Name: Khushi Joshi
Topic: TechShop, an Electronic Gadgets Shop

Assignment 1 – SQL & OOPS

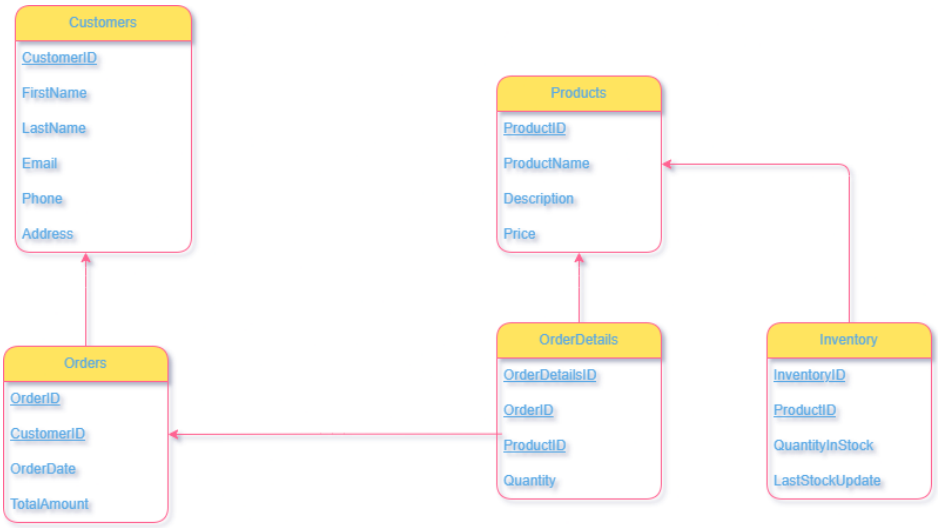
TechShop, an electronic gadgets shop

Task:1 Database Design

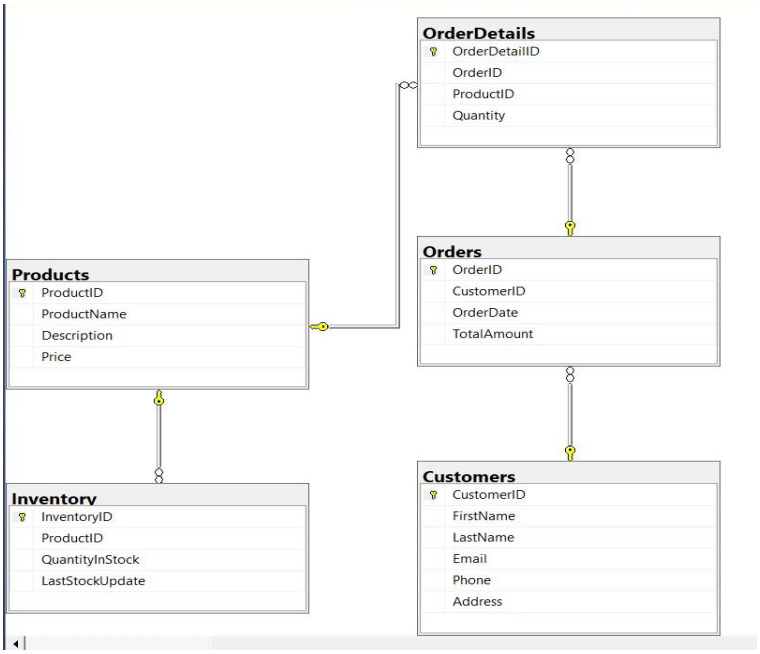
1. Create the database named "TechShop"

```
create database TechShop;
```

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



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



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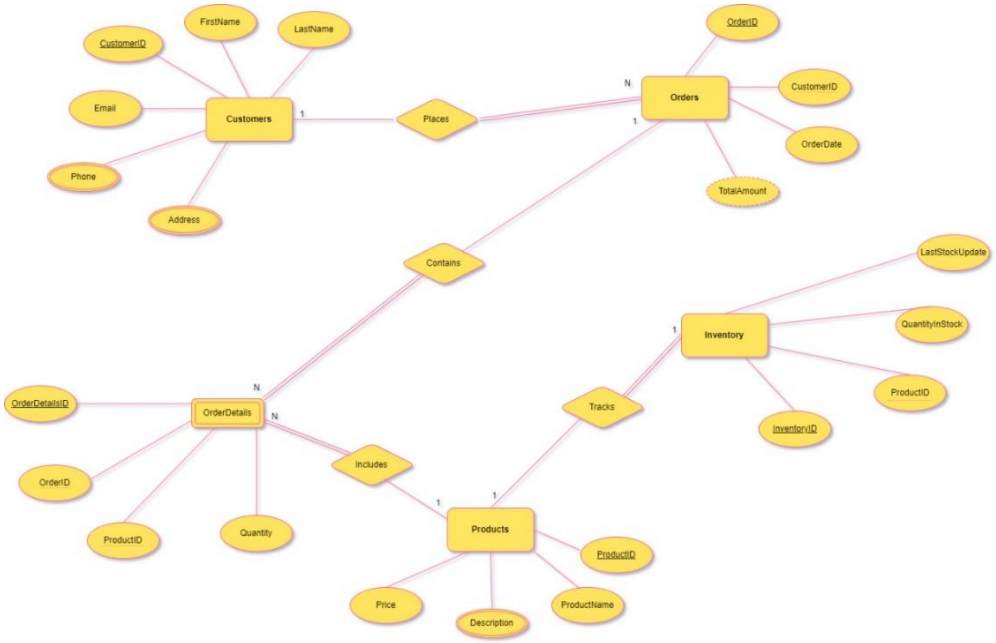

