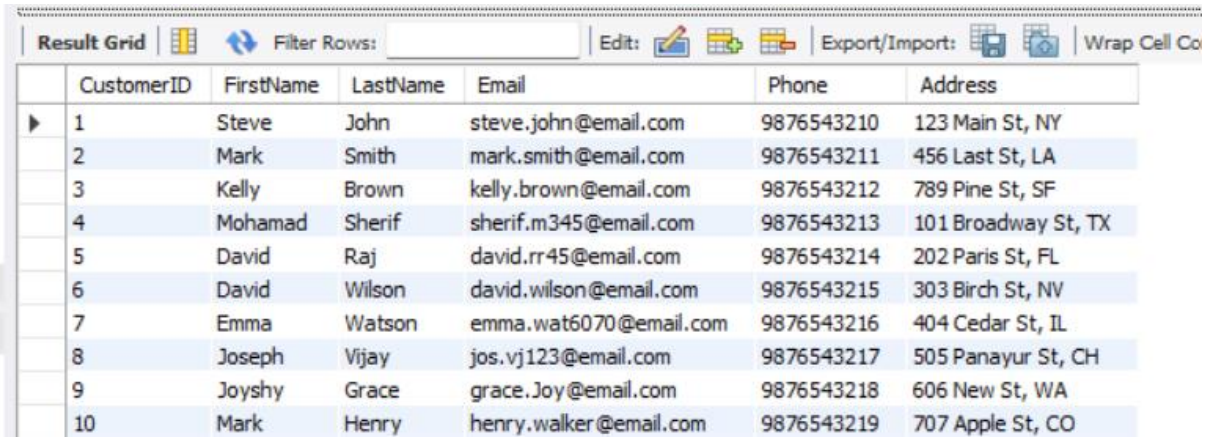
('David', 'Wilson', 'david.wilson@email.com', '9876543215', '303 Birch St, NV'),

('Emma', 'Watson', 'emma.wat6070@email.com', '9876543216', '404 Cedar St, IL'),

('Joseph', 'Vijay', 'jos.vj123@email.com', '9876543217', '505 Panayur St, CH'),

('Joyshy', 'Grace', 'grace.Joy@email.com', '9876543218', '606 New St, WA'),

('Mark', 'Henry', 'henry.walker@email.com', '9876543219', '707 Apple St, CO');



CustomerID	FirstName	LastName	Email	Phone	Address
1	Steve	John	steve.john@email.com	9876543210	123 Main St, NY
2	Mark	Smith	mark.smith@email.com	9876543211	456 Last St, LA
3	Kelly	Brown	kelly.brown@email.com	9876543212	789 Pine St, SF
4	Mohamad	Sherif	sherif.m345@email.com	9876543213	101 Broadway St, TX
5	David	Raj	david.rr45@email.com	9876543214	202 Paris St, FL
6	David	Wilson	david.wilson@email.com	9876543215	303 Birch St, NV
7	Emma	Watson	emma.wat6070@email.com	9876543216	404 Cedar St, IL
8	Joseph	Vijay	jos.vj123@email.com	9876543217	505 Panayur St, CH
9	Joyshy	Grace	grace.Joy@email.com	9876543218	606 New St, WA
10	Mark	Henry	henry.walker@email.com	9876543219	707 Apple St, CO

INSERT INTO Products (ProductName, Description, Price) VALUES

('Smartphone', 'Latest Android smartphone', 699.99),

('Laptop', '15-inch gaming laptop', 1299.49),

('Tablet', '10-inch display tablet', 399.99),

('Smartwatch', 'Water-resistant smartwatch', 199.99),

('Bluetooth Speaker', 'Portable speaker', 99.99),

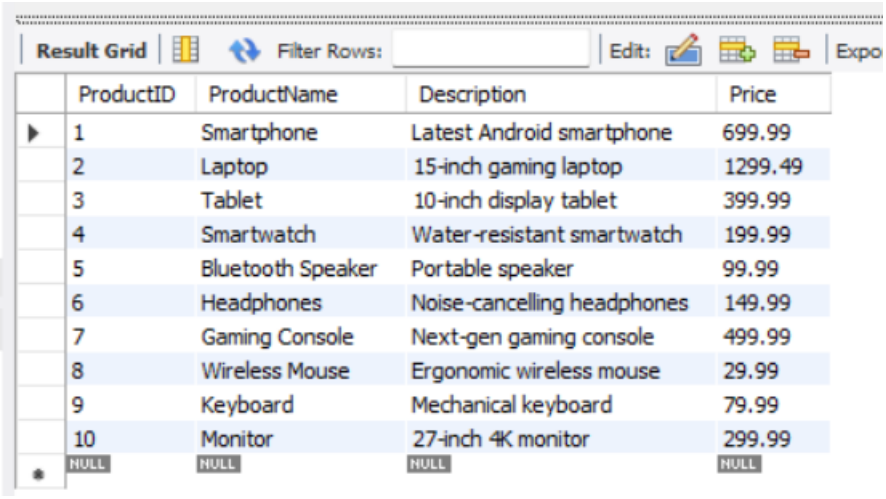
('Headphones', 'Noise-cancelling headphones', 149.99),

('Gaming Console', 'Next-gen gaming console', 499.99),

('Wireless Mouse', 'Ergonomic wireless mouse', 29.99),

('Keyboard', 'Mechanical keyboard', 79.99),

('Monitor', '27-inch 4K monitor', 299.99);



Result Grid | Filter Rows: | Edit: | Expo

ProductID	ProductName	Description	Price
1	Smartphone	Latest Android smartphone	699.99
2	Laptop	15-inch gaming laptop	1299.49
3	Tablet	10-inch display tablet	399.99
4	Smartwatch	Water-resistant smartwatch	199.99
5	Bluetooth Speaker	Portable speaker	99.99
6	Headphones	Noise-cancelling headphones	149.99
7	Gaming Console	Next-gen gaming console	499.99
8	Wireless Mouse	Ergonomic wireless mouse	29.99
9	Keyboard	Mechanical keyboard	79.99
10	Monitor	27-inch 4K monitor	299.99
NULL	NULL	NULL	NULL

