TechShop, an electronic gadgets shop

Task:1. Database Design:

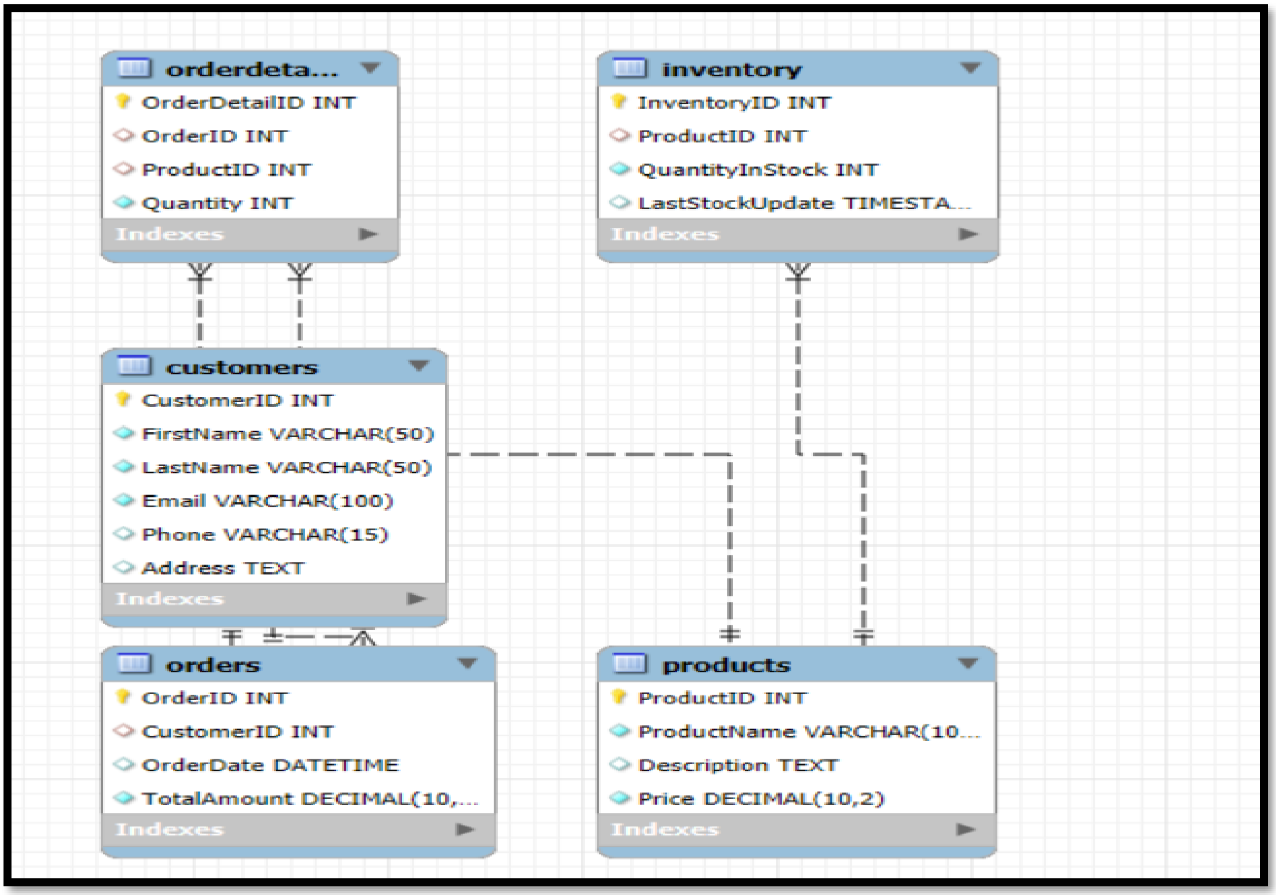
1. Create the database named "TechShop"

```
CREATE DATABASE techshop_hexaware;
```

2. Define the schema for the Customers, Products, Orders, OrderDetails and Inventory tables based on the provided schema.

```
CREATE TABLE Customers (
    CustomerID INT PRIMARY KEY AUTO_INCREMENT,  -- Unique ID for each customer
    FirstName VARCHAR(50) NOT NULL,  -- First name (Required)
    LastName VARCHAR(50) NOT NULL,  -- Last name (Required)
    Email VARCHAR(100) UNIQUE NOT NULL,  -- Email (Must be unique and required)
    Phone VARCHAR(15),  -- Optional phone number
    Address TEXT  -- Address details
);

-- Table to store product details
CREATE TABLE Products (
    ProductID INT PRIMARY KEY AUTO_INCREMENT,  -- Unique ID for each product
    ProductName VARCHAR(100) NOT NULL,  -- Product name (Required)
    Description TEXT,  -- Description of the product
    Price DECIMAL(10,2) NOT NULL CHECK (Price > 0)  -- Price must be greater than zero
);

-- Table to store order details
CREATE TABLE Orders (
    OrderID INT PRIMARY KEY AUTO_INCREMENT,  -- Unique order ID
    CustomerID INT,  -- Reference to the customer who placed the order
    OrderDate DATETIME DEFAULT CURRENT_TIMESTAMP,  -- Timestamp of order creation
    TotalAmount DECIMAL(10,2) NOT NULL CHECK (TotalAmount >= 0),  -- Order total (Non-negative)
    FOREIGN KEY (CustomerID) REFERENCES Customers(CustomerID) ON DELETE CASCADE  -- Links to Customers table
);


-- Table to store detailed order breakdown
CREATE TABLE OrderDetails (
    OrderDetailID INT PRIMARY KEY AUTO_INCREMENT,  -- Unique ID for each order detail
    OrderID INT,  -- Reference to the order
    ProductID INT,  -- Reference to the product
    Quantity INT NOT NULL CHECK (Quantity > 0),  -- Product quantity must be positive
    FOREIGN KEY (OrderID) REFERENCES Orders(OrderID) ON DELETE CASCADE,  -- Links to Orders table
    FOREIGN KEY (ProductID) REFERENCES Products(ProductID) ON DELETE CASCADE  -- Links to Products table
);


-- Table to manage inventory stock
CREATE TABLE Inventory (
    InventoryID INT PRIMARY KEY AUTO_INCREMENT,  -- Unique inventory ID
    ProductID INT UNIQUE,  -- Links to a product (one-to-one mapping)
    QuantityInStock INT NOT NULL CHECK (QuantityInStock >= 0),  -- Stock cannot be negative
    LastStockUpdate TIMESTAMP DEFAULT CURRENT_TIMESTAMP ON UPDATE CURRENT_TIMESTAMP,  -- Tracks the last update
    FOREIGN KEY (ProductID) REFERENCES Products(ProductID) ON DELETE CASCADE  -- Links to Products table
);
```

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



4. Create appropriate Primary Key and Foreign Key constraints for referential integrity.

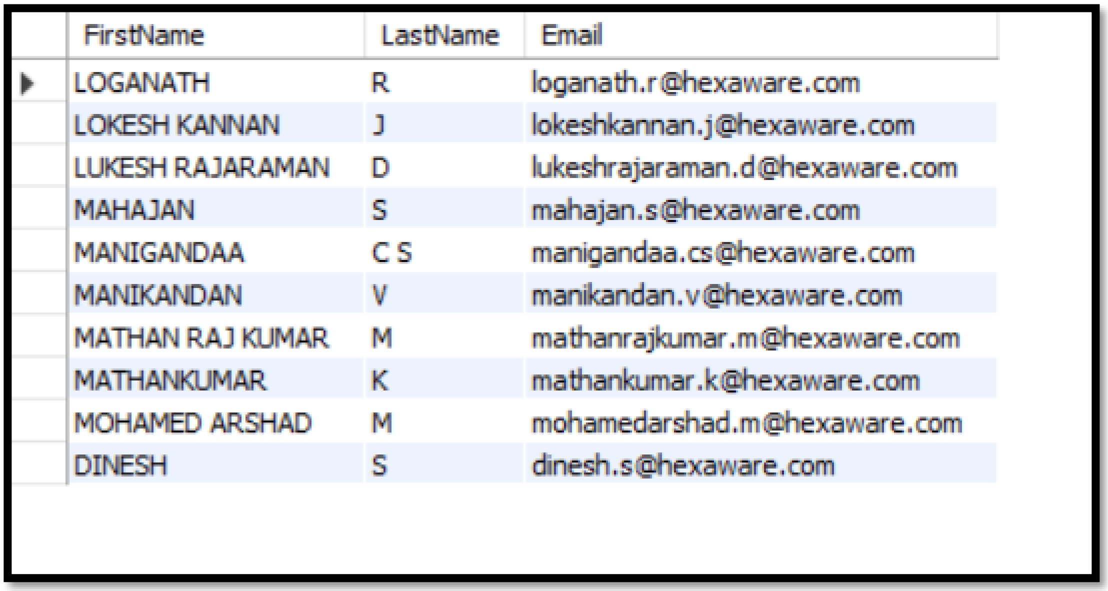
5. Insert at least 10 sample records into each of the following tables.
   a. Customers
   b. Products
   c. Orders
   d. OrderDetails
   e. Inventory

```
-- Insert into Customers
INSERT INTO Customers (FirstName, LastName, Email, Phone, Address) VALUES
('LOGANATH', 'R', 'loganath.r@hexaware.com', '9876543210', 'Chennai, India'),
('LOKESH KANNAN', 'J', 'lokeshkannan.j@hexaware.com', '9876543211', 'Bangalore, India'),
('LUKESH RAJARAMAN', 'D', 'lukeshrajaraman.d@hexaware.com', '9876543212', 'Hyderabad, India'),
('MAHAJAN', 'S', 'mahajan.s@hexaware.com', '9876543213', 'Mumbai, India'),
('MANIGANDAA', 'C S', 'manigandaa.cs@hexaware.com', '9876543214', 'Pune, India'),
('MANIKANDAN', 'V', 'manikandan.v@hexaware.com', '9876543215', 'Tirupathur, India'),
('MATHAN RAJ KUMAR', 'M', 'mathanrajkumar.m@hexaware.com', '9876543216', 'Kolkata, India'),
('MATHANKUMAR', 'K', 'mathankumar.k@hexaware.com', '9876543217', 'Coimbatore, India'),
('MOHAMED ARSHAD', 'M', 'mohamedarshad.m@hexaware.com', '9876543218', 'Delhi, India'),
('DINESH', 'S', 'dinesh.s@hexaware.com', '9876543219', 'Madurai, India');

-- Insert into Products
INSERT INTO Products (ProductName, Description, Price) VALUES
('Laptop', 'High-performance laptop', 75000.00),
('Smartphone', 'Latest 5G smartphone', 50000.00),
('Headphones', 'Noise-canceling headphones', 8000.00),
('Smartwatch', 'Fitness and health tracking smartwatch', 15000.00),
('Tablet', 'Portable tablet with stylus', 30000.00),
('Keyboard', 'Mechanical gaming keyboard', 5000.00),
('Mouse', 'Wireless ergonomic mouse', 3000.00),
('Monitor', '4K ultra HD monitor', 35000.00),
('External SSD', '1TB portable SSD', 12000.00),
('Smart Speaker', 'AI-powered smart speaker', 7000.00);

select * from Products;



-- Insert into Orders
INSERT INTO Orders (CustomerID, OrderDate, TotalAmount) VALUES
(1, '2024-03-01 10:30:00', 75000.00),
(2, '2024-03-02 12:45:00', 50000.00),
(3, '2024-03-03 14:00:00', 8000.00),
(4, '2024-03-04 16:30:00', 15000.00),
(5, '2024-03-05 18:15:00', 30000.00),
(6, '2024-03-06 19:45:00', 5000.00),
(7, '2024-03-07 09:20:00', 3000.00),
(8, '2024-03-08 11:10:00', 35000.00),
(9, '2024-03-09 13:50:00', 12000.00),
(10, '2024-03-10 15:30:00', 7000.00);

select * from Orders;

-- Insert into OrderDetails
INSERT INTO OrderDetails (OrderID, ProductID, Quantity) VALUES
(1, 1, 1),
(2, 2, 1),
(3, 3, 2),
(4, 4, 1),
(5, 5, 1),
(6, 6, 2),
(7, 7, 1),
(8, 8, 1),
(9, 9, 1),
(10, 10, 1);

select * from OrderDetails;

-- Insert into Inventory
INSERT INTO Inventory (ProductID, QuantityInStock, LastStockUpdate) VALUES
(1, 50, NOW()),
(2, 30, NOW()),
(3, 40, NOW()),
(4, 25, NOW()),
(5, 20, NOW()),
(6, 35, NOW()),
(7, 60, NOW()),
(8, 15, NOW()),
(9, 45, NOW()),
(10, 10, NOW());
```

