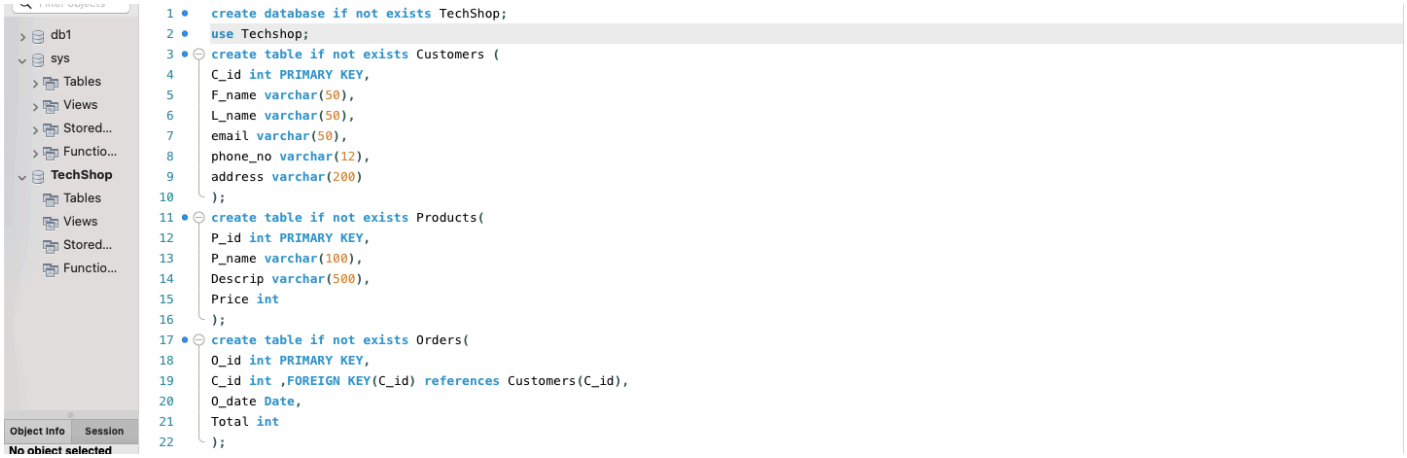
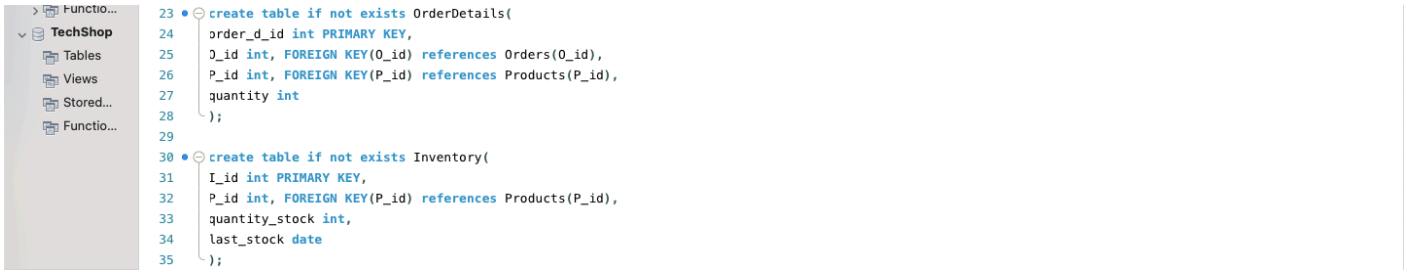
ASSIGNMENT:1

TechShop

Task:1. Database Design:

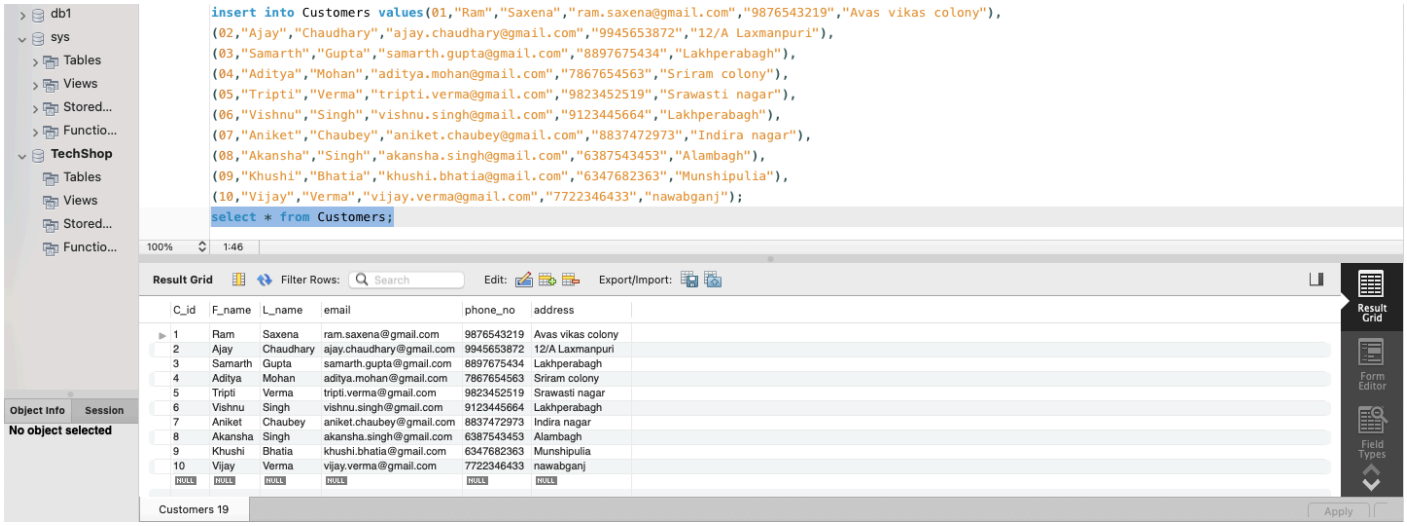
1. Create the database named "TechShop"
2. Define the schema for the Customers, Products, Orders, OrderDetails and Inventory tables based on the provided schema.
3. Create appropriate Primary Key and Foreign Key constraints for referential integrity.