INSERT INTO Orders (CustomerID, OrderDate, TotalAmount) VALUES

(1, '2024-01-01', 999.99),

(2, '2024-01-05', 699.99),

(3, '2024-02-10', 1299.49),

(4, '2024-02-12', 1499.99),

(5, '2024-04-15', 399.99),

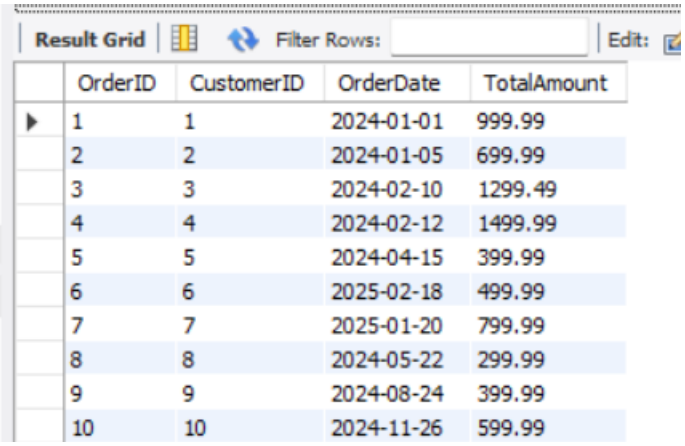
(6, '2025-02-18', 499.99),

(7, '2025-01-20', 799.99),

(8, '2024-05-22', 299.99),

(9, '2024-08-24', 399.99),

(10, '2024-11-26', 599.99);



Result Grid | Filter Rows: | Edit:

OrderID	CustomerID	OrderDate	TotalAmount
1	1	2024-01-01	999.99
2	2	2024-01-05	699.99
3	3	2024-02-10	1299.49
4	4	2024-02-12	1499.99
5	5	2024-04-15	399.99
6	6	2025-02-18	499.99
7	7	2025-01-20	799.99
8	8	2024-05-22	299.99
9	9	2024-08-24	399.99
10	10	2024-11-26	599.99

INSERT INTO OrderDetails (OrderID, ProductID, Quantity) VALUES

(1, 1, 1),

(2, 2, 1),

(3, 3, 5),

(4, 4, 1),

(5, 5, 3),

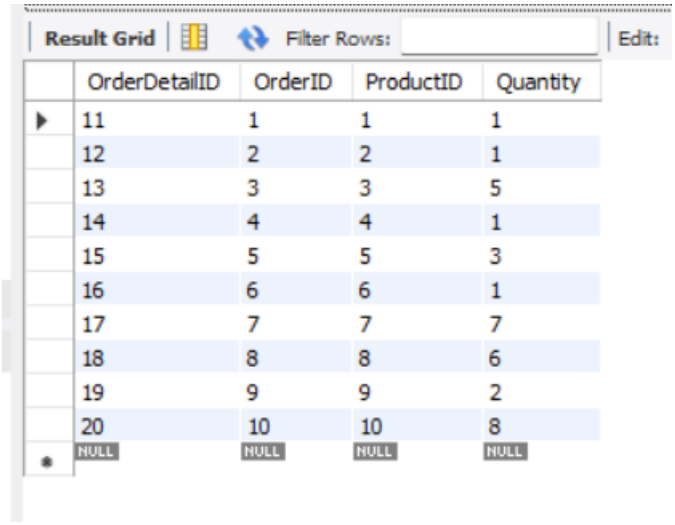
(6, 6, 1),

(7, 7, 7),

(8, 8, 6),

(9, 9, 2),

(10, 10, 8);



Result Grid | Filter Rows: | Edit:

OrderDetailID	OrderID	ProductID	Quantity
11	1	1	1
12	2	2	1
13	3	3	5
14	4	4	1
15	5	5	3
16	6	6	1
17	7	7	7
18	8	8	6
19	9	9	2
20	10	10	8
NULL	NULL	NULL	NULL

INSERT INTO Inventory (ProductID, QuantityInStock, LastStockUpdate) VALUES

(1, 50, '2024-08-30'),

(2, 30, '2024-03-29'),

(3, 40, '2024-01-28'),

(4, 25, '2024-06-27'),

(5, 60, '2025-01-26'),

(6, 35, '2025-02-25'),

(7, 20, '2025-01-24'),

(8, 45, '2024-11-23'),

(9, 55, '2024-09-22'),

(10, 15, '2025-03-21');

InventoryID	ProductID	QuantityInStock	LastStockUpdate
1	1	50	2024-08-30
2	2	30	2024-03-29
3	3	40	2024-01-28
4	4	25	2024-06-27
5	5	60	2025-01-26
6	6	35	2025-02-25
7	7	20	2025-01-24
8	8	45	2024-11-23
9	9	55	2024-09-22
10	10	15	2025-03-21
NULL	NULL	NULL	NULL

Tasks 2: Select, Where, Between, AND, LIKE:

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

SELECT FirstName, LastName, Email FROM Customers;

Result Grid | Filter Rows: | Export

FirstName	LastName	Email
Steve	John	steve.john@email.com
Mark	Smith	mark.smith@email.com
Kelly	Brown	kelly.brown@email.com
Mohamad	Sherif	sherif.m345@email.com
David	Raj	david.rr45@email.com
David	Wilson	david.wilson@email.com
Emma	Watson	emma.wat6070@email.com
Joseph	Vijay	jos.vj123@email.com
Joyshy	Grace	grace.Joy@email.com
Mark	Henry	henry.walker@email.com

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

SELECT Orders.OrderID, Orders.OrderDate, Customers.FirstName, Customers.LastName

FROM Orders

JOIN Customers ON Orders.CustomerID = Customers.CustomerID;

Result Grid | Filter Rows: | Ex

OrderID	OrderDate	FirstName	LastName
1	2024-01-01	Steve	John
2	2024-01-05	Mark	Smith
3	2024-02-10	Kelly	Brown
4	2024-02-12	Mohamad	Sherif
5	2024-04-15	David	Raj
6	2025-02-18	David	Wilson
7	2025-01-20	Emma	Watson
8	2024-05-22	Joseph	Vijay
9	2024-08-24	Joyshy	Grace
10	2024-11-26	Mark	Henry

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

INSERT INTO Customers (FirstName, LastName, Email, Phone, Address)

VALUES ('Sunil', 'Roa', 'sunil.roa@email.com', '9876543220', '1725 5th Ave, London');

CustomerID	FirstName	LastName	Email	Phone	Address
1	Steve	John	steve.john@email.com	9876543210	123 Main St, NY
2	Mark	Smith	mark.smith@email.com	9876543211	456 Last St, LA
3	Kelly	Brown	kelly.brown@email.com	9876543212	789 Pine St, SF
4	Mohamad	Sherif	sherif.m345@email.com	9876543213	101 Broadway St, TX
5	David	Raj	david.rr45@email.com	9876543214	202 Paris St, FL
6	David	Wilson	david.wilson@email.com	9876543215	303 Birch St, NV
7	Emma	Watson	emma.wat6070@email.com	9876543216	404 Cedar St, IL
8	Joseph	Vijay	jos.vj123@email.com	9876543217	505 Panayur St, CH
9	Joyshy	Grace	grace.Joy@email.com	9876543218	606 New St, WA
10	Mark	Henry	henry.walker@email.com	9876543219	707 Apple St, CO
11	Sunil	Roa	sunil.roa@email.com	9876543220	1725 5th Ave, London
NULL	NULL	NULL	NULL	NULL	NULL