4. Create appropriate Primary Key and Foreign Key constraints for referential integrity.

```
CREATE TABLE Customers (

    CustomerID INT PRIMARY KEY IDENTITY(1,1),
    FirstName VARCHAR(50) NOT NULL,
    LastName VARCHAR(50) NOT NULL,
    Email VARCHAR(100) NOT NULL,
    Phone VARCHAR(20),
    Address VARCHAR(255)
);

CREATE TABLE Products (
    ProductID INT PRIMARY KEY IDENTITY(1000,1),
    ProductName VARCHAR(100) NOT NULL,
    Description VARCHAR(MAX),
    Price DECIMAL(10, 2) NOT NULL
);

CREATE TABLE Orders (
    OrderID INT PRIMARY KEY IDENTITY(100,1),
    CustomerID INT FOREIGN KEY REFERENCES Customers(CustomerID),
    OrderDate DATE NOT NULL,
    TotalAmount DECIMAL(10, 2) NOT NULL
);

CREATE TABLE OrderDetails (
    OrderDetailID INT PRIMARY KEY IDENTITY(10000,1),
    OrderID INT FOREIGN KEY REFERENCES Orders(OrderID),
    ProductID INT FOREIGN KEY REFERENCES Products(ProductID),
    Quantity INT
);

CREATE TABLE Inventory (
    InventoryID INT PRIMARY KEY IDENTITY(100000,1),
    ProductID INT FOREIGN KEY REFERENCES Products(ProductID),
    QuantityInStock INT NOT NULL,
    LastStockUpdate DATE NOT NULL
);
```

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

Customers Table:

```
INSERT INTO Customers (FirstName, LastName, Email, Phone, Address) VALUES
('Khushi', 'Joshi', 'khushijoshi@gmail.com', '9876543210', '123, Sector 17, Indore, Madhya Pradesh'),
('Allu', 'Arjun', 'alluarjun@example.com', '8765432109', '456, Vijay Nagar, Bhopal, Madhya Pradesh'),
('Suryakumar', 'Yadav', 'suryakumaryadav@example.com', '7654321098', '789, Old City, Jaipur, Rajasthan'),
('Yash', 'Agrawal', 'yashagrawal@example.com', '6543210987', '1011, New Colony, Delhi, Delhi'),
('Prabhas', 'Raju', 'prabhasraju@example.com', '5432109876', '1234, Model Town, Mumbai, Maharashtra'),
('Piyush', 'Menaria', 'piyushmenaria@example.com', '4321098765', '5678, Banjara Hills, Hyderabad, Telangana'),
('Nishtha', 'Kaigaonkar', 'nishthakaigaonkar@example.com', '3210987654', '9012, Indiranagar, Bengaluru, Karnataka'),
('Vibhuti', 'Jain', 'vibhutijain@example.com', '2109876543', '1314, Salt Lake City, Kolkata, West Bengal'),
('Akshay', 'Kumar', 'akshaykumar@example.com', '1098765432', '1516, Beach Road, Chennai, Tamil Nadu'),
('Dharmesh', 'Yelande', 'dharmeshyelande@example.com', '9876543210', '1718, MG Road, Kochi, Kerala');
```

Products Table:

```
INSERT INTO Products (ProductName, Description, Price) VALUES
('iPhone 16 Pro', '6.1-inch Super Retina XDR display, A16 Bionic chip, 12MP dual camera system', 129999.00),
('Samsung Galaxy S24 Ultra', '6.8-inch Dynamic AMOLED 2X display, Snapdragon 8 Gen 2, 200MP camera', 119999.00),
('OnePlus 11', '6.7-inch Fluid AMOLED display, Snapdragon 8 Gen 2, 50MP camera', 59999.00),
('Xiaomi 13 Pro', '6.7-inch AMOLED display, Snapdragon 8 Gen 2, 50MP camera', 69999.00),
('Google Pixel 7 Pro', '6.7-inch LTPO OLED display, Google Tensor G2, 50MP camera', 84999.00),
('MacBook Pro M2', '13.3-inch Liquid Retina XDR display, M2 chip, 8GB RAM, 256GB SSD', 149999.00),
('Dell XPS 13', '13.4-inch InfinityEdge display, Intel Core i7-13700H, 16GB RAM, 512GB SSD', 129999.00),
('Lenovo ThinkPad X1 Carbon', '14-inch OLED display, Intel Core i7-13600H, 16GB RAM, 512GB SSD', 139999.00),
('HP Spectre x360', '13.3-inch AMOLED display, Intel Core i7-13600H, 16GB RAM, 512GB SSD', 129999.00),
('Acer Predator Helios 16', '16-inch IPS display, Intel Core i9-13900HX, 32GB RAM, 2TB SSD', 179999.00);
```