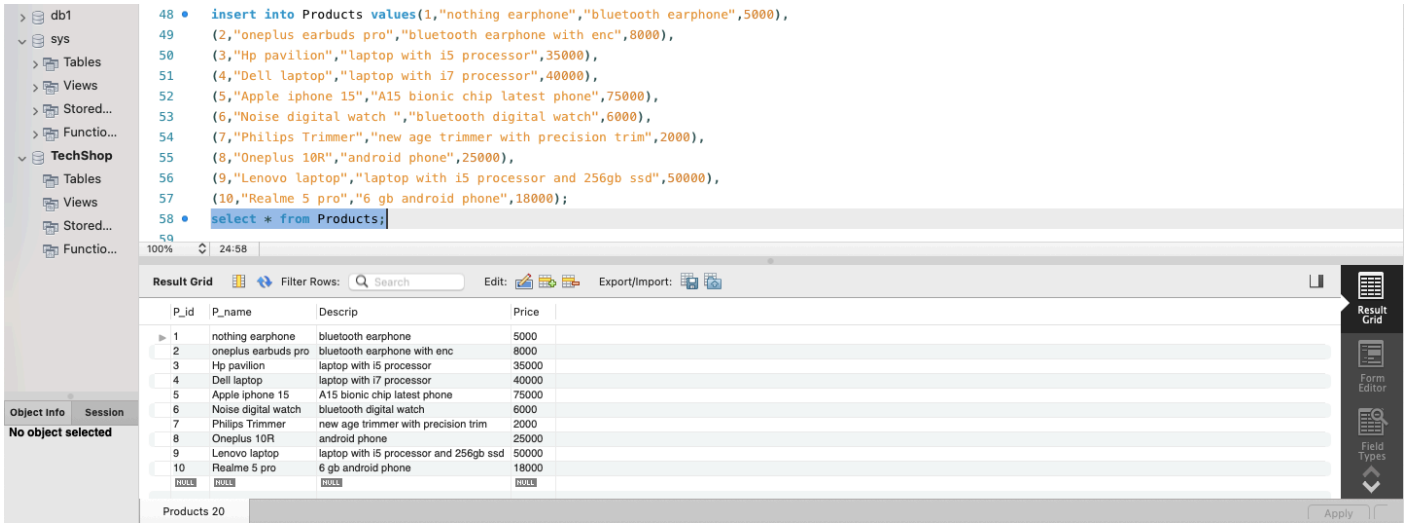


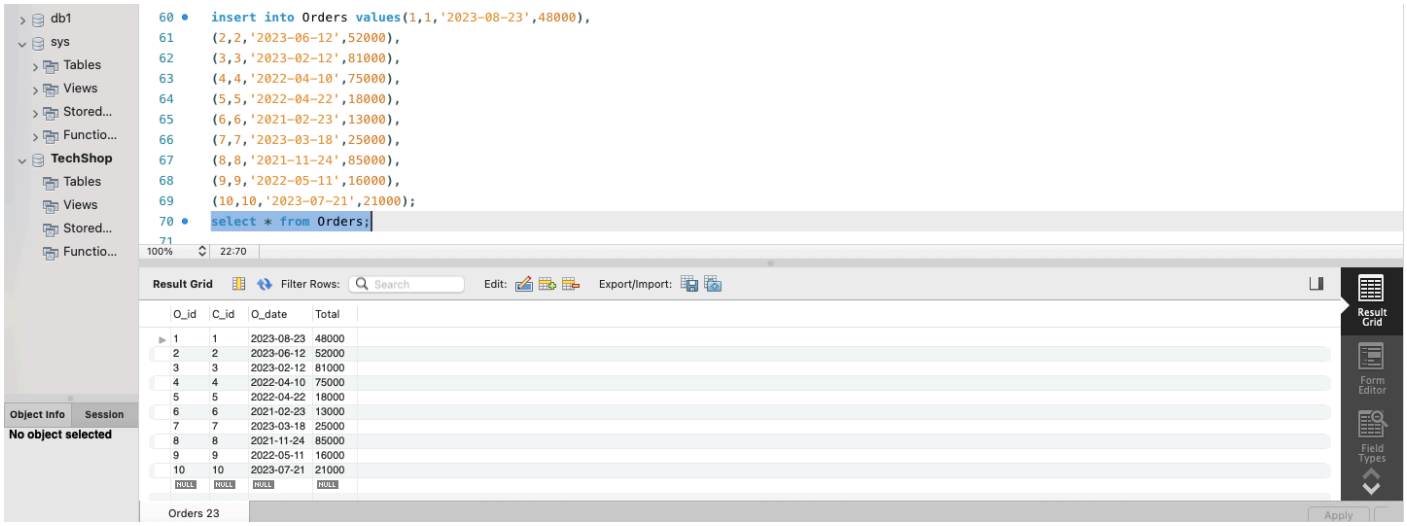


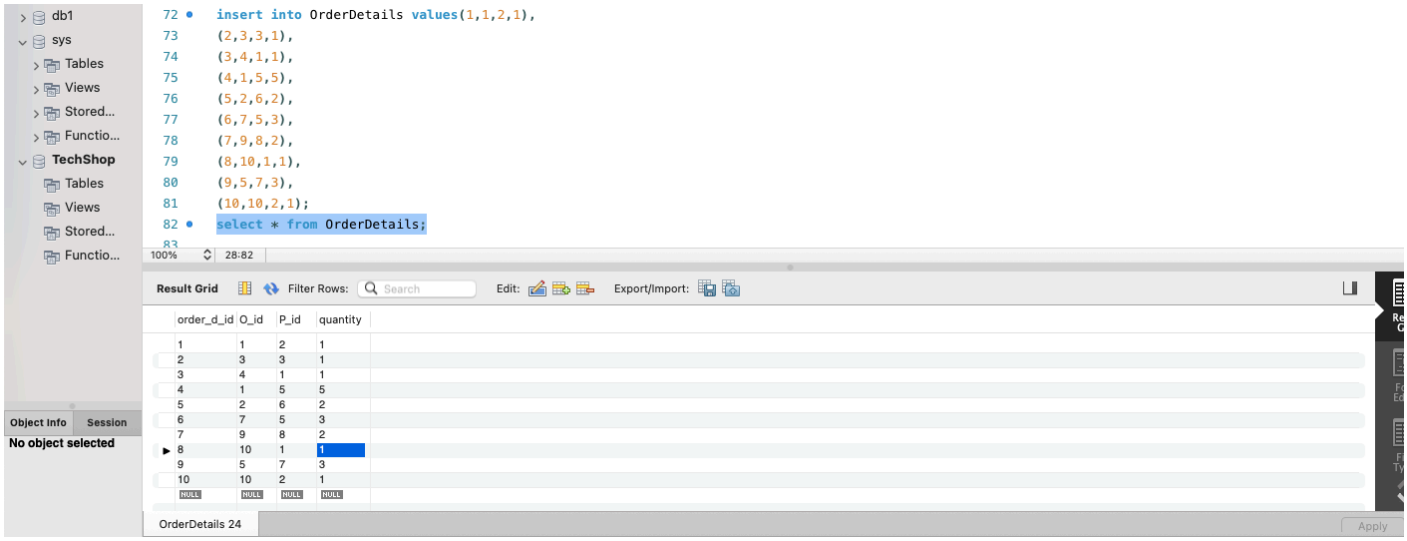
4. Insert at least 10 sample records into each of the following tables.