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

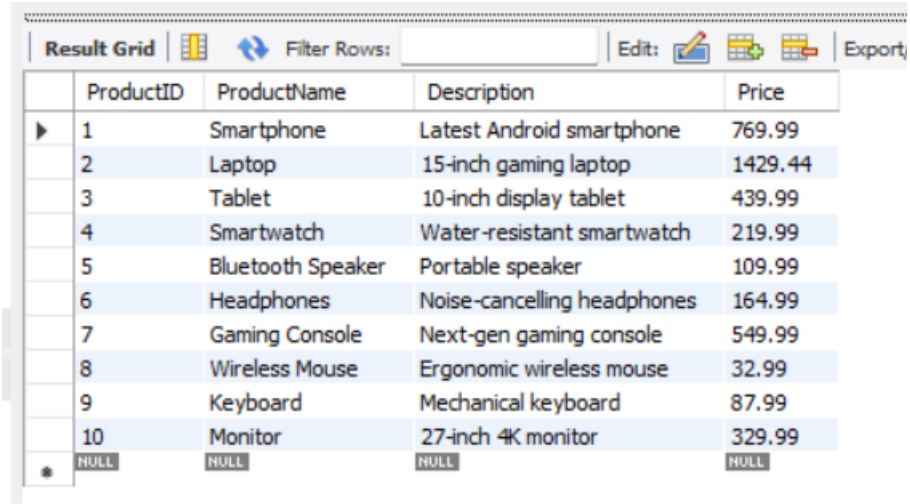
ALTER TABLE Products MODIFY COLUMN Price DECIMAL(10,2);

SET SQL_SAFE_UPDATES = 0;

UPDATE Products

SET Price = ROUND(Price * 1.10, 2)

WHERE EXISTS (SELECT 1 FROM (SELECT ProductID FROM Products) AS tmp
WHERE tmp.ProductID = Products.ProductID);



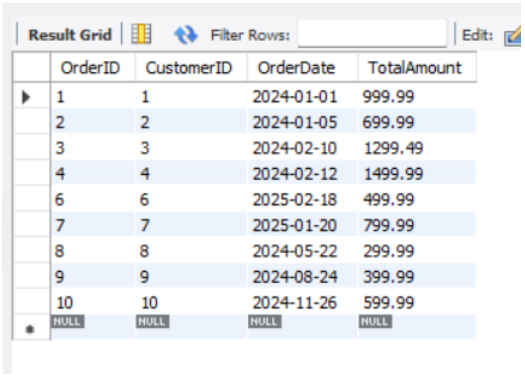
Result Grid | Filter Rows: | Edit: | Export

ProductID	ProductName	Description	Price
1	Smartphone	Latest Android smartphone	769.99
2	Laptop	15-inch gaming laptop	1429.44
3	Tablet	10-inch display tablet	439.99
4	Smartwatch	Water-resistant smartwatch	219.99
5	Bluetooth Speaker	Portable speaker	109.99
6	Headphones	Noise-cancelling headphones	164.99
7	Gaming Console	Next-gen gaming console	549.99
8	Wireless Mouse	Ergonomic wireless mouse	32.99
9	Keyboard	Mechanical keyboard	87.99
10	Monitor	27-inch 4K monitor	329.99
NULL	NULL	NULL	NULL

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.

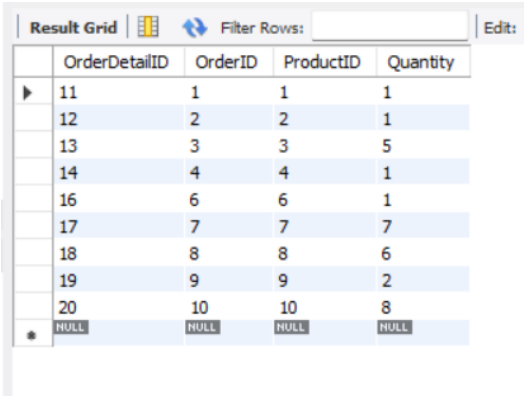
DELETE FROM Orders WHERE OrderID = 5;

DELETE FROM OrderDetails WHERE OrderID = 5;



Result Grid | Filter Rows: | Edit:

OrderID	CustomerID	OrderDate	TotalAmount
1	1	2024-01-01	999.99
2	2	2024-01-05	699.99
3	3	2024-02-10	1299.49
4	4	2024-02-12	1499.99
6	6	2025-02-18	499.99
7	7	2025-01-20	799.99
8	8	2024-05-22	299.99
9	9	2024-08-24	399.99
10	10	2024-11-26	599.99
NULL	NULL	NULL	NULL



Result Grid | Filter Rows: | Edit:

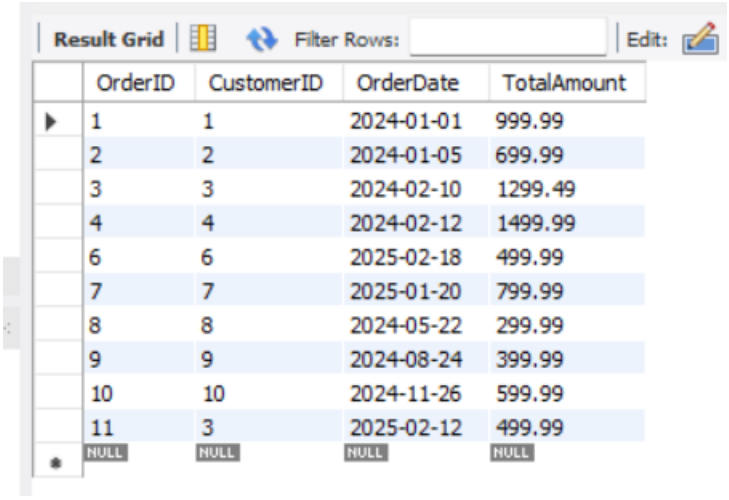
OrderDetailID	OrderID	ProductID	Quantity
11	1	1	1
12	2	2	1
13	3	3	5
14	4	4	1
16	6	6	1
17	7	7	7
18	8	8	6
19	9	9	2
20	10	10	8
NULL	NULL	NULL	NULL

6. Write an SQL query to insert a new order into the "Orders" table. Include the customer ID, order date, and any other necessary information

INSERT INTO Orders (CustomerID, OrderDate, TotalAmount)

VALUES (3, '2025-02-12', 499.99);

SELECT * from Orders;



Result Grid | Filter Rows: | Edit:

OrderID	CustomerID	OrderDate	TotalAmount
1	1	2024-01-01	999.99
2	2	2024-01-05	699.99
3	3	2024-02-10	1299.49
4	4	2024-02-12	1499.99
6	6	2025-02-18	499.99
7	7	2025-01-20	799.99
8	8	2024-05-22	299.99
9	9	2024-08-24	399.99
10	10	2024-11-26	599.99
11	3	2025-02-12	499.99
NULL	NULL	NULL	NULL

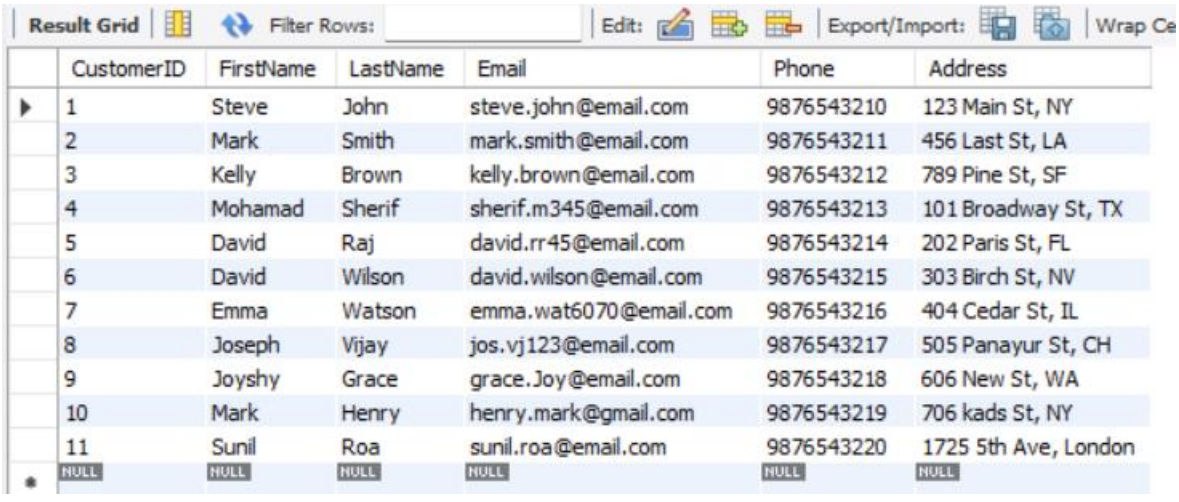
7. Write an SQL query to update the contact information (e.g., email and address) of a specific customer in the "Customers" table. Allow users to input the customer ID and new contact information.

UPDATE Customers

SET Email = 'henry.mark@gmail.com', Address = '706 kads St, NY'

WHERE CustomerID = 10;

SELECT * from Customers;



Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Ce

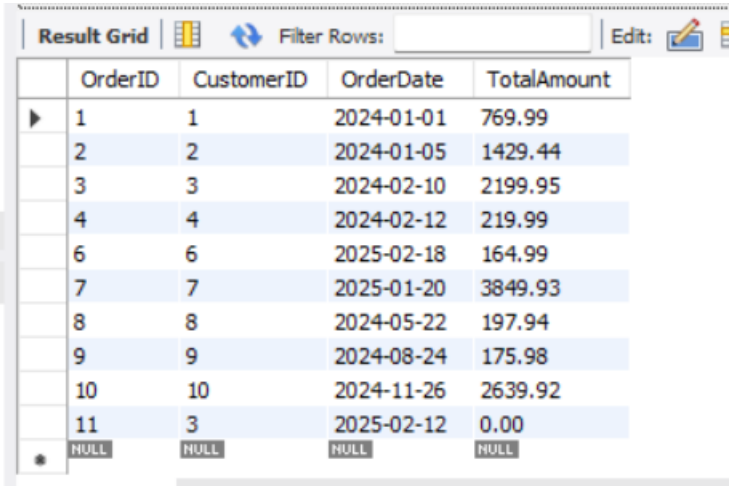
CustomerID	FirstName	LastName	Email	Phone	Address
1	Steve	John	steve.john@email.com	9876543210	123 Main St, NY
2	Mark	Smith	mark.smith@email.com	9876543211	456 Last St, LA
3	Kelly	Brown	kelly.brown@email.com	9876543212	789 Pine St, SF
4	Mohamad	Sherif	sherif.m345@email.com	9876543213	101 Broadway St, TX
5	David	Raj	david.rr45@email.com	9876543214	202 Paris St, FL
6	David	Wilson	david.wilson@email.com	9876543215	303 Birch St, NV
7	Emma	Watson	emma.wat6070@email.com	9876543216	404 Cedar St, IL
8	Joseph	Vijay	jos.vj123@email.com	9876543217	505 Panayur St, CH
9	Joyshy	Grace	grace.Joy@email.com	9876543218	606 New St, WA
10	Mark	Henry	henry.mark@gmail.com	9876543219	706 kads St, NY
11	Sunil	Roa	sunil.roa@email.com	9876543220	1725 5th Ave, London
NULL	NULL	NULL	NULL	NULL	NULL

8. 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.

UPDATE Orders o

SET o.TotalAmount = (

```
    SELECT IFNULL(SUM(od.Quantity * p.Price), 0)
    FROM OrderDetails od
    JOIN Products p ON od.ProductID = p.ProductID
    WHERE od.OrderID = o.OrderID
);
```



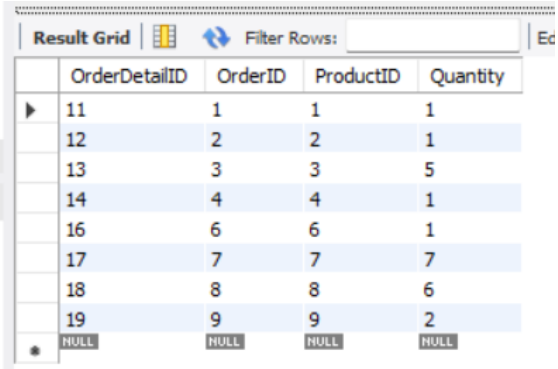
Result Grid | Filter Rows: | Edit:

OrderID	CustomerID	OrderDate	TotalAmount
1	1	2024-01-01	769.99
2	2	2024-01-05	1429.44
3	3	2024-02-10	2199.95
4	4	2024-02-12	219.99
6	6	2025-02-18	164.99
7	7	2025-01-20	3849.93
8	8	2024-05-22	197.94
9	9	2024-08-24	175.98
10	10	2024-11-26	2639.92
11	3	2025-02-12	0.00
NULL	NULL	NULL	NULL

9. 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.