Orders Table:

```
INSERT INTO Orders (CustomerID, OrderDate, TotalAmount) VALUES
(1, '2023-11-25', 129999.00),
(2, '2023-12-01', 59999.00),
(3, '2023-12-10', 69999.00),
(4, '2023-12-15', 149999.00),
(5, '2023-12-20', 119999.00),
(6, '2023-12-25', 84999.00),
(7, '2024-01-01', 129999.00),
```

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```
(8, '2024-01-05', 139999.00),
(9, '2024-01-10', 179999.00),
(10, '2024-01-15', 129999.00);
```

OrderDetails Table:

```
INSERT INTO OrderDetails (OrderID, ProductID, Quantity) VALUES
(100, 1000, 1),
(101, 1001, 1),
(102, 1002, 1),
(103, 1003, 1),
(104, 1004, 1),
(105, 1005, 1),
(106, 1006, 1),
(107, 1007, 1),
(108, 1008, 1),
(109, 1009, 1);
```

Inventory Table:

```
INSERT INTO Inventory (ProductID, QuantityInStock, LastStockUpdate) VALUES
(1000, 10, '2023-12-31'),
(1001, 15, '2023-12-31'),
(1002, 20, '2023-12-31'),
(1003, 5, '2023-12-31'),
(1004, 8, '2023-12-31'),
(1005, 12, '2023-12-31'),
(1006, 7, '2023-12-31'),
(1007, 11, '2023-12-31'),
(1008, 6, '2023-12-31'),
(1009, 9, '2023-12-31');
```

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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;
```

Results | Messages

	FirstName	LastName	Email
1	Khushi	Joshi	khushijoshi@gmail.com
2	Allu	Arjun	alluarjun@example.com
3	Suryakumar	Yadav	suryakumaryadav@example.com
4	Yash	Agrawal	yashagrawal@example.com
5	Prabhas	Raju	prabhasraju@example.com
6	Piyush	Menaria	piyushmenaria@example.com
7	Nishtha	Kaigaonkar	nishthakaigaonkar@example.com
8	Vibhuti	Jain	vibhutijain@example.com
9	Akshay	Kumar	akshaykumar@example.com
10	Dharmesh	Yelande	dharmeshyelande@example.com

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

```
Select OrderDate, FirstName, LastName from Orders, Customers
Where Orders.CustomerID = Customers.CustomerID;
```

Results | Messages

	OrderDate	FirstName	LastName
1	2023-11-25	Khushi	Joshi
2	2023-12-01	Allu	Arjun
3	2023-12-10	Suryakumar	Yadav
4	2023-12-15	Yash	Agrawal
5	2023-12-20	Prabhas	Raju
6	2023-12-25	Piyush	Menaria
7	2024-01-01	Nishtha	Kaigaonkar
8	2024-01-05	Vibhuti	Jain
9	2024-01-10	Akshay	Kumar
10	2024-01-15	Dharmesh	Yelande

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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 ('Pihu', 'Mehta', 'mehtapihu@example.com', '1234567890',
'456,Besatan,Surat, Gujrat');
select * from Customers;
```

Results Messages

	CustomerID	FirstName	LastName	Email	Phone	Address
1	1	Khushi	Joshi	khushijoshi@gmail.com	9876543210	123, Sector 17, Indore, Madhya Pradesh
2	2	Allu	Arjun	alluarjun@example.com	8765432109	456, Vijay Nagar, Bhopal, Madhya Pradesh
3	3	Suryakumar	Yadav	suryakumaryadav@example.com	7654321098	789, Old City, Jaipur, Rajasthan
4	4	Yash	Agrawal	yashagrawal@example.com	6543210987	1011, New Colony, Delhi, Delhi
5	5	Prabhas	Raju	prabhasraju@example.com	5432109876	1234, Model Town, Mumbai, Maharashtra
6	6	Piyush	Menaria	piyushmenaria@example.com	4321098765	5678, Banjara Hills, Hyderabad, Telangana
7	7	Nishtha	Kaigaonkar	nishthakaigaonkar@example.com	3210987654	9012, Indiranagar, Bengaluru, Karnataka
8	8	Vibhuti	Jain	vibhutijain@example.com	2109876543	1314, Salt Lake City, Kolkata, West Bengal
9	9	Akshay	Kumar	akshaykumar@example.com	1098765432	1516, Beach Road, Chennai, Tamil Nadu
10	10	Dharmesh	Yelande	dharmeshyelande@example.com	9876543210	1718, MG Road, Kochi, Kerala
11	11	Pihu	Mehta	mehtapihu@example.com	1234567890	456,Besatan,Surat, Gujrat

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;
select * from Products;
```