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

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

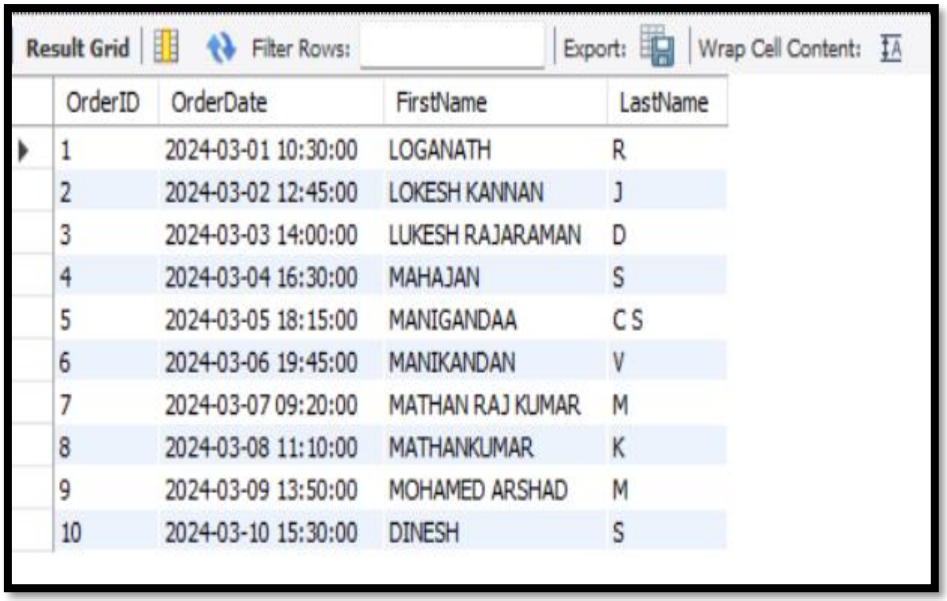
```
 SELECT FirstName, LastName, Email
FROM Customers;
```



FirstName	LastName	Email
LOGANATH	R	loganath.r@hexaware.com
LOKESH KANNAN	J	lokeshkannan.j@hexaware.com
LUKESH RAJARAMAN	D	lukeshrajaraman.d@hexaware.com
MAHAJAN	S	mahajan.s@hexaware.com
MANIGANDAA	C S	manigandaa.cs@hexaware.com
MANIKANDAN	V	manikandan.v@hexaware.com
MATHAN RAJ KUMAR	M	mathanrajkumar.m@hexaware.com
MATHANKUMAR	K	mathankumar.k@hexaware.com
MOHAMED ARSHAD	M	mohamedarshad.m@hexaware.com
DINESH	S	dinesh.s@hexaware.com

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

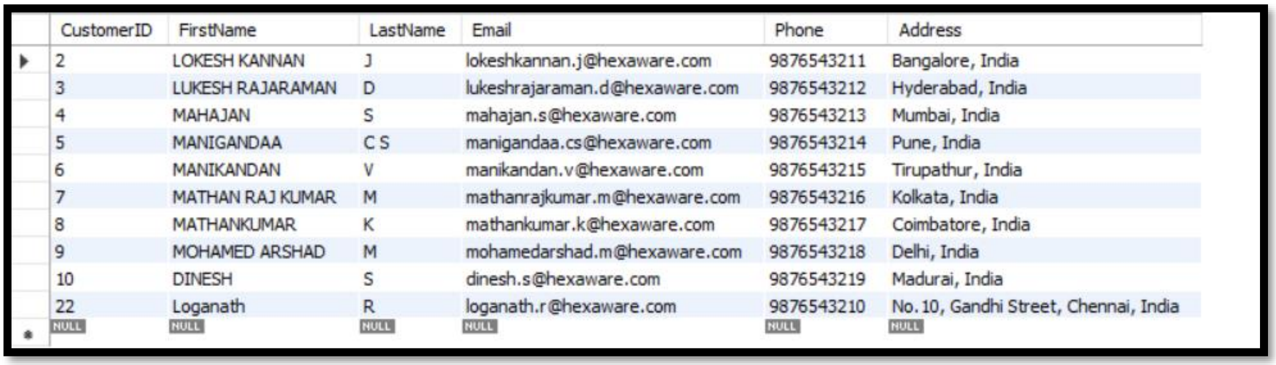
```
SELECT
  Orders.OrderID,
  Orders.OrderDate,
  Customers.FirstName,
  Customers.LastName
FROM Orders
    JOIN Customers ON Orders.CustomerID = Customers.CustomerID;
```



OrderID	OrderDate	FirstName	LastName
1	2024-03-01 10:30:00	LOGANATH	R
2	2024-03-02 12:45:00	LOKESH KANNAN	J
3	2024-03-03 14:00:00	LUKESH RAJARAMAN	D
4	2024-03-04 16:30:00	MAHAJAN	S
5	2024-03-05 18:15:00	MANIGANDAA	C S
6	2024-03-06 19:45:00	MANIKANDAN	V
7	2024-03-07 09:20:00	MATHAN RAJ KUMAR	M
8	2024-03-08 11:10:00	MATHANKUMAR	K
9	2024-03-09 13:50:00	MOHAMED ARSHAD	M
10	2024-03-10 15:30:00	DINESH	S

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

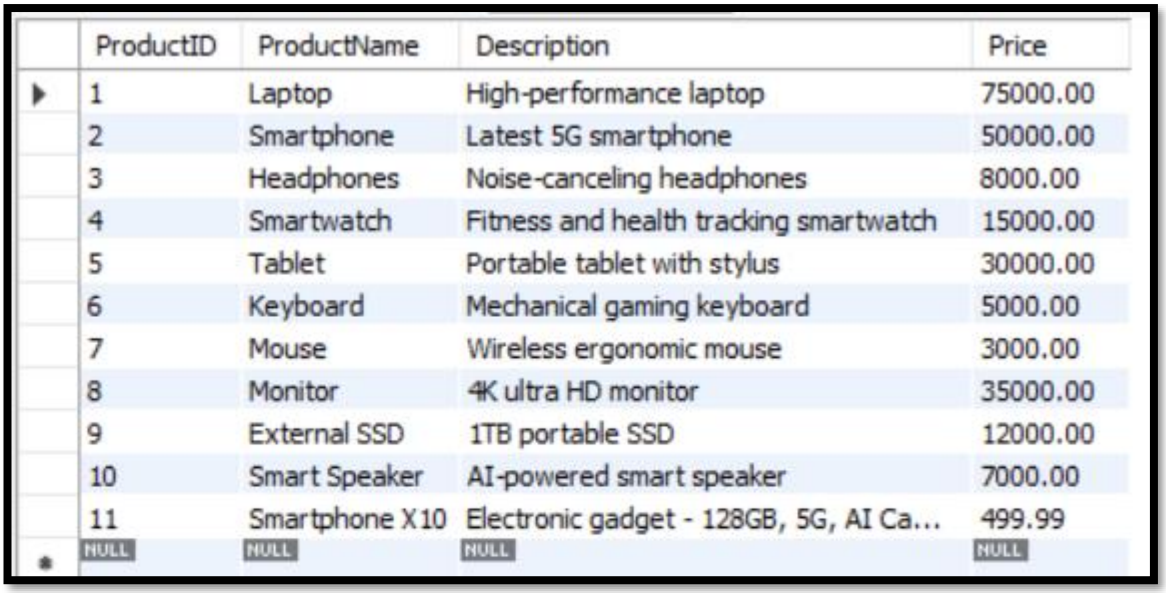
```
INSERT INTO Customers (FirstName, LastName, Email, Phone, Address)
    VALUES ('Loganath', 'R', 'loganath.r@hexaware.com', '9876543210', 'No.10,
    Gandhi Street, Chennai, India');
```