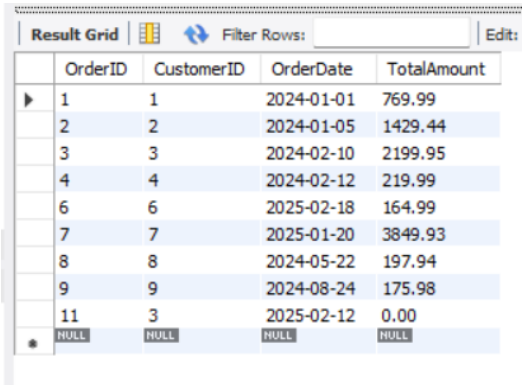
DELETE FROM OrderDetails WHERE OrderID IN (SELECT OrderID FROM Orders WHERE CustomerID = 10);

DELETE FROM Orders WHERE CustomerID = 10;



Result Grid | Filter Rows: | Ed

OrderDetailID	OrderID	ProductID	Quantity
11	1	1	1
12	2	2	1
13	3	3	5
14	4	4	1
16	6	6	1
17	7	7	7
18	8	8	6
19	9	9	2
NULL	NULL	NULL	NULL



Result Grid | Filter Rows: | Edit:

OrderID	CustomerID	OrderDate	TotalAmount
1	1	2024-01-01	769.99
2	2	2024-01-05	1429.44
3	3	2024-02-10	2199.95
4	4	2024-02-12	219.99
6	6	2025-02-18	164.99
7	7	2025-01-20	3849.93
8	8	2024-05-22	197.94
9	9	2024-08-24	175.98
11	3	2025-02-12	0.00
NULL	NULL	NULL	NULL

10. Write an SQL query to insert a new electronic gadget product into the "Products" table, including product name, category, price, and any other relevant details.

INSERT INTO Products (ProductName, Description, Price)

VALUES ('Power Bank', '20,000 mah Battery', 738.99);

Result Grid | Filter Rows: | Edit: | Export/

ProductID	ProductName	Description	Price
1	Smartphone	Latest Android smartphone	769.99
2	Laptop	15-inch gaming laptop	1429.44
3	Tablet	10-inch display tablet	439.99
4	Smartwatch	Water-resistant smartwatch	219.99
5	Bluetooth Speaker	Portable speaker	109.99
6	Headphones	Noise-cancelling headphones	164.99
7	Gaming Console	Next-gen gaming console	549.99
8	Wireless Mouse	Ergonomic wireless mouse	32.99
9	Keyboard	Mechanical keyboard	87.99
10	Monitor	27-inch 4K monitor	329.99
11	Power Bank	20,000 mah Battery	738.99
NULL	NULL	NULL	NULL

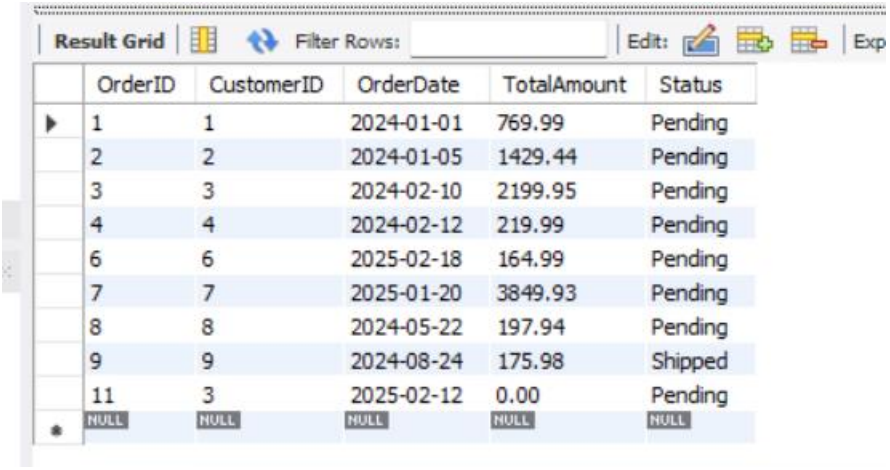
11. Write an SQL query to update the status of a specific order in the "Orders" table (e.g., from "Pending" to "Shipped"). Allow users to input the order ID and the new status.

ALTER TABLE Orders ADD COLUMN Status VARCHAR(20) DEFAULT 'Pending';

UPDATE Orders

SET Status = 'Shipped'

WHERE OrderID = 9;

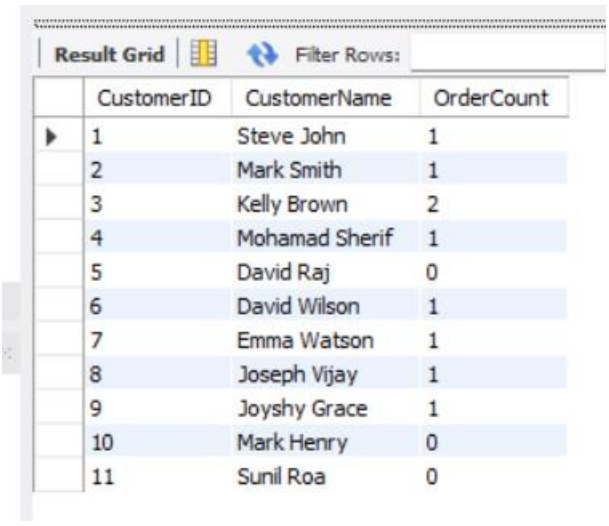


Result Grid | Filter Rows: | Edit: | Exp

OrderID	CustomerID	OrderDate	TotalAmount	Status
1	1	2024-01-01	769.99	Pending
2	2	2024-01-05	1429.44	Pending
3	3	2024-02-10	2199.95	Pending
4	4	2024-02-12	219.99	Pending
6	6	2025-02-18	164.99	Pending
7	7	2025-01-20	3849.93	Pending
8	8	2024-05-22	197.94	Pending
9	9	2024-08-24	175.98	Shipped
11	3	2025-02-12	0.00	Pending
NULL	NULL	NULL	NULL	NULL

12. Write an SQL query to calculate and update the number of orders placed by each customer in the "Customers" table based on the data in the "Orders" table.