Results Messages

	ProductID	ProductName	Description	Price
1	1000	iPhone 16 Pro	6.1-inch Super Retina XDR display, A16 Bionic chip, 1...	142998.90
2	1001	Samsung Galaxy S24 Ultra	6.8-inch Dynamic AMOLED 2X display, Snapdragon 8 ...	131998.90
3	1002	OnePlus 11	6.7-inch Fluid AMOLED display, Snapdragon 8 Gen 2, ...	65998.90
4	1003	Xiaomi 13 Pro	6.7-inch AMOLED display, Snapdragon 8 Gen 2, 50M...	76998.90
5	1004	Google Pixel 7 Pro	6.7-inch LTPO OLED display, Google Tensor G2, 50M...	93498.90
6	1005	MacBook Pro M2	13.3-inch Liquid Retina XDR display, M2 chip, 8GB RA...	164998.90
7	1006	Dell XPS 13	13.4-inch InfinityEdge display, Intel Core i7-13700H, 1...	142998.90
8	1007	Lenovo ThinkPad X1 Carbon	14-inch OLED display, Intel Core i7-13600H, 16GB RA...	153998.90
9	1008	HP Spectre x360	13.3-inch AMOLED display, Intel Core i7-13600H, 16G...	142998.90
10	1009	Acer Predator Helios 16	16-inch IPS display, Intel Core i9-13900HX, 32GB RA...	197998.90

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.

```
declare @orderid int=102
DELETE FROM OrderDetails
WHERE OrderID = @orderid;
DELETE FROM Orders
WHERE OrderID = @orderid;
select * from OrderDetails;
```

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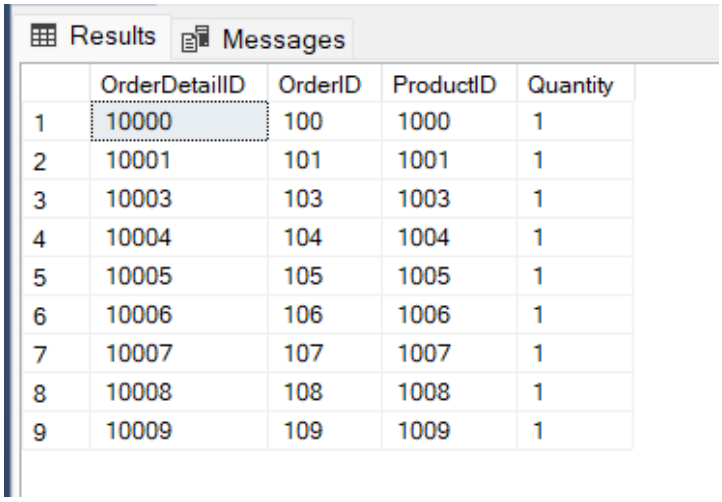
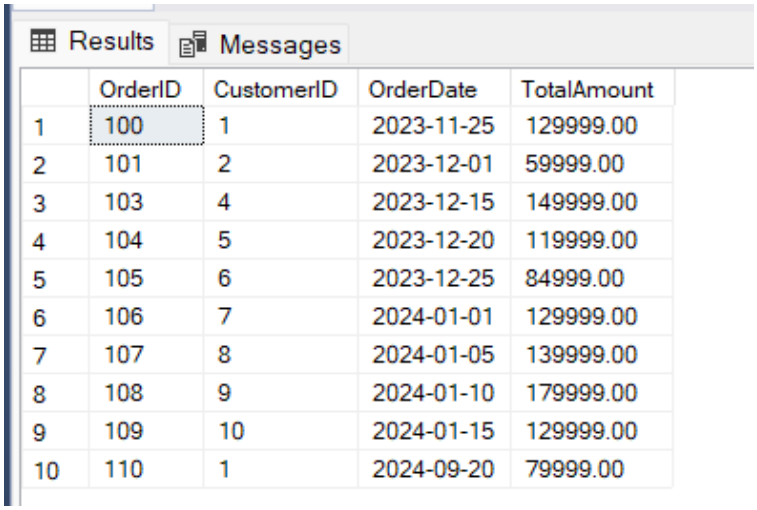


Results | Messages

	OrderDetailID	OrderID	ProductID	Quantity
1	10000	100	1000	1
2	10001	101	1001	1
3	10003	103	1003	1
4	10004	104	1004	1
5	10005	105	1005	1
6	10006	106	1006	1
7	10007	107	1007	1
8	10008	108	1008	1
9	10009	109	1009	1

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 (1, '2024-09-20', 79999.00);
select * from Orders;
```



Results | Messages

	OrderID	CustomerID	OrderDate	TotalAmount
1	100	1	2023-11-25	129999.00
2	101	2	2023-12-01	59999.00
3	103	4	2023-12-15	149999.00
4	104	5	2023-12-20	119999.00
5	105	6	2023-12-25	84999.00
6	106	7	2024-01-01	129999.00
7	107	8	2024-01-05	139999.00
8	108	9	2024-01-10	179999.00
9	109	10	2024-01-15	129999.00
10	110	1	2024-09-20	79999.00

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 = 'newemail@example.com',
    Address = '789, New Address, City, State'
WHERE CustomerID = 3;
select * from Customers;
```