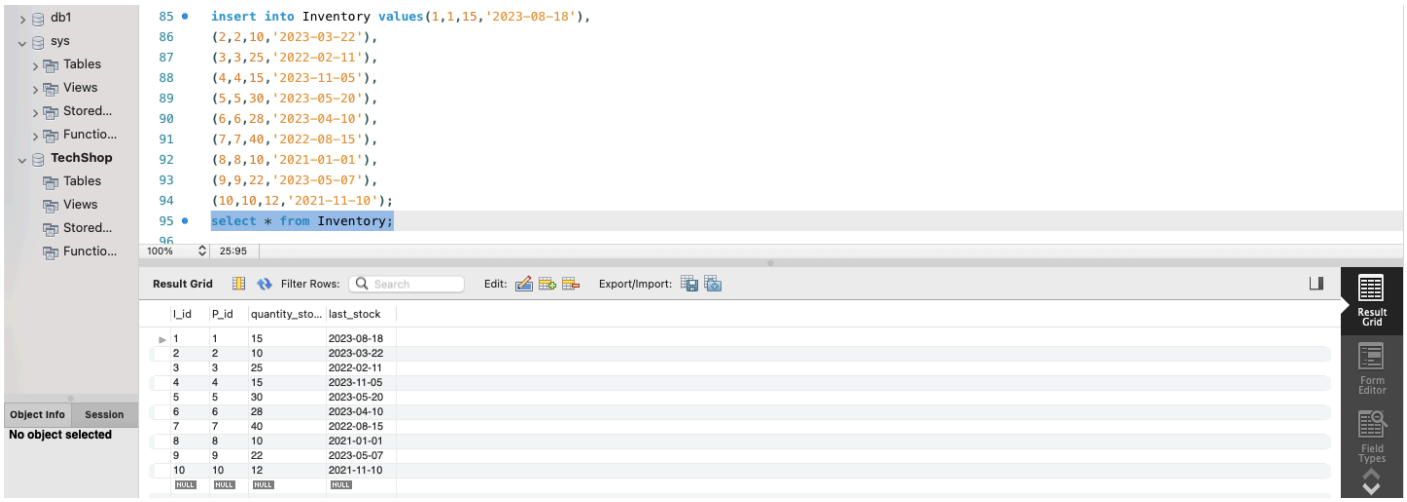
   a. Customers
   b. Products
   c. Orders
   d. OrderDetails


db1
sys
Tables
Views
Stored...
Functio...
TechShop
Tables
Views
Stored...
Functio...
Object Info
Session
No object selected
insert into Customers values(01,"Ram","Saxena","ram.saxena@gmail.com","9876543219","Avas vikas colony"),
(02,"Ajay","Chaudhary","ajay.chaudhary@gmail.com","9945653872","12/A Laxmanpuri"),
(03,"Samarth","Gupta","samarth.gupta@gmail.com","8897675434","Lakhperabagh"),
(04,"Aditya","Mohan","aditya.mohan@gmail.com","7867654563","Sriram colony"),
(05,"Tripti","Verma","tripti.verma@gmail.com","9823452519","Srawasti nagar"),
(06,"Vishnu","Singh","vishnu.singh@gmail.com","9123445664","Lakhperabagh"),
(07,"Aniket","Chaubey","aniket.chaubey@gmail.com","8837472973","Indira nagar"),
(08,"Akansha","Singh","akansha.singh@gmail.com","6387543453","Alambagh"),
(09,"Khushi","Bhatia","khushi.bhatia@gmail.com","6347682363","Munshipulia"),
(10,"Vijay","Verma","vijay.verma@gmail.com","7722346433","nawabganj");
select * from Customers;
100%
1:46
Result Grid
Filter Rows:
Search
Edit:
Export/Import:
C_id F_name L_name email phone_no address
1 Ram Saxena ram.saxena@gmail.com 9876543219 Avas vikas colony
2 Ajay Chaudhary ajay.chaudhary@gmail.com 9945653872 12/A Laxmanpuri
3 Samarth Gupta samarth.gupta@gmail.com 8897675434 Lakhperabagh
4 Aditya Mohan aditya.mohan@gmail.com 7867654563 Sriram colony
5 Tripti Verma tripti.verma@gmail.com 9823452519 Srawasti nagar
6 Vishnu Singh vishnu.singh@gmail.com 9123445664 Lakhperabagh
7 Aniket Chaubey aniket.chaubey@gmail.com 8837472973 Indira nagar
8 Akansha Singh akansha.singh@gmail.com 6387543453 Alambagh
9 Khushi Bhatia khushi.bhatia@gmail.com 6347682363 Munshipulia
10 Vijay Verma vijay.verma@gmail.com 7722346433 nawabganj
Result Grid
Form Editor
Field Types
Customers 19
Apply