CustomerID	FirstName	LastName	Email	Phone	Address
2	LOKESH KANNAN	J	lokeshkannan.j@hexaware.com	9876543211	Bangalore, India
3	LUKESH RAJARAMAN	D	lukeshrajaraman.d@hexaware.com	9876543212	Hyderabad, India
4	MAHAJAN	S	mahajan.s@hexaware.com	9876543213	Mumbai, India
5	MANIGANDAA	C S	manigandaa.cs@hexaware.com	9876543214	Pune, India
6	MANIKANDAN	V	manikandan.v@hexaware.com	9876543215	Tirupathur, India
7	MATHAN RAJ KUMAR	M	mathanrajkumar.m@hexaware.com	9876543216	Kolkata, India
8	MATHANKUMAR	K	mathankumar.k@hexaware.com	9876543217	Coimbatore, India
9	MOHAMED ARSHAD	M	mohamedarshad.m@hexaware.com	9876543218	Delhi, India
10	DINESH	S	dinesh.s@hexaware.com	9876543219	Madurai, India
22	Loganath	R	loganath.r@hexaware.com	9876543210	No. 10, Gandhi Street, Chennai, India
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%.

```
UPDATE Products
SET Price = Price * 1.10
    WHERE ProductName LIKE '%Electronic%' OR Description LIKE
    '%electronic%';
```



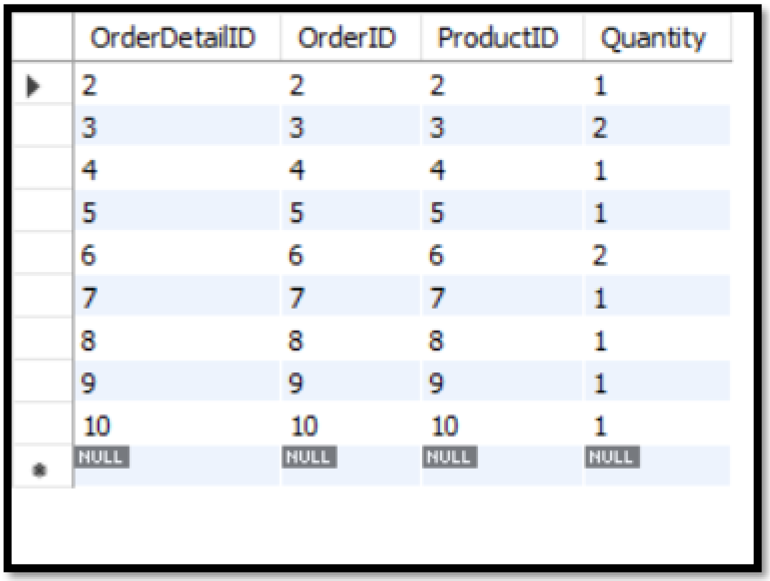
ProductID	ProductName	Description	Price
1	Laptop	High-performance laptop	75000.00
2	Smartphone	Latest 5G smartphone	50000.00
3	Headphones	Noise-canceling headphones	8000.00
4	Smartwatch	Fitness and health tracking smartwatch	15000.00
5	Tablet	Portable tablet with stylus	30000.00
6	Keyboard	Mechanical gaming keyboard	5000.00
7	Mouse	Wireless ergonomic mouse	3000.00
8	Monitor	4K ultra HD monitor	35000.00
9	External SSD	1TB portable SSD	12000.00
10	Smart Speaker	AI-powered smart speaker	7000.00
11	Smartphone X10	Electronic gadget - 128GB, 5G, AI Ca...	499.99
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.

SET @INPUT=100;

DELETE FROM OrderDetails

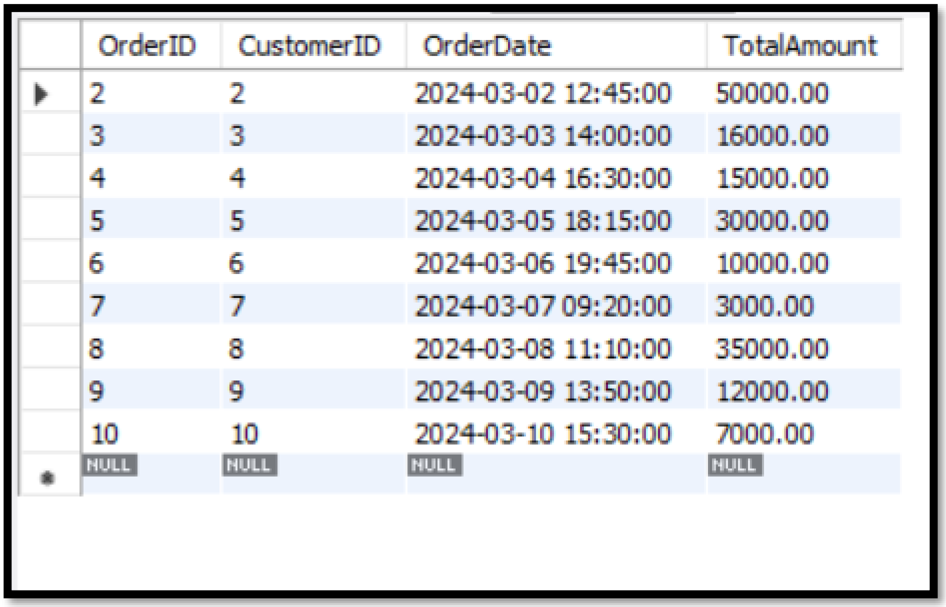
WHERE OrderID = @INPUT;



OrderDetailID	OrderID	ProductID	Quantity
2	2	2	1
3	3	3	2
4	4	4	1
5	5	5	1
6	6	6	2
7	7	7	1
8	8	8	1
9	9	9	1
10	10	10	1
NULL	NULL	NULL	NULL

DELETE FROM Orders

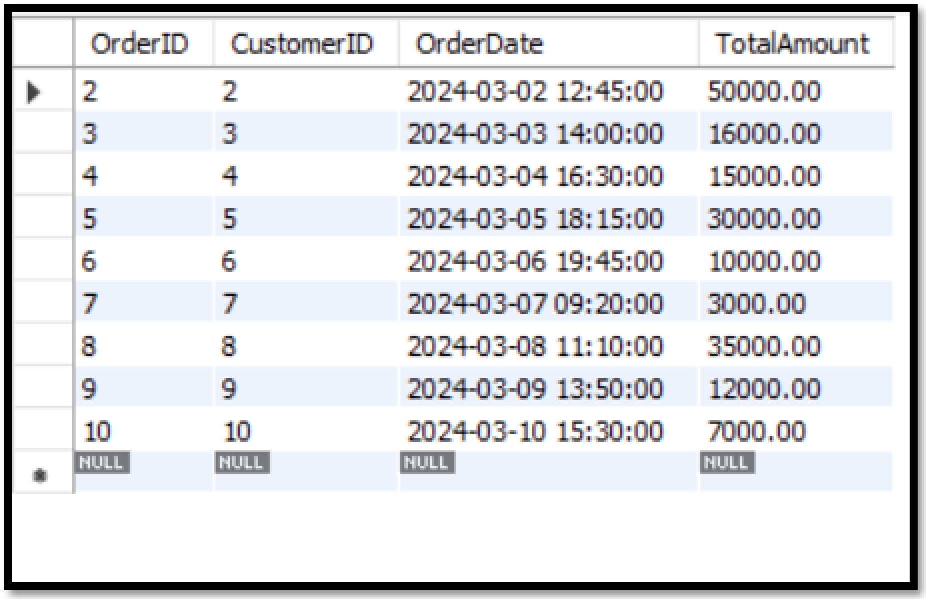
WHERE OrderID = @INPUT;



	OrderID	CustomerID	OrderDate	TotalAmount
▶	2	2	2024-03-02 12:45:00	50000.00
	3	3	2024-03-03 14:00:00	16000.00
	4	4	2024-03-04 16:30:00	15000.00
	5	5	2024-03-05 18:15:00	30000.00
	6	6	2024-03-06 19:45:00	10000.00
	7	7	2024-03-07 09:20:00	3000.00
	8	8	2024-03-08 11:10:00	35000.00
	9	9	2024-03-09 13:50:00	12000.00
	10	10	2024-03-10 15:30:00	7000.00
*	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.

```
SET @CustomerID = 1;
SET @OrderDate = NOW();
SET @TotalAmount = 500.00;

INSERT INTO Orders (CustomerID, OrderDate, TotalAmount)
    VALUES (@CustomerID, @OrderDate, @TotalAmount);
```

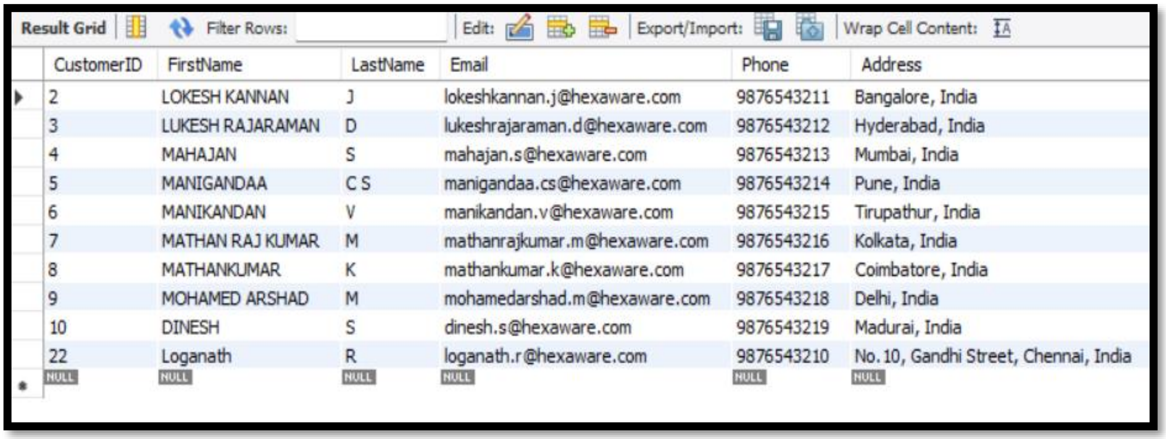


	OrderID	CustomerID	OrderDate	TotalAmount
▶	2	2	2024-03-02 12:45:00	50000.00
	3	3	2024-03-03 14:00:00	16000.00
	4	4	2024-03-04 16:30:00	15000.00
	5	5	2024-03-05 18:15:00	30000.00
	6	6	2024-03-06 19:45:00	10000.00
	7	7	2024-03-07 09:20:00	3000.00
	8	8	2024-03-08 11:10:00	35000.00
	9	9	2024-03-09 13:50:00	12000.00
	10	10	2024-03-10 15:30:00	7000.00
*	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.