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Results Messages

	CustomerID	FirstName	LastName	Email	Phone	Address
1	1	Khushi	Joshi	khushijoshi@gmail.com	9876543210	123, Sector 17, Indore, Madhya Pradesh
2	2	Allu	Arjun	alluarjun@example.com	8765432109	456, Vijay Nagar, Bhopal, Madhya Pradesh
3	3	Suryakumar	Yadav	newemail@example.com	7654321098	789, New Address, City, State
4	4	Yash	Agrawal	yashagrawal@example.com	6543210987	1011, New Colony, Delhi, Delhi
5	5	Prabhas	Raju	prabhasraju@example.com	5432109876	1234, Model Town, Mumbai, Maharashtra
6	6	Piyush	Menaria	piyushmenaria@example.com	4321098765	5678, Banjara Hills, Hyderabad, Telangana
7	7	Nishtha	Kaigaonkar	nishthakaigaonkar@example.com	3210987654	9012, Indiranagar, Bengaluru, Karnataka
8	8	Vibhuti	Jain	vibhutijain@example.com	2109876543	1314, Salt Lake City, Kolkata, West Bengal
9	9	Akshay	Kumar	akshaykumar@example.com	1098765432	1516, Beach Road, Chennai, Tamil Nadu
10	10	Dharmesh	Yelande	dharmeshyelande@example.com	9876543210	1718, MG Road, Kochi, Kerala
11	11	Pihu	Mehta	mehtapihu@example.com	1234567890	456,Besatan,Surat, Gujrat

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
SET TotalAmount = (
    SELECT (od.Quantity * p.Price)
    FROM OrderDetails od
    JOIN Products p ON od.ProductID = p.ProductID
    WHERE od.OrderID = Orders.OrderID
);
select * from Orders;
```

Results Messages

	OrderID	CustomerID	OrderDate	TotalAmount
1	100	1	2023-11-25	142998.90
2	101	2	2023-12-01	131998.90
3	103	4	2023-12-15	76998.90
4	104	5	2023-12-20	93498.90
5	105	6	2023-12-25	164998.90
6	106	7	2024-01-01	142998.90
7	107	8	2024-01-05	153998.90
8	108	9	2024-01-10	142998.90
9	109	10	2024-01-15	197998.90
10	110	1	2024-09-20	197998.90

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.

```
DECLARE @CustomerID INT = 6
DELETE FROM OrderDetails
WHERE OrderID IN (
    SELECT OrderID
    FROM Orders
    WHERE CustomerID = @CustomerID
);
```

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```
DELETE FROM Orders
WHERE CustomerID = @CustomerID;
select * from OrderDetails;
```

Results Messages

	OrderDetailID	OrderID	ProductID	Quantity
1	10000	100	1000	1
2	10001	101	1001	1
3	10003	103	1003	1
4	10004	104	1004	1
5	10006	106	1006	1
6	10007	107	1007	1
7	10008	108	1008	1
8	10009	109	1009	1
9	10010	110	1009	1

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 ('Smartwatch X200', 'A high-end smartwatch with various health tracking
features and a sleek design.', 19999.00);
select * from Products;
```

Results Messages

	ProductID	ProductName	Description	Price
1	1000	iPhone 16 Pro	6.1-inch Super Retina XDR display, A16 Bionic chip, 1...	142998.90
2	1001	Samsung Galaxy S24 Ultra	6.8-inch Dynamic AMOLED 2X display, Snapdragon 8 ...	131998.90
3	1002	OnePlus 11	6.7-inch Fluid AMOLED display, Snapdragon 8 Gen 2, ...	65998.90
4	1003	Xiaomi 13 Pro	6.7-inch AMOLED display, Snapdragon 8 Gen 2, 50M...	76998.90
5	1004	Google Pixel 7 Pro	6.7-inch LTPO OLED display, Google Tensor G2, 50M...	93498.90
6	1005	MacBook Pro M2	13.3-inch Liquid Retina XDR display, M2 chip, 8GB RA...	164998.90
7	1006	Dell XPS 13	13.4-inch InfinityEdge display, Intel Core i7-13700H, 1...	142998.90
8	1007	Lenovo ThinkPad X1 Carbon	14-inch OLED display, Intel Core i7-13600H, 16GB RA...	153998.90
9	1008	HP Spectre x360	13.3-inch AMOLED display, Intel Core i7-13600H, 16G...	142998.90
10	1009	Acer Predator Helios 16	16-inch IPS display, Intel Core i9-13900HX, 32GB RA...	197998.90
11	1010	Smartwatch X200	A high-end smartwatch with various health tracking fea...	19999.00

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 Status VARCHAR(50);
UPDATE Orders SET Status = 'Shipped' WHERE OrderID = 100;
UPDATE Orders SET Status = 'Pending' WHERE OrderID = 101;
UPDATE Orders SET Status = 'Pending' WHERE OrderID = 103;
UPDATE Orders SET Status = 'Delivered' WHERE OrderID = 106;
UPDATE Orders SET Status = 'Processing' WHERE OrderID = 107;
UPDATE Orders SET Status = 'Cancelled' WHERE OrderID = 108;
UPDATE Orders SET Status = 'Cancelled' WHERE OrderID = 109;
```