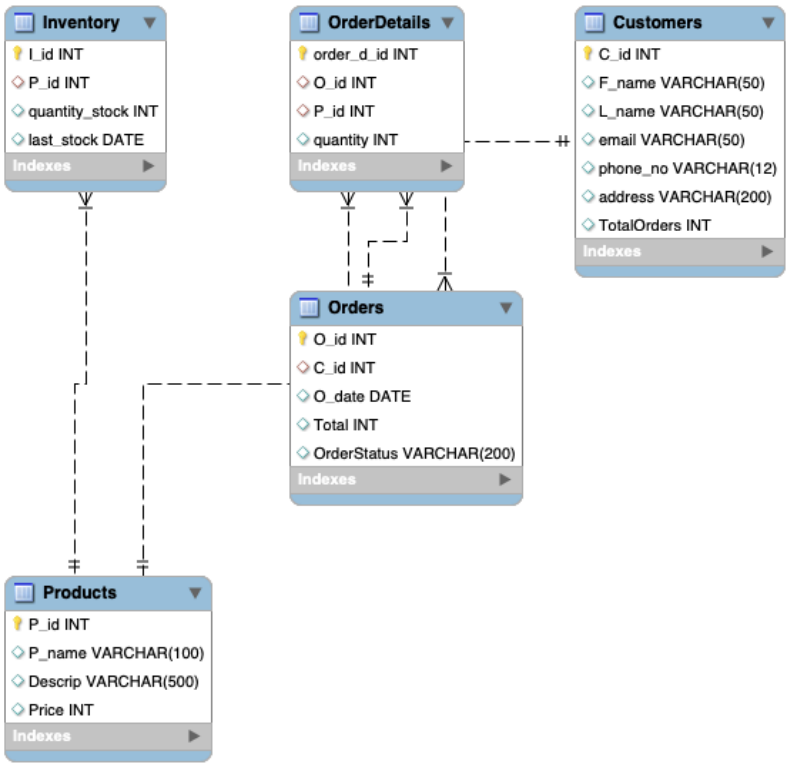

db1
sys
Tables
Views
Stored...
Functio...
TechShop
Tables
Views
Stored...
Functio...
Object Info
Session
No object selected
insert into Products values(1,"nothing earphone","bluetooth earphone",5000),
(2,"oneplus earbuds pro","bluetooth earphone with enc",8000),
(3,"Hp pavilion","laptop with i5 processor",35000),
(4,"Dell laptop","laptop with i7 processor",40000),
(5,"Apple iphone 15","A15 bionic chip latest phone",75000),
(6,"Noise digital watch ","bluetooth digital watch",6000),
(7,"Philips Trimmer","new age trimmer with precision trim",2000),
(8,"Oneplus 10R","android phone",25000),
(9,"Lenovo laptop","laptop with i5 processor and 256gb ssd",50000),
(10,"Realme 5 pro","6 gb android phone",18000);
select * from Products;
100%
24:58
Result Grid
Filter Rows:
Search
Edit:
Export/Import:
P_id P_name Descrip Price
1 nothing earphone bluetooth earphone 5000
2 oneplus earbuds pro bluetooth earphone with enc 8000
3 Hp pavilion laptop with i5 processor 35000
4 Dell laptop laptop with i7 processor 40000
5 Apple iphone 15 A15 bionic chip latest phone 75000
6 Noise digital watch bluetooth digital watch 6000
7 Philips Trimmer new age trimmer with precision trim 2000
8 Oneplus 10R android phone 25000
9 Lenovo laptop laptop with i5 processor and 256gb ssd 50000
10 Realme 5 pro 6 gb android phone 18000
Result Grid
Form Editor
Field Types
Products 20
Apply


db1
sys
Tables
Views
Stored...
Functio...
TechShop
Tables
Views
Stored...
Functio...
Object Info
Session
No object selected
insert into Orders values(1,1,'2023-08-23',48000),
(2,2,'2023-06-12',52000),
(3,3,'2023-02-12',81000),
(4,4,'2022-04-10',75000),
(5,5,'2022-04-22',18000),
(6,6,'2021-02-23',13000),
(7,7,'2023-03-18',25000),
(8,8,'2021-11-24',85000),
(9,9,'2022-05-11',16000),
(10,10,'2023-07-21',21000);
select * from Orders;
100%
22:70
Result Grid
Filter Rows:
Search
Edit:
Export/Import:
O_id C_id O_date Total
1 1 2023-08-23 48000
2 2 2023-06-12 52000
3 3 2023-02-12 81000
4 4 2022-04-10 75000
5 5 2022-04-22 18000
6 6 2021-02-23 13000
7 7 2023-03-18 25000
8 8 2021-11-24 85000
9 9 2022-05-11 16000
10 10 2023-07-21 21000
Result Grid
Form Editor
Field Types
Orders 23
Apply