SELECT CustomerID, CONCAT(FirstName, ' ', LastName) AS CustomerName, OrderCount FROM Customers;



Result Grid | Filter Rows:

CustomerID	CustomerName	OrderCount
1	Steve John	1
2	Mark Smith	1
3	Kelly Brown	2
4	Mohamad Sherif	1
5	David Raj	0
6	David Wilson	1
7	Emma Watson	1
8	Joseph Vijay	1
9	Joyshy Grace	1
10	Mark Henry	0
11	Sunil Roa	0

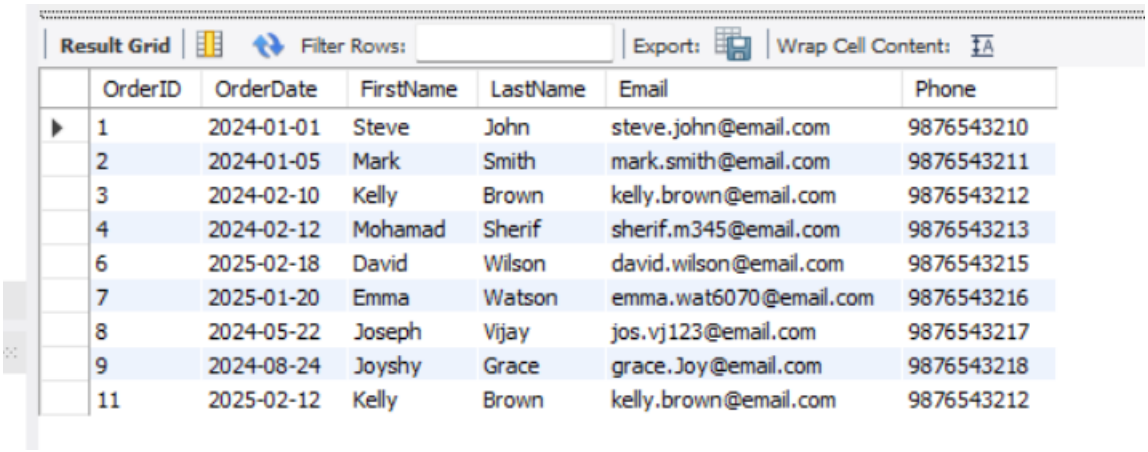
Task 3. Aggregate functions, Having, Order By, GroupBy and Joins:

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

SELECT o.OrderID, o.OrderDate, c.FirstName, c.LastName, c.Email, c.Phone

FROM Orders o

JOIN Customers c ON o.CustomerID = c.CustomerID;



Result Grid | Filter Rows: | Export: | Wrap Cell Content:

OrderID	OrderDate	FirstName	LastName	Email	Phone
1	2024-01-01	Steve	John	steve.john@email.com	9876543210
2	2024-01-05	Mark	Smith	mark.smith@email.com	9876543211
3	2024-02-10	Kelly	Brown	kelly.brown@email.com	9876543212
4	2024-02-12	Mohamad	Sherif	sherif.m345@email.com	9876543213
6	2025-02-18	David	Wilson	david.wilson@email.com	9876543215
7	2025-01-20	Emma	Watson	emma.wat6070@email.com	9876543216
8	2024-05-22	Joseph	Vijay	jos.vj123@email.com	9876543217
9	2024-08-24	Joyshy	Grace	grace.Joy@email.com	9876543218
11	2025-02-12	Kelly	Brown	kelly.brown@email.com	9876543212

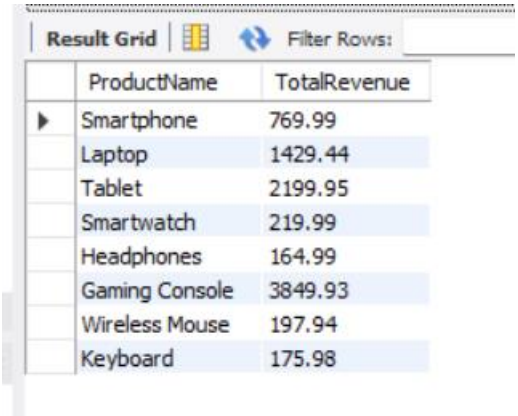
2. Write an SQL query to find the total revenue generated by each electronic gadget product. Include the product name and the total revenue.

SELECT p.ProductName, SUM(od.Quantity * p.Price) AS TotalRevenue

FROM OrderDetails od

JOIN Products p ON od.ProductID = p.ProductID

GROUP BY p.ProductName;



Result Grid | Filter Rows:

ProductName	TotalRevenue
Smartphone	769.99
Laptop	1429.44
Tablet	2199.95
Smartwatch	219.99
Headphones	164.99
Gaming Console	3849.93
Wireless Mouse	197.94
Keyboard	175.98

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

SELECT DISTINCT c.CustomerID, c.FirstName, c.LastName, c.Email, c.Phone, c.Address

FROM Customers c

JOIN Orders o ON c.CustomerID = o.CustomerID;

Result Grid | Filter Rows: | Export: | Wrap Cell Content:

CustomerID	FirstName	LastName	Email	Phone	Address
1	Steve	John	steve.john@email.com	9876543210	123 Main St, NY
2	Mark	Smith	mark.smith@email.com	9876543211	456 Last St, LA
3	Kelly	Brown	kelly.brown@email.com	9876543212	789 Pine St, SF
4	Mohamad	Sherif	sherif.m345@email.com	9876543213	101 Broadway St, TX
6	David	Wilson	david.wilson@email.com	9876543215	303 Birch St, NV
7	Emma	Watson	emma.wat6070@email.com	9876543216	404 Cedar St, IL
8	Joseph	Vijay	jos.vj123@email.com	9876543217	505 Panayur St, CH
9	Joyshy	Grace	grace.Joy@email.com	9876543218	606 New St, WA

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.

```
SELECT p.ProductName, SUM(od.Quantity) AS TotalQuantityOrdered
FROM OrderDetails od
JOIN Products p ON od.ProductID = p.ProductID
GROUP BY p.ProductName
ORDER BY TotalQuantityOrdered DESC
LIMIT 1;
```

Result Grid | Filter Rows:

ProductName	TotalQuantityOrdered
Gaming Console	7

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

```
SELECT ProductName, Description FROM Products;
```

ProductName	Description
Smartphone	Latest Android smartphone
Laptop	15-inch gaming laptop
Tablet	10-inch display tablet
Smartwatch	Water-resistant smartwatch
Bluetooth Speaker	Portable speaker
Headphones	Noise-cancelling headphones
Gaming Console	Next-gen gaming console
Wireless Mouse	Ergonomic wireless mouse
Keyboard	Mechanical keyboard
Monitor	27-inch 4K monitor
Power Bank	20,000 mah Battery

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

```
SELECT c.CustomerID, c.FirstName, c.LastName, AVG(o.TotalAmount) AS
AvgOrderValue

FROM Orders o

JOIN Customers c ON o.CustomerID = c.CustomerID

GROUP BY c.CustomerID, c.FirstName, c.LastName;
```

Result Grid | Filter Rows: | Export:

CustomerID	FirstName	LastName	AvgOrderValue
1	Steve	John	769.990000
2	Mark	Smith	1429.440000
3	Kelly	Brown	1099.975000
4	Mohamad	Sherif	219.990000
6	David	Wilson	164.990000
7	Emma	Watson	3849.930000
8	Joseph	Vijay	197.940000
9	Joyshy	Grace	175.980000