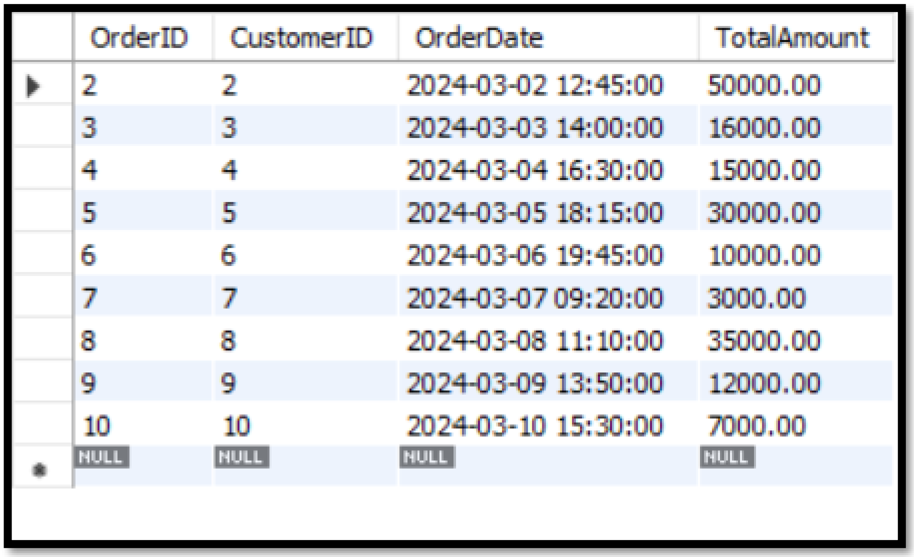
```
SET @CustomerID = 1
SET @NewEmail = 'new.email@hexaware.com';
SET @NewAddress = '123 New Street, Chennai, India';
UPDATE Customers
SET Email = @NewEmail, Address = @NewAddress
    WHERE CustomerID = @CustomerID;
```