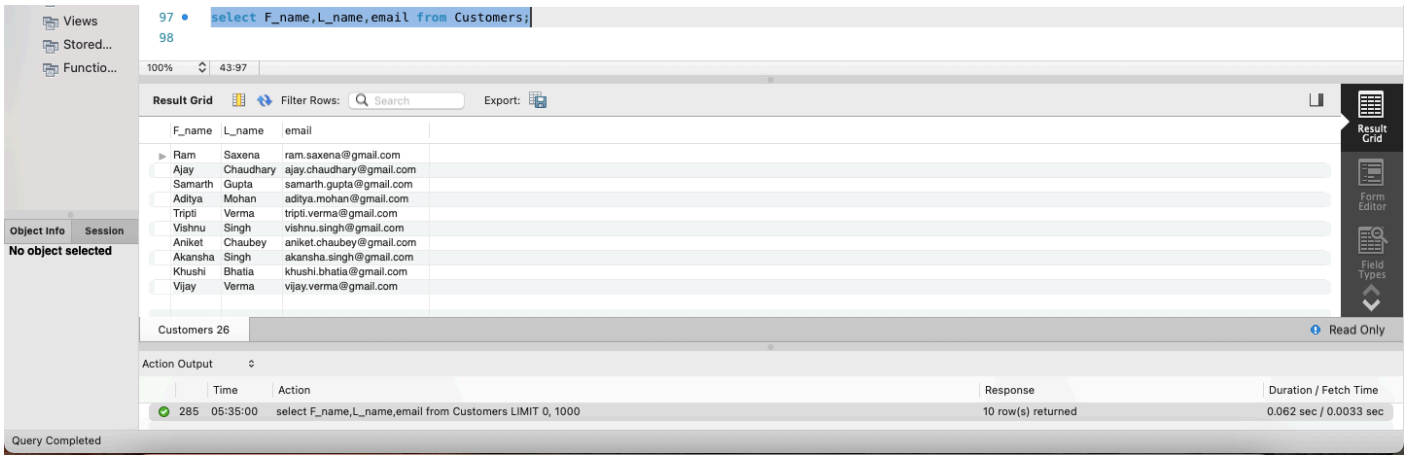


5. Create an ERD (Entity Relationship Diagram) for the database.

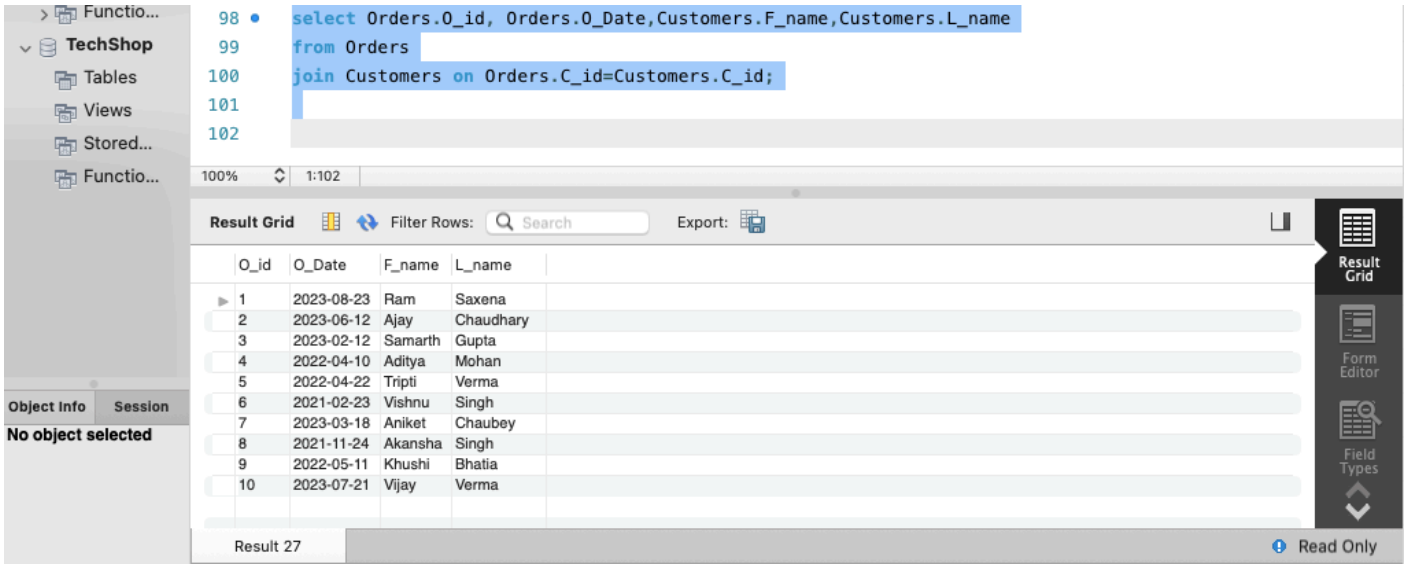


Task 2:SELECT, WHERE, BETWEEN,AND,LIKE:

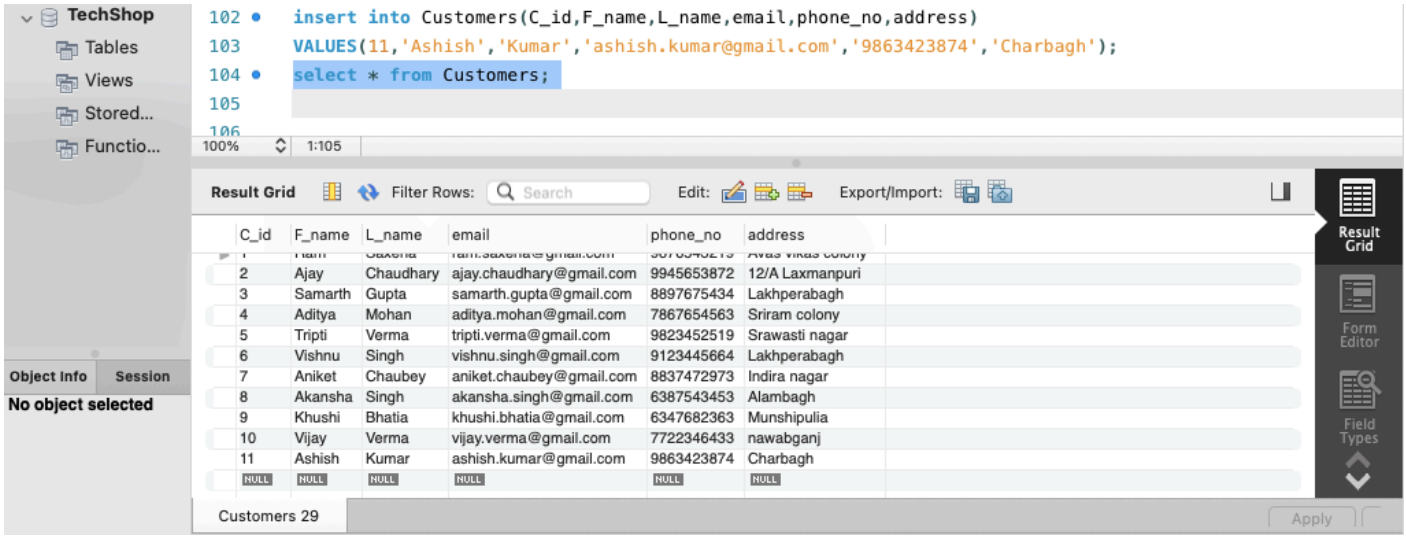
1.Write an SQL query to retrieve the names and emails of all customers.



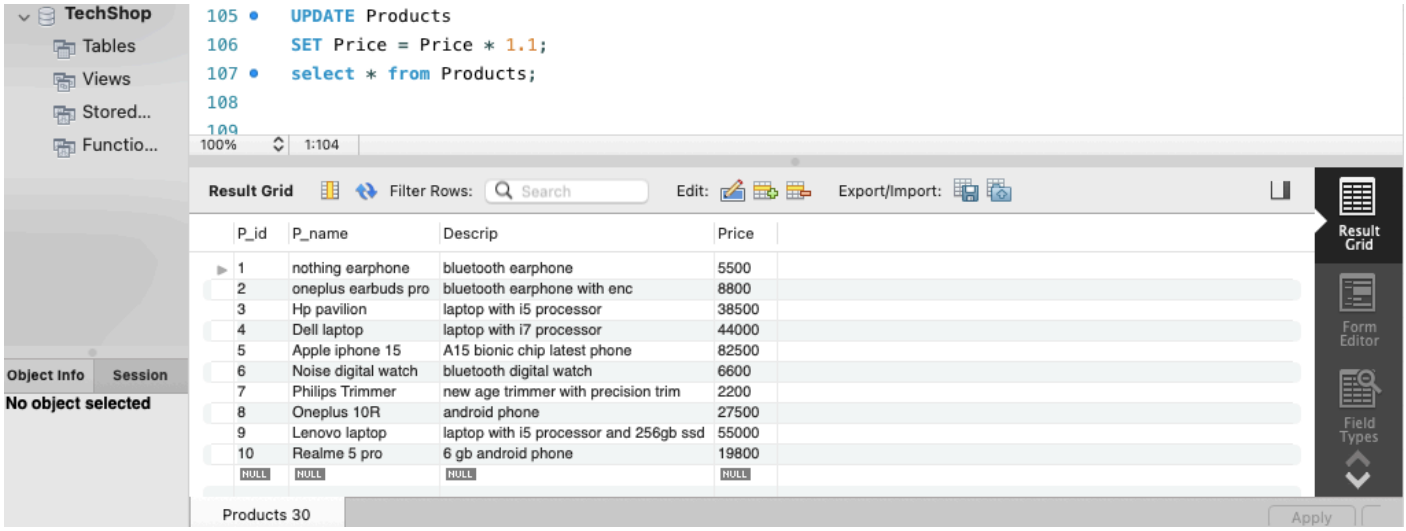
2.Write an SQL query to list all orders with their order dates and corresponding customer names.