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```
UPDATE Orders SET Status = 'Shipped' WHERE OrderID = 110;
UPDATE Orders SET Status = 'Shipped' WHERE OrderID = 104;
select * from Orders;
```

Results | Messages

	OrderID	CustomerID	OrderDate	TotalAmount	Status
1	100	1	2023-11-25	142998.90	Shipped
2	101	2	2023-12-01	131998.90	Pending
3	103	4	2023-12-15	76998.90	Pending
4	104	5	2023-12-20	93498.90	Shipped
5	106	7	2024-01-01	142998.90	Delivered
6	107	8	2024-01-05	153998.90	Processing
7	108	9	2024-01-10	142998.90	Cancelled
8	109	10	2024-01-15	197998.90	Cancelled
9	110	1	2024-09-20	197998.90	Shipped

```
DECLARE @OrderID INT = 101
DECLARE @NewStatus VARCHAR(50) = 'shipped'
UPDATE Orders
SET Status = @NewStatus
WHERE OrderID = @OrderID;
select * from Orders;
```

Results | Messages

	OrderID	CustomerID	OrderDate	TotalAmount	Status
1	100	1	2023-11-25	142998.90	Shipped
2	101	2	2023-12-01	131998.90	shipped
3	103	4	2023-12-15	76998.90	Pending
4	104	5	2023-12-20	93498.90	Shipped
5	106	7	2024-01-01	142998.90	Delivered
6	107	8	2024-01-05	153998.90	Processing
7	108	9	2024-01-10	142998.90	Cancelled
8	109	10	2024-01-15	197998.90	Cancelled
9	110	1	2024-09-20	197998.90	Shipped

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 OrderCount INT DEFAULT 0;
UPDATE Customers
SET OrderCount = (
    SELECT COUNT(*)
    FROM Orders
    WHERE Orders.CustomerID = Customers.CustomerID
);
select * from Customers;
```

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Results Messages

	CustomerID	FirstName	LastName	Email	Phone	Address	OrderCount
1	1	Khushi	Joshi	khushijoshi@gmail.com	9876543210	123, Sector 17, Indore, Madhya Pradesh	2
2	2	Allu	Arjun	alluarjun@example.com	8765432109	456, Vijay Nagar, Bhopal, Madhya Pradesh	1
3	3	Suryakumar	Yadav	newemail@example.com	7654321098	789, New Address, City, State	0
4	4	Yash	Agrawal	yashagrawal@example.com	6543210987	1011, New Colony, Delhi, Delhi	1
5	5	Prabhas	Raju	prabhasraju@example.com	5432109876	1234, Model Town, Mumbai, Maharashtra	1
6	6	Piyush	Menaria	piyushmenaria@example.com	4321098765	5678, Banjara Hills, Hyderabad, Telangana	0
7	7	Nishtha	Kaigaonkar	nishthakaigaonkar@example.com	3210987654	9012, Indiranagar, Bengaluru, Karnataka	1
8	8	Vibhuti	Jain	vibhutijain@example.com	2109876543	1314, Salt Lake City, Kolkata, West Bengal	1
9	9	Akshay	Kumar	akshaykumar@example.com	1098765432	1516, Beach Road, Chennai, Tamil Nadu	1
10	10	Dharmesh	Yelande	dharmeshyelande@example.com	9876543210	1718, MG Road, Kochi, Kerala	1
11	11	Pihu	Mehta	mehtapihu@example.com	1234567890	456,Besatan,Surat, Gujrat	0

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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, O.TotalAmount, C.FirstName, C.LastName, C.Email,
C.Phone
FROM Orders AS O
JOIN Customers AS C ON O.CustomerID = C.CustomerID;
```

Results | Messages

	OrderID	OrderDate	TotalAmount	FirstName	LastName	Email	Phone
1	100	2023-11-25	142998.90	Khushi	Joshi	khushijoshi@gmail.com	9876543210
2	101	2023-12-01	131998.90	Allu	Arjun	alluarjun@example.com	8765432109
3	103	2023-12-15	76998.90	Yash	Agrawal	yashagrawal@example.com	6543210987
4	104	2023-12-20	93498.90	Prabhas	Raju	prabhasraju@example.com	5432109876
5	106	2024-01-01	142998.90	Nishtha	Kaigaonkar	nishthakaigaonkar@example.com	3210987654
6	107	2024-01-05	153998.90	Vibhuti	Jain	vibhutijain@example.com	2109876543
7	108	2024-01-10	142998.90	Akshay	Kumar	akshaykumar@example.com	1098765432
8	109	2024-01-15	197998.90	Dharmesh	Yelande	dharmeshyelande@example.com	9876543210
9	110	2024-09-20	197998.90	Khushi	Joshi	khushijoshi@gmail.com	9876543210

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 AS OD
JOIN Products AS P ON OD.ProductID = P.ProductID
GROUP BY P.ProductName;
```