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

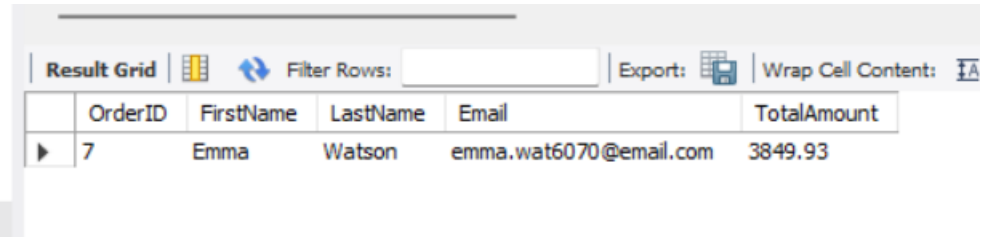
```
SELECT o.OrderID, c.FirstName, c.LastName, c.Email, o.TotalAmount

FROM Orders o

JOIN Customers c ON o.CustomerID = c.CustomerID

ORDER BY o.TotalAmount DESC
```

LIMIT 1;

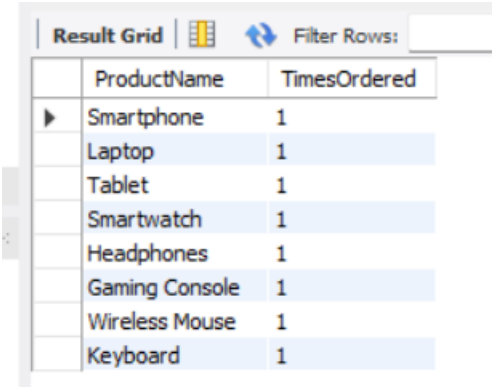


Result Grid | Filter Rows: | Export: | Wrap Cell Content:

OrderID	FirstName	LastName	Email	TotalAmount
7	Emma	Watson	emma.wat6070@email.com	3849.93

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

```
SELECT p.ProductName, COUNT(od.OrderDetailID) AS TimesOrdered
FROM OrderDetails od
JOIN Products p ON od.ProductID = p.ProductID
GROUP BY p.ProductName
ORDER BY TimesOrdered DESC;
```

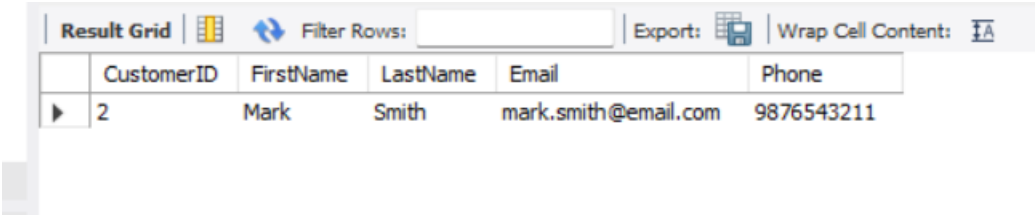


Result Grid | Filter Rows:

ProductName	TimesOrdered
Smartphone	1
Laptop	1
Tablet	1
Smartwatch	1
Headphones	1
Gaming Console	1
Wireless Mouse	1
Keyboard	1

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.

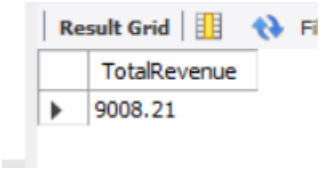
```
SELECT DISTINCT c.CustomerID, c.FirstName, c.LastName, c.Email, c.Phone
FROM Customers c
JOIN Orders o ON c.CustomerID = o.CustomerID
JOIN OrderDetails od ON o.OrderID = od.OrderID
JOIN Products p ON od.ProductID = p.ProductID
WHERE p.ProductName = 'Laptop';
```



CustomerID	FirstName	LastName	Email	Phone
2	Mark	Smith	mark.smith@email.com	9876543211

10. Write an SQL query to calculate the total revenue generated by all orders placed within a specific time period. Allow users to input the start and end dates as parameters.

```
SELECT SUM(TotalAmount) AS TotalRevenue
FROM Orders
WHERE OrderDate BETWEEN '2024-01-01' AND '2025-03-30';
```

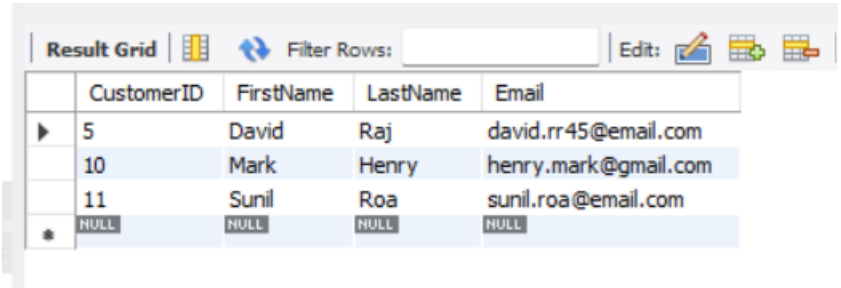


TotalRevenue
9008.21

Task 4. Subquery and its type:

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

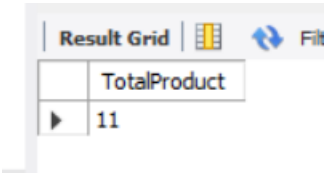
```
SELECT c.CustomerID, c.FirstName, c.LastName, c.Email
FROM Customers c
WHERE c.CustomerID NOT IN (SELECT DISTINCT CustomerID FROM Orders);
```



CustomerID	FirstName	LastName	Email
5	David	Raj	david.rr45@email.com
10	Mark	Henry	henry.mark@gmail.com
11	Sunil	Roa	sunil.roa@email.com
NULL	NULL	NULL	NULL

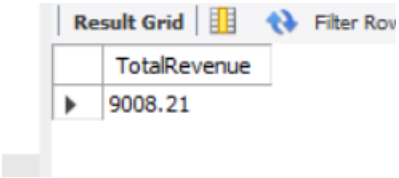
2. Write an SQL query to find the total number of products available for sale.

```
SELECT (SELECT COUNT(*) FROM Products) AS TotalProducts;
```



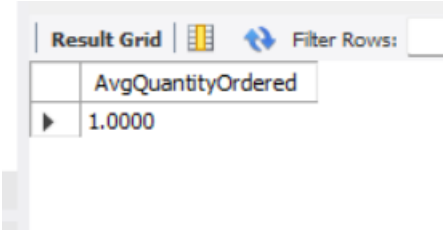
3. Write an SQL query to calculate the total revenue generated by TechShop.

```
SELECT (SELECT SUM(TotalAmount) FROM Orders) AS TotalRevenue;
```



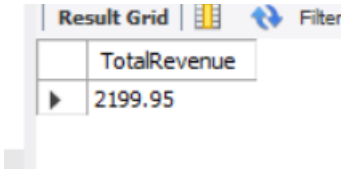
4. Write an SQL query to calculate the average quantity ordered for products in a specific category. Allow users to input the category name as a parameter.

```
SELECT AVG(od.Quantity) AS AvgQuantity
FROM OrderDetails od
JOIN (
    SELECT ProductID FROM Products
    WHERE ProductName LIKE CONCAT('%', 'laptop', '%')
) p ON od.ProductID = p.ProductID;
```



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.