CustomerID	FirstName	LastName	Email	Phone	Address
2	LOKESH KANNAN	J	lokeshkannan.j@hexaware.com	9876543211	Bangalore, India
3	LUKESH RAJARAMAN	D	lukeshrajaraman.d@hexaware.com	9876543212	Hyderabad, India
4	MAHAJAN	S	mahajan.s@hexaware.com	9876543213	Mumbai, India
5	MANIGANDAA	C S	manigandaa.cs@hexaware.com	9876543214	Pune, India
6	MANIKANDAN	V	manikandan.v@hexaware.com	9876543215	Tirupathur, India
7	MATHAN RAJ KUMAR	M	mathanrajkumar.m@hexaware.com	9876543216	Kolkata, India
8	MATHANKUMAR	K	mathankumar.k@hexaware.com	9876543217	Coimbatore, India
9	MOHAMED ARSHAD	M	mohamedarshad.m@hexaware.com	9876543218	Delhi, India
10	DINESH	S	dinesh.s@hexaware.com	9876543219	Madurai, India
22	Loganath	R	loganath.r@hexaware.com	9876543210	No. 10, Gandhi Street, Chennai, India
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 TotalAmount = (
   SELECT SUM(od.Quantity * p.Price)
   FROM OrderDetails od
   JOIN Products p ON od.ProductID = p.ProductID
   WHERE od.OrderID = o.OrderID
     );
```



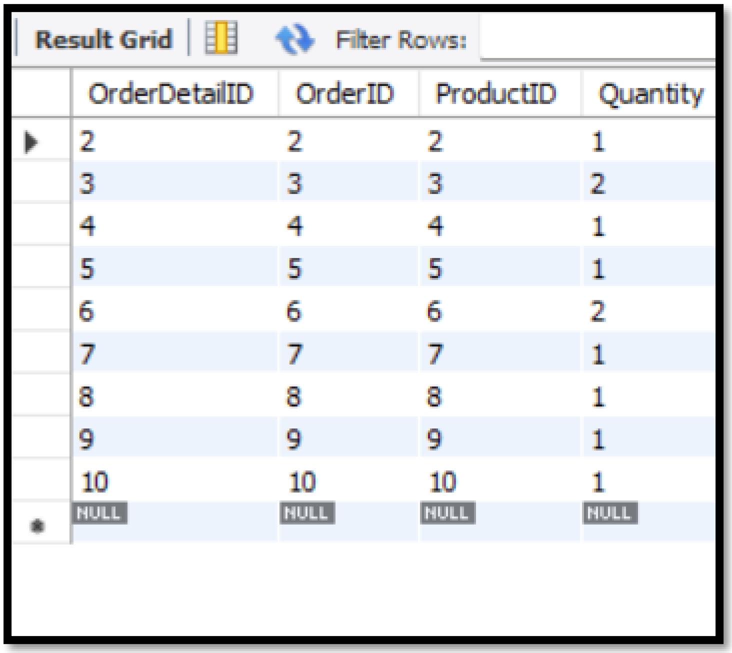
OrderID	CustomerID	OrderDate	TotalAmount
2	2	2024-03-02 12:45:00	50000.00
3	3	2024-03-03 14:00:00	16000.00
4	4	2024-03-04 16:30:00	15000.00
5	5	2024-03-05 18:15:00	30000.00
6	6	2024-03-06 19:45:00	10000.00
7	7	2024-03-07 09:20:00	3000.00
8	8	2024-03-08 11:10:00	35000.00
9	9	2024-03-09 13:50:00	12000.00
10	10	2024-03-10 15:30:00	7000.00
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 od FROM OrderDetails od

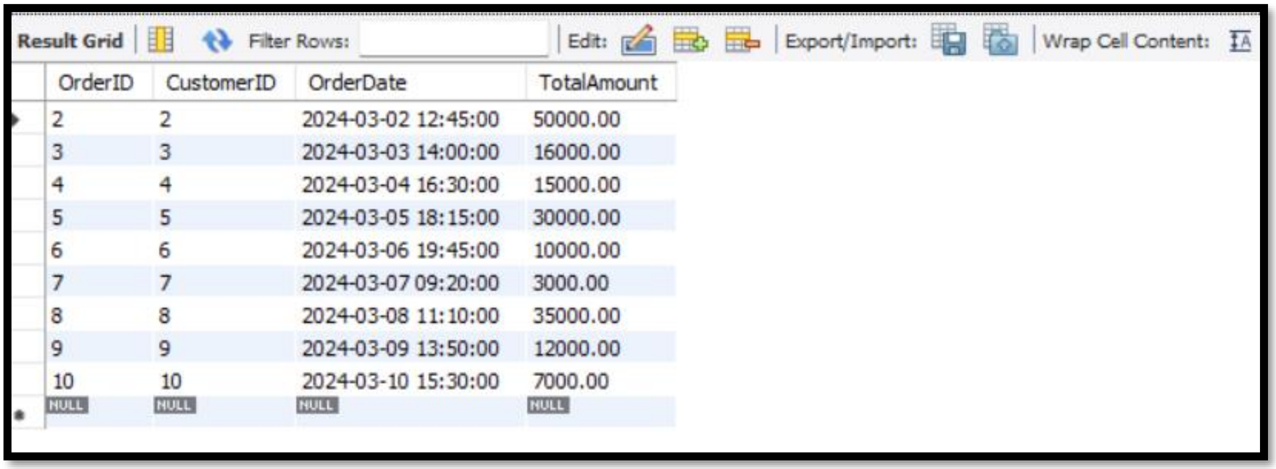
JOIN Orders o ON od.OrderID = o.OrderID

WHERE o.CustomerID = 123;



OrderDetailID	OrderID	ProductID	Quantity
2	2	2	1
3	3	3	2
4	4	4	1
5	5	5	1
6	6	6	2
7	7	7	1
8	8	8	1
9	9	9	1
10	10	10	1
NULL	NULL	NULL	NULL

DELETE FROM Orders WHERE CustomerID = 123;

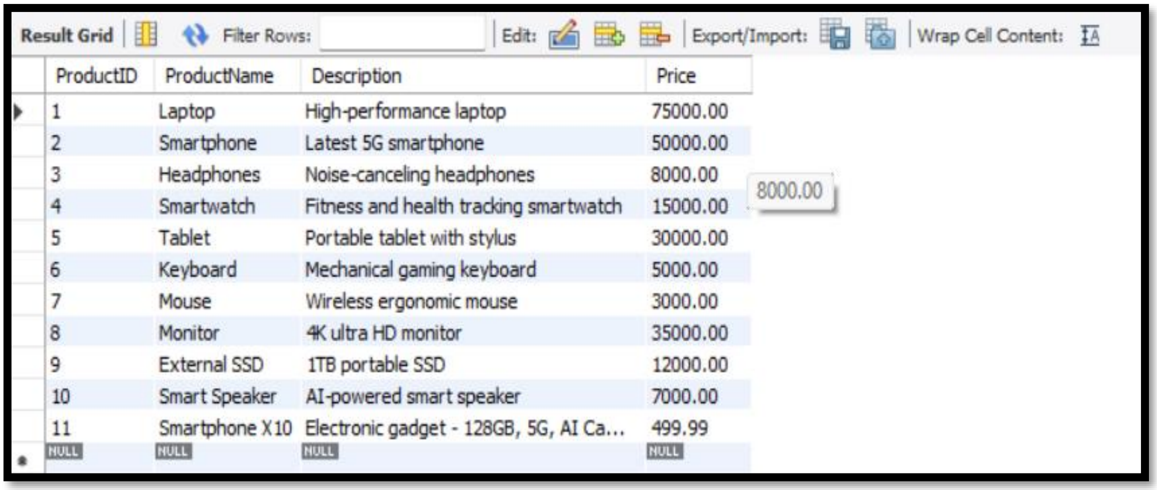


OrderID	CustomerID	OrderDate	TotalAmount
2	2	2024-03-02 12:45:00	50000.00
3	3	2024-03-03 14:00:00	16000.00
4	4	2024-03-04 16:30:00	15000.00
5	5	2024-03-05 18:15:00	30000.00
6	6	2024-03-06 19:45:00	10000.00
7	7	2024-03-07 09:20:00	3000.00
8	8	2024-03-08 11:10:00	35000.00
9	9	2024-03-09 13:50:00	12000.00
10	10	2024-03-10 15:30:00	7000.00
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)

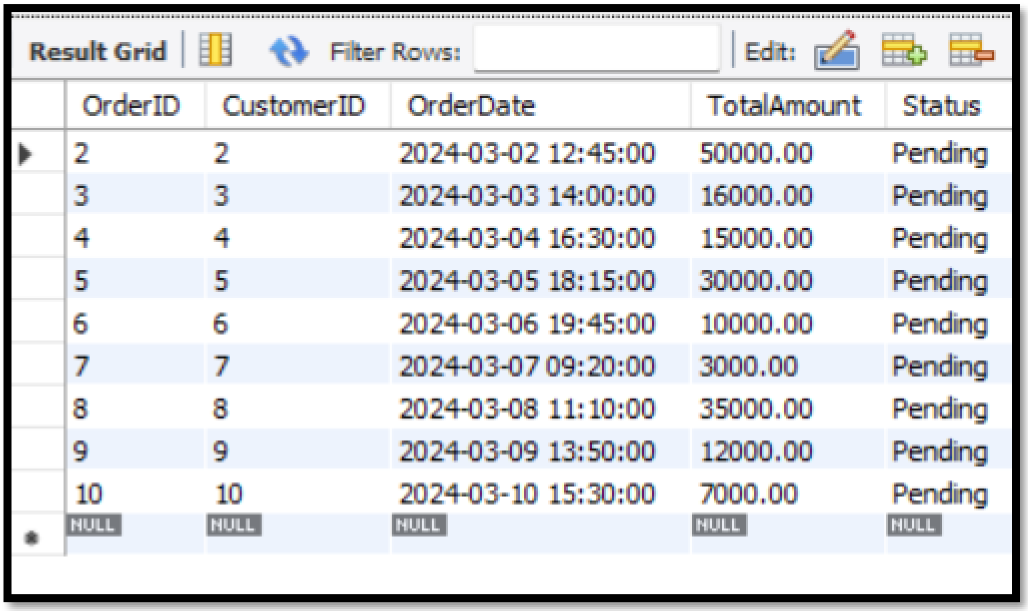
VALUES ('Smartphone X10', 'Electronic gadget - 128GB, 5G, AI Camera', 499.99);



ProductID	ProductName	Description	Price
1	Laptop	High-performance laptop	75000.00
2	Smartphone	Latest 5G smartphone	50000.00
3	Headphones	Noise-canceling headphones	8000.00
4	Smartwatch	Fitness and health tracking smartwatch	15000.00
5	Tablet	Portable tablet with stylus	30000.00
6	Keyboard	Mechanical gaming keyboard	5000.00
7	Mouse	Wireless ergonomic mouse	3000.00
8	Monitor	4K ultra HD monitor	35000.00
9	External SSD	1TB portable SSD	12000.00
10	Smart Speaker	AI-powered smart speaker	7000.00
11	Smartphone X10	Electronic gadget - 128GB, 5G, AI Ca...	499.99
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';

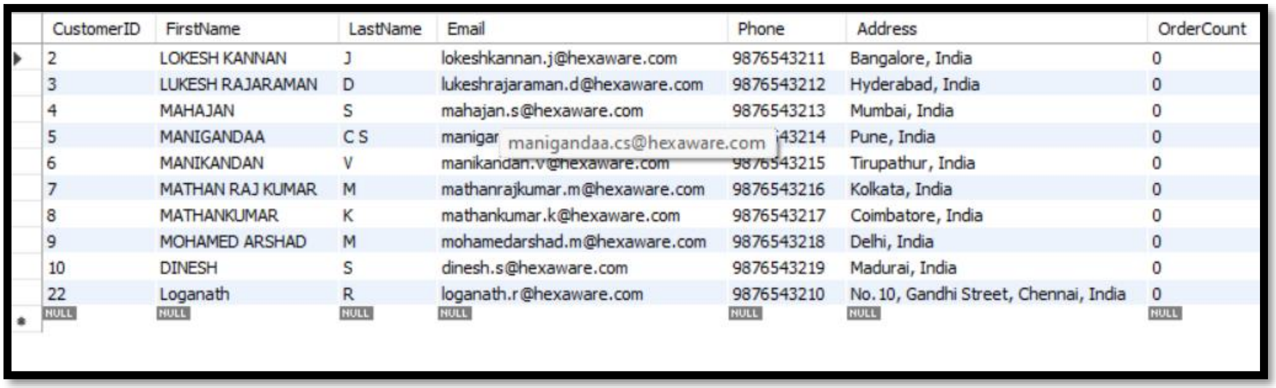


Result Grid | Filter Rows: | Edit:

OrderID	CustomerID	OrderDate	TotalAmount	Status
2	2	2024-03-02 12:45:00	50000.00	Pending
3	3	2024-03-03 14:00:00	16000.00	Pending
4	4	2024-03-04 16:30:00	15000.00	Pending
5	5	2024-03-05 18:15:00	30000.00	Pending
6	6	2024-03-06 19:45:00	10000.00	Pending
7	7	2024-03-07 09:20:00	3000.00	Pending
8	8	2024-03-08 11:10:00	35000.00	Pending
9	9	2024-03-09 13:50:00	12000.00	Pending
10	10	2024-03-10 15:30:00	7000.00	Pending
NULL	NULL	NULL	NULL	NULL

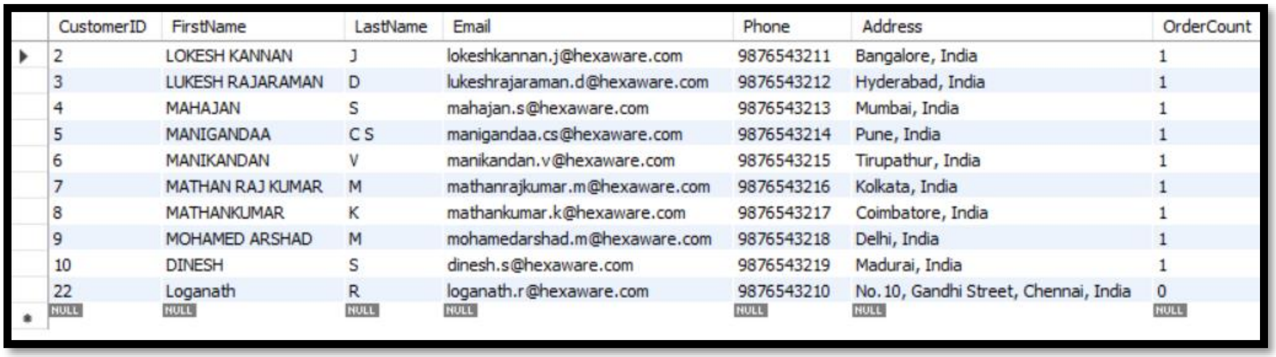
12. Write an SQL query to calculate and update the number of orders placed by each customer in the "Customers" table based on the data in the "Orders" table.

ALTER TABLE Customers ADD COLUMN OrderCount INT DEFAULT 0;



CustomerID	FirstName	LastName	Email	Phone	Address	OrderCount
2	LOKESH KANNAN	J	lokeshkannan.j@hexaware.com	9876543211	Bangalore, India	0
3	LUKESH RAJARAMAN	D	lukeshrajaraman.d@hexaware.com	9876543212	Hyderabad, India	0
4	MAHAJAN	S	mahajan.s@hexaware.com	9876543213	Mumbai, India	0
5	MANIGANDAA	C S	manigar manigandaa.cs@hexaware.com	43214	Pune, India	0
6	MANIKANDAN	V	manikandan.v@hexaware.com	9876543215	Tirupathur, India	0
7	MATHAN RAJ KUMAR	M	mathanrajkumar.m@hexaware.com	9876543216	Kolkata, India	0
8	MATHANKUMAR	K	mathankumar.k@hexaware.com	9876543217	Coimbatore, India	0
9	MOHAMED ARSHAD	M	mohamedarshad.m@hexaware.com	9876543218	Delhi, India	0
10	DINESH	S	dinesh.s@hexaware.com	9876543219	Madurai, India	0
22	Loganath	R	loganath.r@hexaware.com	9876543210	No. 10, Gandhi Street, Chennai, India	0
NULL	NULL	NULL	NULL	NULL	NULL	NULL