Results | Messages

	ProductName	TotalRevenue
1	Acer Predator Helios 16	395997.80
2	Dell XPS 13	142998.90
3	Google Pixel 7 Pro	93498.90
4	HP Spectre x360	142998.90
5	iPhone 16 Pro	142998.90
6	Lenovo ThinkPad X1 Carbon	153998.90
7	Samsung Galaxy S24 Ultra	131998.90
8	Xiaomi 13 Pro	76998.90

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

```
SELECT C.FirstName, C.LastName, C.Email, C.Phone
FROM Customers AS C
JOIN Orders AS O ON C.CustomerID = O.CustomerID
GROUP BY C.CustomerID, C.FirstName, C.LastName, C.Email, C.Phone;
```

Results Messages

	FirstName	LastName	Email	Phone
1	Khushi	Joshi	khushijoshi@gmail.com	9876543210
2	Allu	Arjun	alluarjun@example.com	8765432109
3	Yash	Agrawal	yashagrawal@example.com	6543210987
4	Prabhas	Raju	prabhasraju@example.com	5432109876
5	Nishtha	Kaigaonkar	nishthakaigaonkar@example.com	3210987654
6	Vibhuti	Jain	vibhutijain@example.com	2109876543
7	Akshay	Kumar	akshaykumar@example.com	1098765432
8	Dharmesh	Yelande	dharmeshyelande@example.com	9876543210

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 top 1 p.ProductName,
       SUM(od.Quantity) AS TotalQuantityOrdered
FROM OrderDetails od
JOIN Products p ON od.ProductID = p.ProductID
JOIN Inventory i ON p.ProductID = i.ProductID
WHERE i.QuantityInStock > 0
GROUP BY p.ProductName
ORDER BY TotalQuantityOrdered DESC;
```

Results Messages

	ProductName	TotalQuantityOrdered
1	Acer Predator Helios 16	2

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

```
ALTER TABLE Products
ADD Categories VARCHAR(255);
UPDATE Products
SET Categories = 'Smartphones'
WHERE ProductID IN (1000, 1001, 1002, 1003, 1004);
UPDATE Products
SET Categories = 'Laptops'
WHERE ProductID IN (1005, 1006, 1007, 1008, 1009);
UPDATE Products
SET Categories = 'Smartwatches'
WHERE ProductID = 1010;

SELECT ProductName,
       Categories AS CategoryName
FROM Products;
```

	ProductName	CategoryName
1	iPhone 16 Pro	Smartphones
2	Samsung Galaxy S24 Ultra	Smartphones
3	OnePlus 11	Smartphones
4	Xiaomi 13 Pro	Smartphones
5	Google Pixel 7 Pro	Smartphones
6	MacBook Pro M2	Laptops
7	Dell XPS 13	Laptops
8	Lenovo ThinkPad X1 Carbon	Laptops
9	HP Spectre x360	Laptops
10	Acer Predator Helios 16	Laptops
11	Smartwatch X200	Smartwatches

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 AverageOrderValue
FROM Orders o
JOIN Customers c ON o.CustomerID = c.CustomerID
GROUP BY c.CustomerID, c.FirstName, c.LastName;
```

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Results Messages

	FirstName	LastName	AverageOrderValue
1	Khushi	Joshi	170498.900000
2	Allu	Arjun	131998.900000
3	Yash	Agrawal	76998.900000
4	Prabhas	Raju	93498.900000
5	Nishtha	Kaigaonkar	142998.900000
6	Vibhuti	Jain	153998.900000
7	Akshay	Kumar	142998.900000
8	Dharmesh	Yelande	197998.900000

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,
               c.Phone,
               o.TotalAmount AS TotalRevenue
        FROM Orders o
        JOIN Customers c ON o.CustomerID = c.CustomerID
        WHERE o.TotalAmount = (
            SELECT MAX(TotalAmount)
            FROM Orders
);
```

Results Messages

	OrderID	FirstName	LastName	Email	Phone	TotalRevenue
1	109	Dharmesh	Yelande	dharmeshyelande@example.com	9876543210	197998.90
2	110	Khushi	Joshi	khushijoshi@gmail.com	9876543210	197998.90

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

```
        SELECT p.ProductName,
               COUNT(od.OrderID) AS NumberOfOrders
        FROM Products p
        LEFT JOIN OrderDetails od ON p.ProductID = od.ProductID
        GROUP BY p.ProductID, p.ProductName;
```

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Results Messages

	ProductName	NumberOfOrders
1	iPhone 16 Pro	1
2	Samsung Galaxy S24 Ultra	1
3	OnePlus 11	0
4	Xiaomi 13 Pro	1
5	Google Pixel 7 Pro	1
6	MacBook Pro M2	0
7	Dell XPS 13	1
8	Lenovo ThinkPad X1 Carbon	1
9	HP Spectre x360	1
10	Acer Predator Helios 16	2
11	Smartwatch X200	0

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.