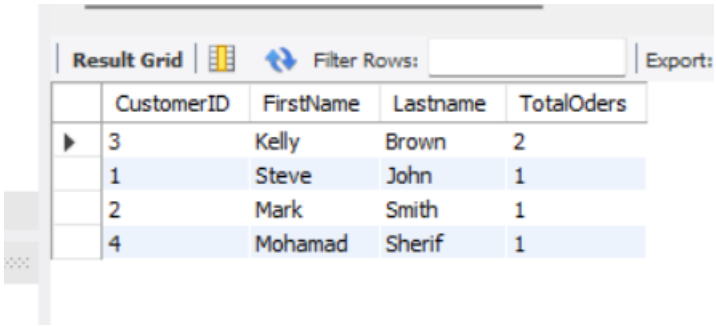
```
SELECT (SELECT SUM(TotalAmount) FROM Orders WHERE CustomerID = 3) AS TotalRevenue;
```



TotalRevenue
2199.95

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.

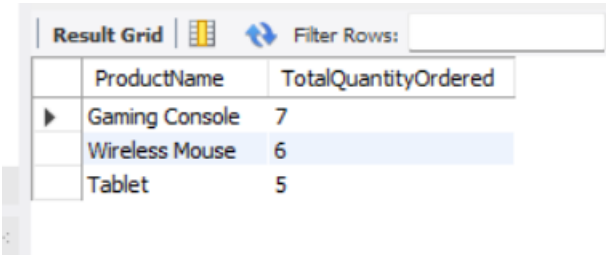
```
SELECT c.FirstName, c.LastName, COUNT(o.OrderID) AS OrderCount
FROM Customers c
JOIN Orders o ON c.CustomerID = o.CustomerID
GROUP BY c.CustomerID
HAVING OrderCount = (
    SELECT MAX(OrderCounts) FROM (
        SELECT COUNT(OrderID) AS OrderCounts FROM Orders GROUP BY CustomerID
    ) AS Sub
);
```



CustomerID	FirstName	Lastname	TotalOders
3	Kelly	Brown	2
1	Steve	John	1
2	Mark	Smith	1
4	Mohamad	Sherif	1

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.

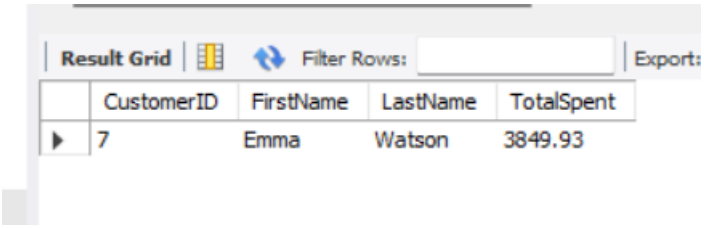
```
SELECT ProductName, TotalQuantity
FROM (
    SELECT p.ProductName, SUM(od.Quantity) AS TotalQuantity
    FROM OrderDetails od
    JOIN Products p ON od.ProductID = p.ProductID
    GROUP BY p.ProductName
) AS sub
ORDER BY TotalQuantity DESC
LIMIT 3;
```



ProductName	TotalQuantityOrdered
Gaming Console	7
Wireless Mouse	6
Tablet	5

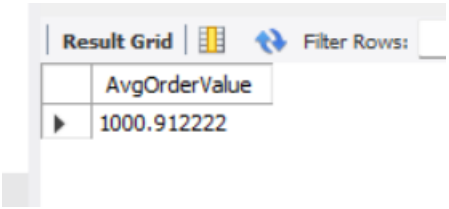
8. Write an SQL query to find the customer who has spent the most money (highest total revenue) on electronic gadgets. List their name and total spending.

```
SELECT c.FirstName, c.LastName, SUM(o.TotalAmount) AS TotalSpent
FROM Customers c
JOIN Orders o ON c.CustomerID = o.CustomerID
GROUP BY c.CustomerID
HAVING TotalSpent = (
    SELECT MAX(TotalSum) FROM (
        SELECT SUM(TotalAmount) AS TotalSum FROM Orders GROUP BY CustomerID
    ) AS Sub
);
```



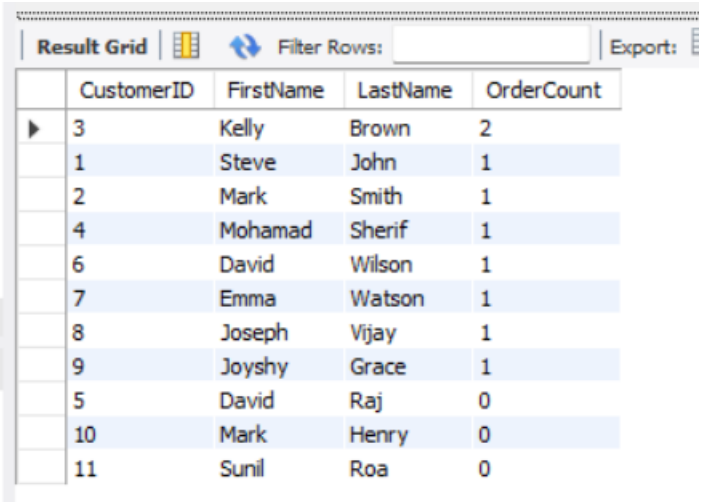
9. Write an SQL query to calculate the average order value (total revenue divided by the number of orders) for all customers.

```
SELECT
    (SELECT SUM(TotalAmount) FROM Orders) /
    (SELECT COUNT(*) FROM Orders) AS AvgOrderValue;
```



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.

```
SELECT c.FirstName, c.LastName, Sub.OrderCount
FROM Customers c
JOIN (
    SELECT CustomerID, COUNT(OrderID) AS OrderCount
    FROM Orders
    GROUP BY CustomerID
) AS Sub ON c.CustomerID = Sub.CustomerID;
```



Result Grid | Filter Rows: | Export:

CustomerID	FirstName	LastName	OrderCount
3	Kelly	Brown	2
1	Steve	John	1
2	Mark	Smith	1
4	Mohamad	Sherif	1
6	David	Wilson	1
7	Emma	Watson	1
8	Joseph	Vijay	1
9	Joyshy	Grace	1
5	David	Raj	0
10	Mark	Henry	0
11	Sunil	Roa	0