```
UPDATE Customers c
SET OrderCount = (
   SELECT COUNT(*)
   FROM Orders o
   WHERE o.CustomerID = c.CustomerID
     );
```



CustomerID	FirstName	LastName	Email	Phone	Address	OrderCount
2	LOKESH KANNAN	J	lokeshkannan.j@hexaware.com	9876543211	Bangalore, India	1
3	LUKESH RAJARAMAN	D	lukeshrajaraman.d@hexaware.com	9876543212	Hyderabad, India	1
4	MAHAJAN	S	mahajan.s@hexaware.com	9876543213	Mumbai, India	1
5	MANIGANDAA	C S	manigandaa.cs@hexaware.com	9876543214	Pune, India	1
6	MANIKANDAN	V	manikandan.v@hexaware.com	9876543215	Tirupathur, India	1
7	MATHAN RAJ KUMAR	M	mathanrajkumar.m@hexaware.com	9876543216	Kolkata, India	1
8	MATHANKUMAR	K	mathankumar.k@hexaware.com	9876543217	Coimbatore, India	1
9	MOHAMED ARSHAD	M	mohamedarshad.m@hexaware.com	9876543218	Delhi, India	1
10	DINESH	S	dinesh.s@hexaware.com	9876543219	Madurai, India	1
22	Loganath	R	loganath.r@hexaware.com	9876543210	No. 10, Gandhi Street, Chennai, India	0
NULL	NULL	NULL	NULL	NULL	NULL	NULL

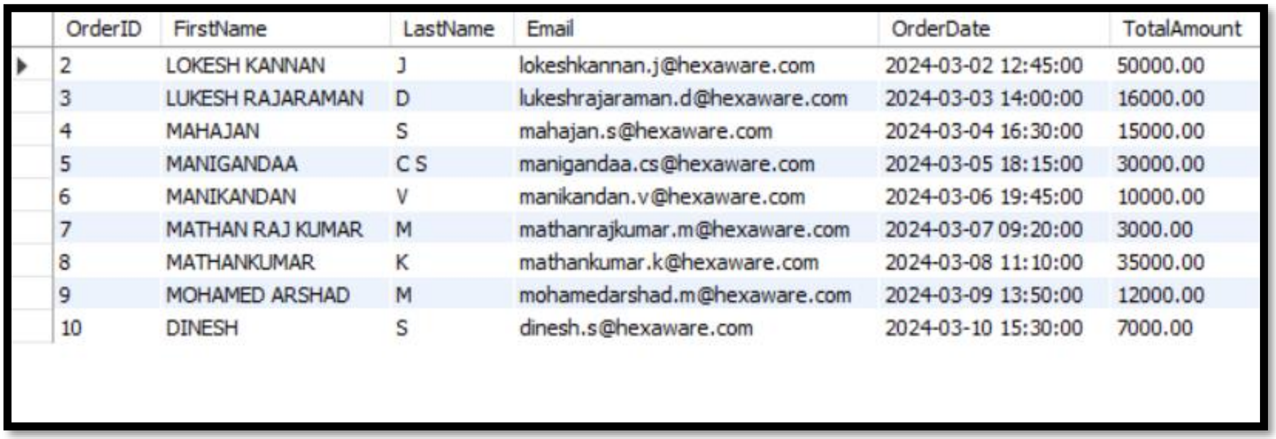
Task 3. Aggregate functions, Having, Order By, GroupBy and Joins:

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, c.FirstName, c.LastName, c.Email, o.OrderDate, o.TotalAmount

FROM Orders o

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



OrderID	FirstName	LastName	Email	OrderDate	TotalAmount
2	LOKESH KANNAN	J	lokeshkannan.j@hexaware.com	2024-03-02 12:45:00	50000.00
3	LUKESH RAJARAMAN	D	lukeshrajaraman.d@hexaware.com	2024-03-03 14:00:00	16000.00
4	MAHAJAN	S	mahajan.s@hexaware.com	2024-03-04 16:30:00	15000.00
5	MANIGANDAA	C S	manigandaa.cs@hexaware.com	2024-03-05 18:15:00	30000.00
6	MANIKANDAN	V	manikandan.v@hexaware.com	2024-03-06 19:45:00	10000.00
7	MATHAN RAJ KUMAR	M	mathanrajkumar.m@hexaware.com	2024-03-07 09:20:00	3000.00
8	MATHANKUMAR	K	mathankumar.k@hexaware.com	2024-03-08 11:10:00	35000.00
9	MOHAMED ARSHAD	M	mohamedarshad.m@hexaware.com	2024-03-09 13:50:00	12000.00
10	DINESH	S	dinesh.s@hexaware.com	2024-03-10 15:30:00	7000.00

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

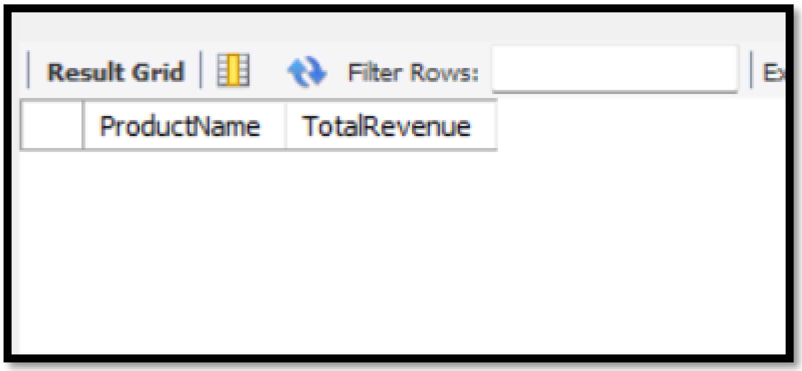
SELECT p.ProductName, SUM(od.Quantity * p.Price) AS TotalRevenue

FROM OrderDetails od

JOIN Products p ON od.ProductID = p.ProductID

WHERE p.Description LIKE '%electronic%' OR p.ProductName LIKE '%Electronic%'

GROUP BY p.ProductID;



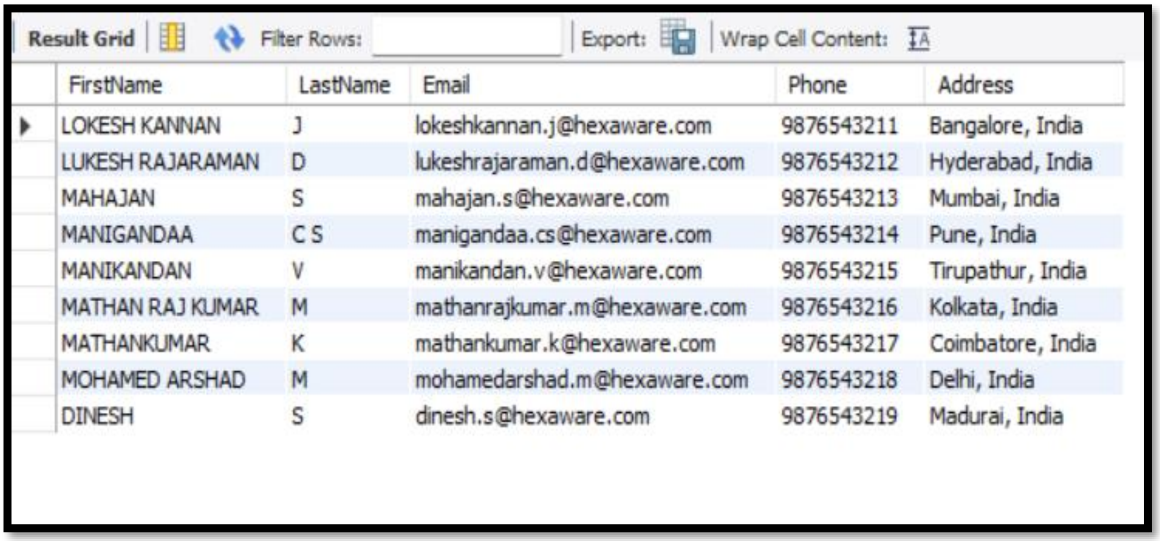
ProductName	TotalRevenue

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.FirstName, c.LastName, c.Email, c.Phone, c.Address

FROM Customers c

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



FirstName	LastName	Email	Phone	Address
LOKESH KANNAN	J	lokeshkannan.j@hexaware.com	9876543211	Bangalore, India
LUKESH RAJARAMAN	D	lukeshrajaraman.d@hexaware.com	9876543212	Hyderabad, India
MAHAJAN	S	mahajan.s@hexaware.com	9876543213	Mumbai, India
MANIGANDAA	C S	manigandaa.cs@hexaware.com	9876543214	Pune, India
MANIKANDAN	V	manikandan.v@hexaware.com	9876543215	Tirupathur, India
MATHAN RAJ KUMAR	M	mathanrajkumar.m@hexaware.com	9876543216	Kolkata, India
MATHANKUMAR	K	mathankumar.k@hexaware.com	9876543217	Coimbatore, India
MOHAMED ARSHAD	M	mohamedarshad.m@hexaware.com	9876543218	Delhi, India
DINESH	S	dinesh.s@hexaware.com	9876543219	Madurai, India

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

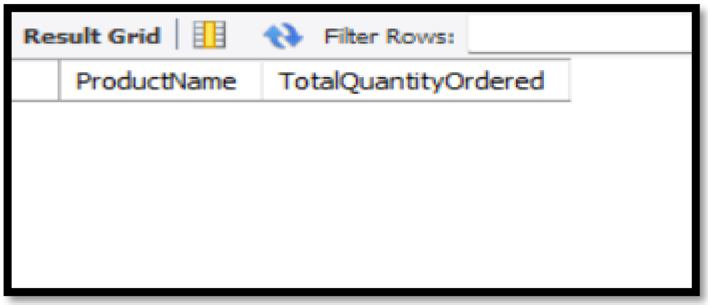
JOIN Products p ON od.ProductID = p.ProductID

WHERE p.Description LIKE '%electronic%' OR p.ProductName LIKE '%Electronic%'

GROUP BY p.ProductID

ORDER BY TotalQuantityOrdered DESC

LIMIT 1;



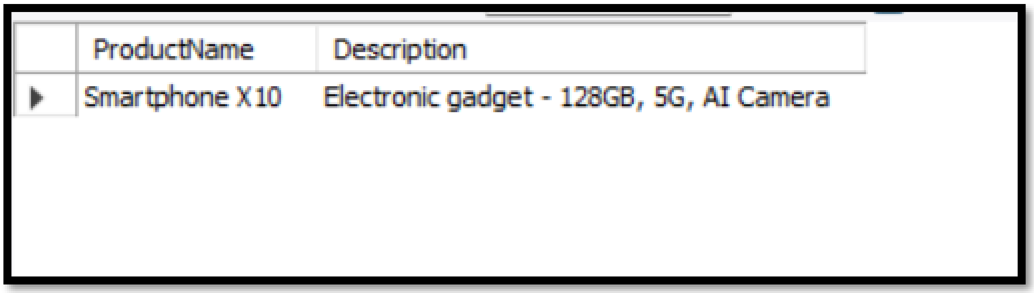
ProductName	TotalQuantityOrdered

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

SELECT ProductName, Description

FROM Products

WHERE Description LIKE '%electronic%';



ProductName	Description
Smartphone X10	Electronic gadget - 128GB, 5G, AI Camera

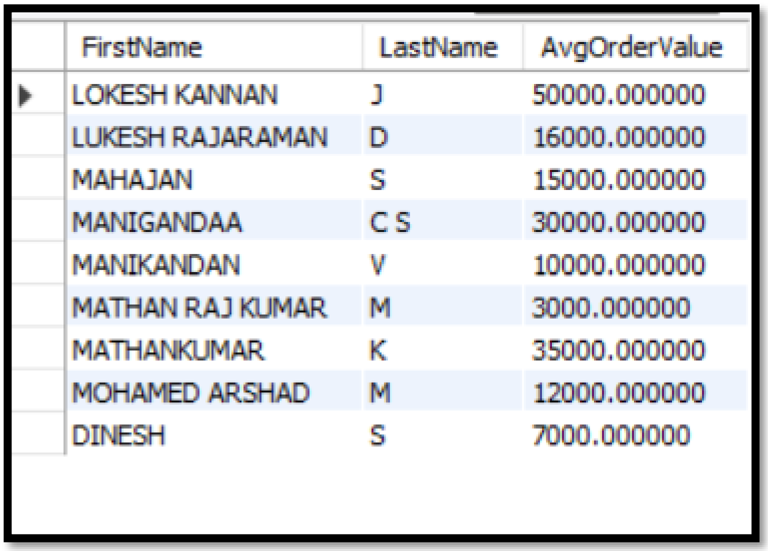
6. Write an SQL query to calculate the average order value for each customer. Include the customer's name and their average order value.

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

FROM Orders o

JOIN Customers c ON o.CustomerID = c.CustomerID

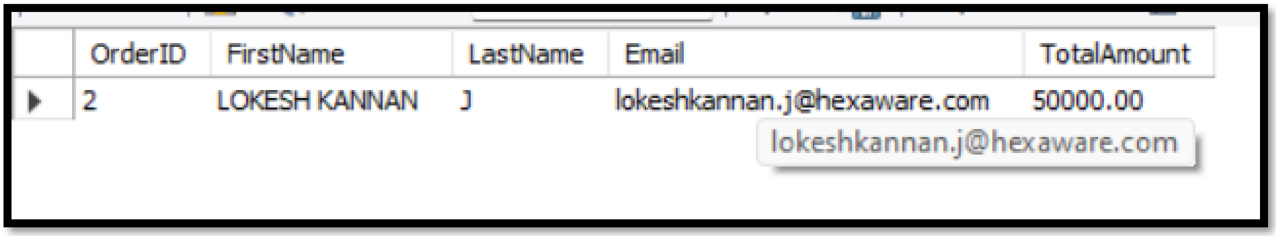
GROUP BY c.CustomerID;



FirstName	LastName	AvgOrderValue
LOKESH KANNAN	J	50000.000000
LUKESH RAJARAMAN	D	16000.000000
MAHAJAN	S	15000.000000
MANIGANDAA	C S	30000.000000
MANIKANDAN	V	10000.000000
MATHAN RAJ KUMAR	M	3000.000000
MATHANKUMAR	K	35000.000000
MOHAMED ARSHAD	M	12000.000000
DINESH	S	7000.000000

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

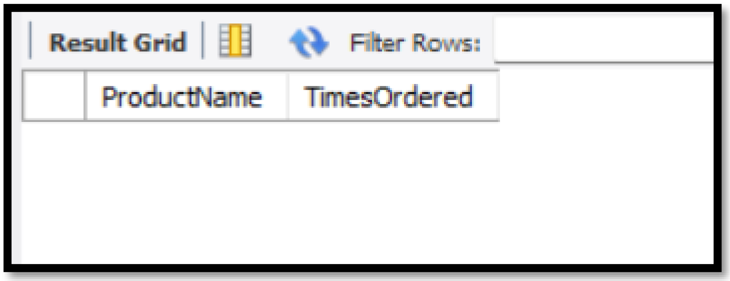
```
SELECT o.OrderID, c.FirstName, c.LastName, c.Email, o.TotalAmount
FROM Orders o
JOIN Customers c ON o.CustomerID = c.CustomerID
ORDER BY o.TotalAmount DESC
LIMIT 1;
```



OrderID	FirstName	LastName	Email	TotalAmount
2	LOKESH KANNAN	J	lokeshkannan.j@hexaware.com	50000.00

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

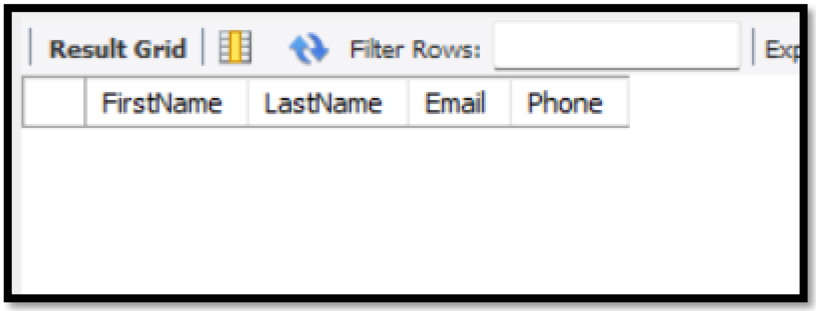
```
SELECT p.ProductName, COUNT(od.OrderDetailID) AS TimesOrdered
FROM OrderDetails od
JOIN Products p ON od.ProductID = p.ProductID
WHERE p.Description LIKE '%electronic%' OR p.ProductName LIKE '%Electronic%'
GROUP BY p.ProductID
ORDER BY TimesOrdered DESC;
```



ProductName	TimesOrdered

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.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 = 'Your Product Name';
```