```
DECLARE @ProductName NVARCHAR(255) = 'iPhone 16 Pro';
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 = @ProductName;
```

Results Messages

	CustomerID	FirstName	LastName	Email	Phone
1	1	Khushi	Joshi	khushijoshi@gmail.com	9876543210

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.

```
DECLARE @StartDate DATE = '2023-11-01';
DECLARE @EndDate DATE = '2023-12-31';
SELECT SUM(TotalAmount) AS TotalRevenue
FROM Orders
WHERE OrderDate BETWEEN @StartDate AND @EndDate;
```

Results Messages

	TotalRevenue
1	445495.60

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Topic: TechShop, an Electronic Gadgets Shop

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, c.Phone, c.Address
FROM Customers c
LEFT JOIN Orders o ON c.CustomerID = o.CustomerID
WHERE o.OrderID IS NULL;
```

Results Messages

	CustomerID	FirstName	LastName	Email	Phone	Address
1	3	Suryakumar	Yadav	newemail@example.com	7654321098	789, New Address, City, State
2	6	Piyush	Menaria	piyushmenaria@example.com	4321098765	5678, Banjara Hills, Hyderabad, Telangana
3	11	Pihu	Mehta	mehtapihu@example.com	1234567890	456,Besatan,Surat, Gujrat

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

```
SELECT SUM(QuantityInStock) AS TotalProductsAvailable
FROM Inventory;
```

Results Messages

	TotalProductsAvailable
1	103

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

```
SELECT SUM(TotalAmount) AS TotalRevenue
FROM Orders
WHERE Status IN ('Delivered', 'Shipped');
```

Results Messages

	TotalRevenue
1	709494.50

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 p.Categories, AVG(od.Quantity) AS AvgQuantityOrdered
FROM Products p
JOIN OrderDetails od ON p.ProductID = od.ProductID
WHERE p.Categories = 'Laptops'
GROUP BY p.Categories;
```

Results Messages

	Categories	AvgQuantityOrdered
1	Laptops	1

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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.

```
DECLARE @customerID INT;
SET @customerID = 9;
SELECT c.CustomerID, CONCAT(c.FirstName, ' ', c.LastName) AS CustomerName,
SUM(o.TotalAmount) AS TotalRevenue
FROM Customers c
JOIN Orders o ON c.CustomerID = o.CustomerID
WHERE c.CustomerID = @customerID
GROUP BY c.CustomerID, c.FirstName, c.LastName;
```

Results Messages

	CustomerID	CustomerName	TotalRevenue
1	9	Akshay Kumar	142998.90

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

Results Messages

	CustomerID	CustomerName	OrderCount
1	1	Khushi Joshi	2
2	2	Allu Arjun	1
3	4	Yash Agrawal	1
4	5	Prabhas Raju	1
5	7	Nishtha Kaigaonkar	1
6	8	Vibhuti Jain	1
7	9	Akshay Kumar	1
8	10	Dharmesh Yelande	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 TOP 1 p.Categories, SUM(od.Quantity) AS TotalQuantityOrdered
FROM Products p
JOIN OrderDetails od ON p.ProductID = od.ProductID
GROUP BY p.Categories
ORDER BY TotalQuantityOrdered DESC;
```

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Results Messages

	Categories	TotalQuantityOrdered
1	Laptops	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 TOP 1 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
GROUP BY C.FirstName, C.LastName
ORDER BY TotalSpent DESC;
```

Results Messages

	FirstName	LastName	TotalSpent
1	Khushi	Joshi	340997.80

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

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

Results Messages

	CustomerID	FirstName	LastName	AverageOrderValue
1	1	Khushi	Joshi	170498.900000
2	2	Allu	Arjun	131998.900000
3	4	Yash	Agrawal	76998.900000
4	5	Prabhas	Raju	93498.900000
5	7	Nishtha	Kaigaonkar	142998.900000
6	8	Vibhuti	Jain	153998.900000
7	9	Akshay	Kumar	142998.900000
8	10	Dharmesh	Yelande	197998.900000

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,
    c.OrderCount as TotalOrders
FROM
```

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```
        Customers c
    ORDER BY
        TotalOrders DESC;
```

Results | Messages

	FirstName	LastName	TotalOrders
1	Khushi	Joshi	2
2	Allu	Arjun	1
3	Yash	Agrawal	1
4	Prabhas	Raju	1
5	Nishtha	Kaigaonkar	1
6	Vibhuti	Jain	1
7	Akshay	Kumar	1
8	Dharmesh	Yelande	1
9	Pihu	Mehta	0
10	Piyush	Menaria	0
11	Suryakumar	Yadav	0