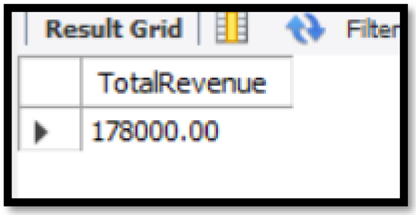
FirstName	LastName	Email	Phone

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(o.TotalAmount) AS TotalRevenue

FROM Orders o

WHERE o.OrderDate BETWEEN '2024-01-01' AND '2024-12-31';



TotalRevenue
178000.00

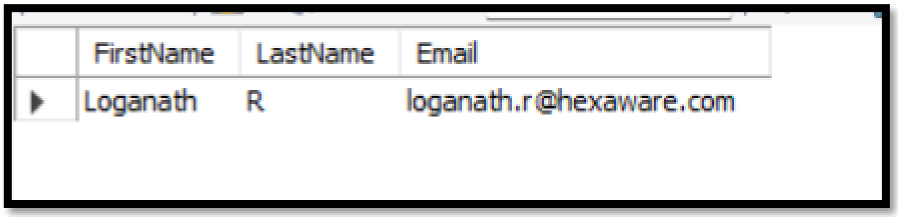
Task 4. Subquery and its type:

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

SELECT FirstName, LastName, Email

FROM Customers

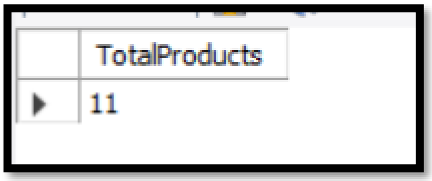
WHERE CustomerID NOT IN (SELECT DISTINCT CustomerID FROM Orders);



	FirstName	LastName	Email
▶	Loganath	R	loganath.r@hexaware.com

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

SELECT COUNT(*) AS TotalProducts FROM Products;



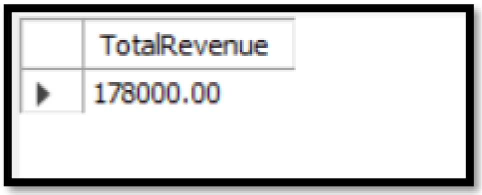
	TotalProducts
▶	11

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

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

FROM OrderDetails od

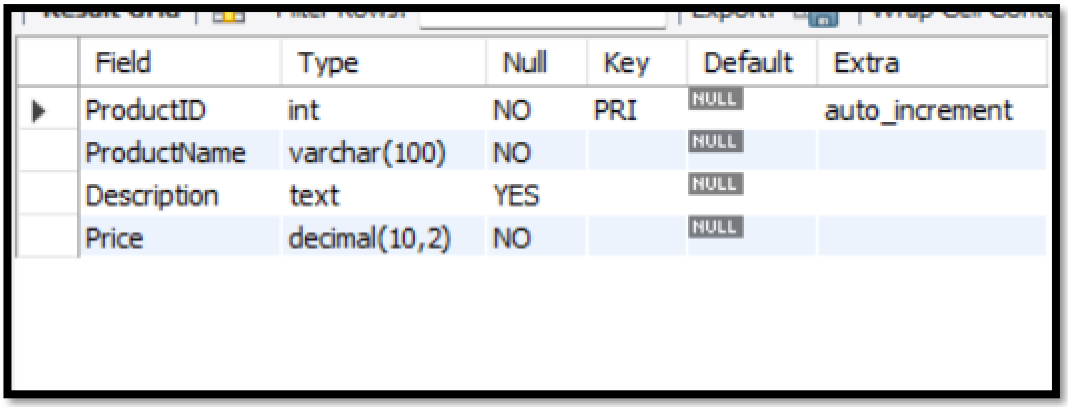
JOIN Products p ON od.ProductID = p.ProductID;



	TotalRevenue
▶	178000.00

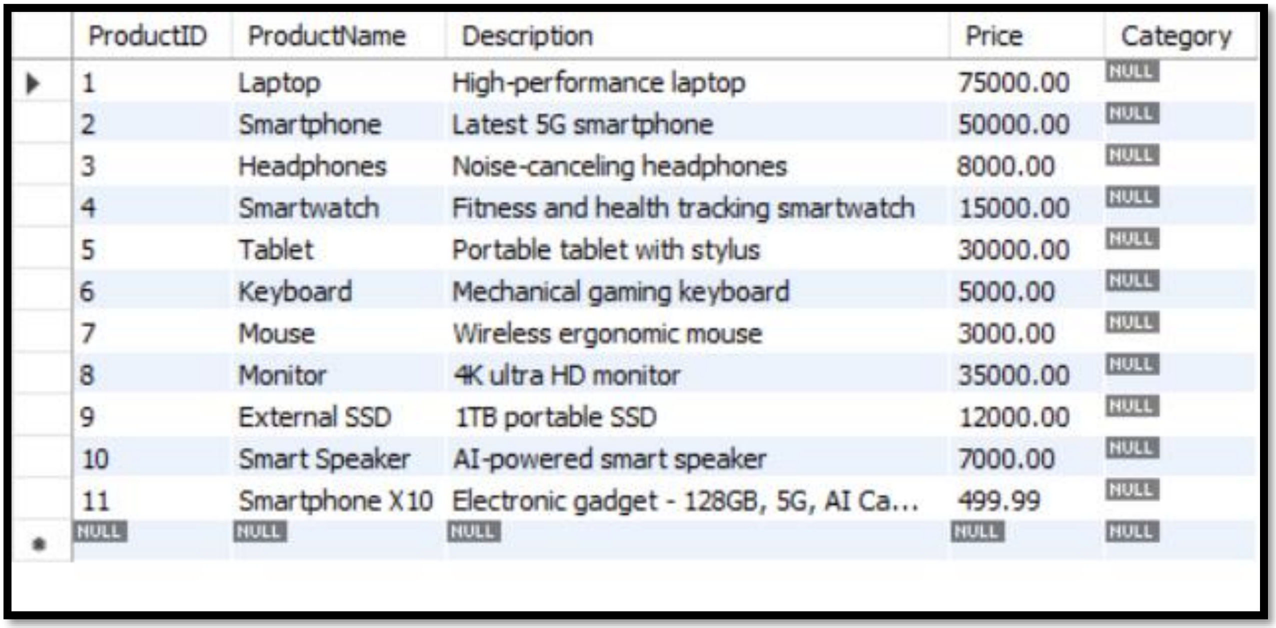
4. Write an SQL query to calculate the average quantity ordered for products in a specific category. Allow users to input the category name as a parameter.

DESC Products;



Field	Type	Null	Key	Default	Extra
ProductID	int	NO	PRI	NULL	auto_increment
ProductName	varchar(100)	NO		NULL	
Description	text	YES		NULL	
Price	decimal(10,2)	NO		NULL	

ALTER TABLE Products ADD COLUMN Category VARCHAR(255);



ProductID	ProductName	Description	Price	Category
1	Laptop	High-performance laptop	75000.00	NULL
2	Smartphone	Latest 5G smartphone	50000.00	NULL
3	Headphones	Noise-canceling headphones	8000.00	NULL
4	Smartwatch	Fitness and health tracking smartwatch	15000.00	NULL
5	Tablet	Portable tablet with stylus	30000.00	NULL
6	Keyboard	Mechanical gaming keyboard	5000.00	NULL
7	Mouse	Wireless ergonomic mouse	3000.00	NULL
8	Monitor	4K ultra HD monitor	35000.00	NULL
9	External SSD	1TB portable SSD	12000.00	NULL
10	Smart Speaker	AI-powered smart speaker	7000.00	NULL
11	Smartphone X10	Electronic gadget - 128GB, 5G, AI Ca...	499.99	NULL
NULL	NULL	NULL	NULL	NULL

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.

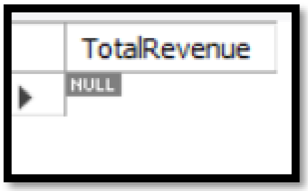
SELECT SUM(od.Quantity * p.Price) AS TotalRevenue

FROM Orders o

JOIN OrderDetails od ON o.OrderID = od.OrderID

JOIN Products p ON od.ProductID = p.ProductID

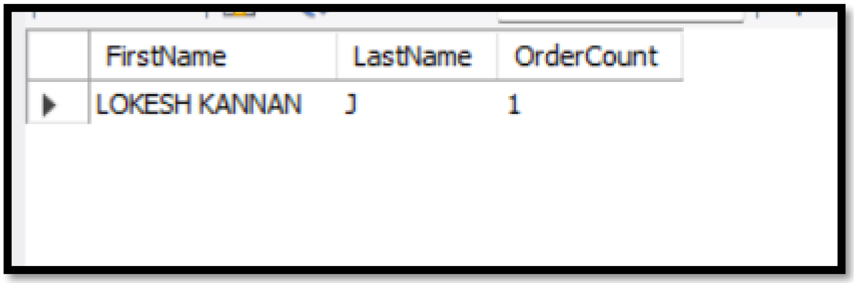
WHERE o.CustomerID = 123;



TotalRevenue
NULL

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.

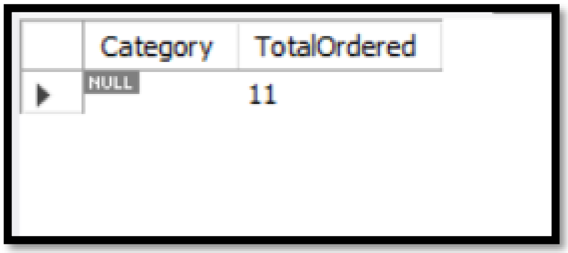
```
SELECT c.FirstName, c.LastName, COUNT(o.OrderID) AS OrderCount
FROM Customers c
JOIN Orders o ON c.CustomerID = o.CustomerID
GROUP BY c.CustomerID
ORDER BY OrderCount DESC
    LIMIT 1;
```



	FirstName	LastName	OrderCount
▶	LOKESH KANNAN	J	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.

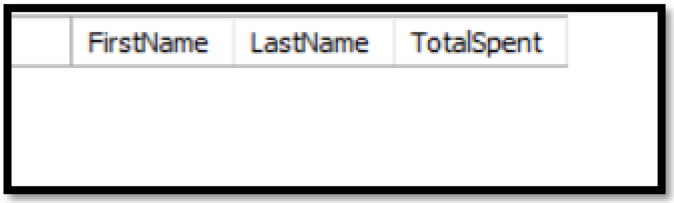
```
SELECT p.Category, SUM(od.Quantity) AS TotalOrdered
FROM OrderDetails od
JOIN Products p ON od.ProductID = p.ProductID
GROUP BY p.Category
ORDER BY TotalOrdered DESC
    LIMIT 1;
```



	Category	TotalOrdered
▶	NULL	11

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.

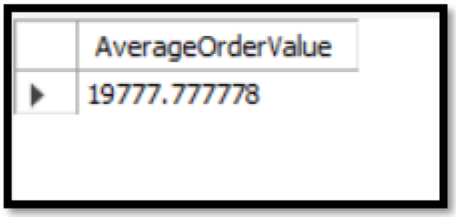
```
SELECT c.FirstName, c.LastName, SUM(od.Quantity * p.Price) AS TotalSpent
FROM Customers c
JOIN Orders o ON c.CustomerID = o.CustomerID
JOIN OrderDetails od ON o.OrderID = od.OrderID
JOIN Products p ON od.ProductID = p.ProductID
WHERE p.Category LIKE '%Electronic%'
GROUP BY c.CustomerID
ORDER BY TotalSpent DESC
    LIMIT 1;
```



FirstName	LastName	TotalSpent

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

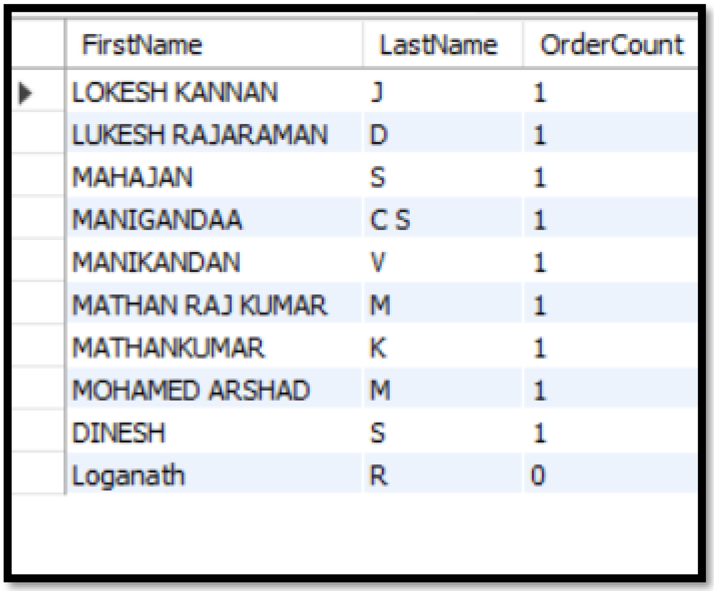
```
SELECT (SUM(od.Quantity * p.Price) / COUNT(DISTINCT o.OrderID)) AS AverageOrderValue
FROM Orders o
JOIN OrderDetails od ON o.OrderID = od.OrderID
JOIN Products p ON od.ProductID = p.ProductID;
```



AverageOrderValue
19777.777778

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, COUNT(o.OrderID) AS OrderCount
FROM Customers c
LEFT JOIN Orders o ON c.CustomerID = o.CustomerID
    GROUP BY c.CustomerID;
```



FirstName	LastName	OrderCount
LOKESH KANNAN	J	1
LUKESH RAJARAMAN	D	1
MAHAJAN	S	1
MANIGANDAA	C S	1
MANIKANDAN	V	1
MATHAN RAJ KUMAR	M	1
MATHANKUMAR	K	1
MOHAMED ARSHAD	M	1
DINESH	S	1
Loganath	R	0

HEXAWARE