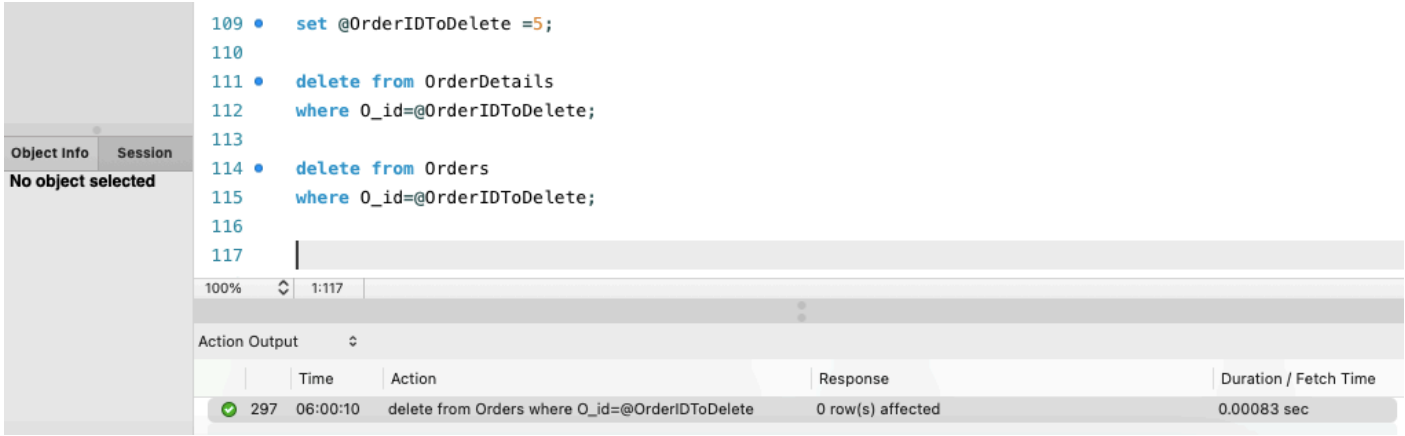
3.Write an SQL query to insert a new customer record into the “Customers” table. Include customer information such as name, email and address.



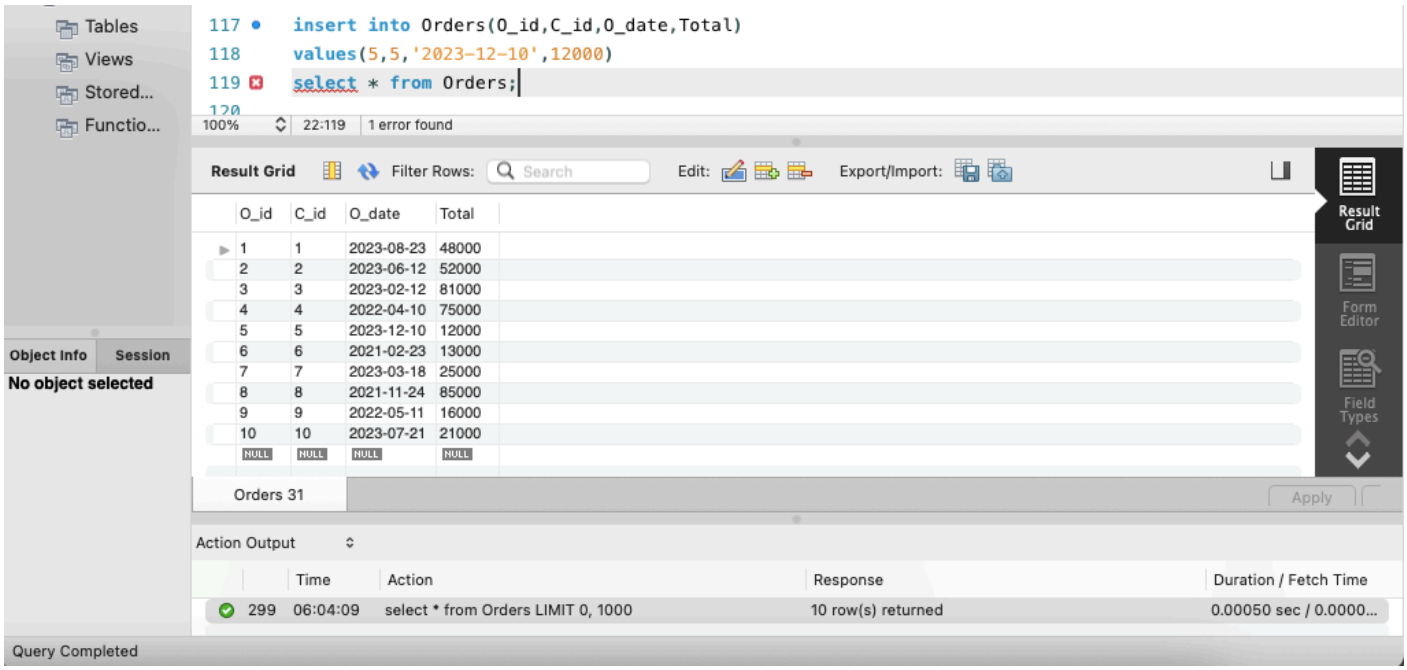
4.Write an SQL query to update the prices of all electronics gadgets in the “Products” table by increasing them by 10%.



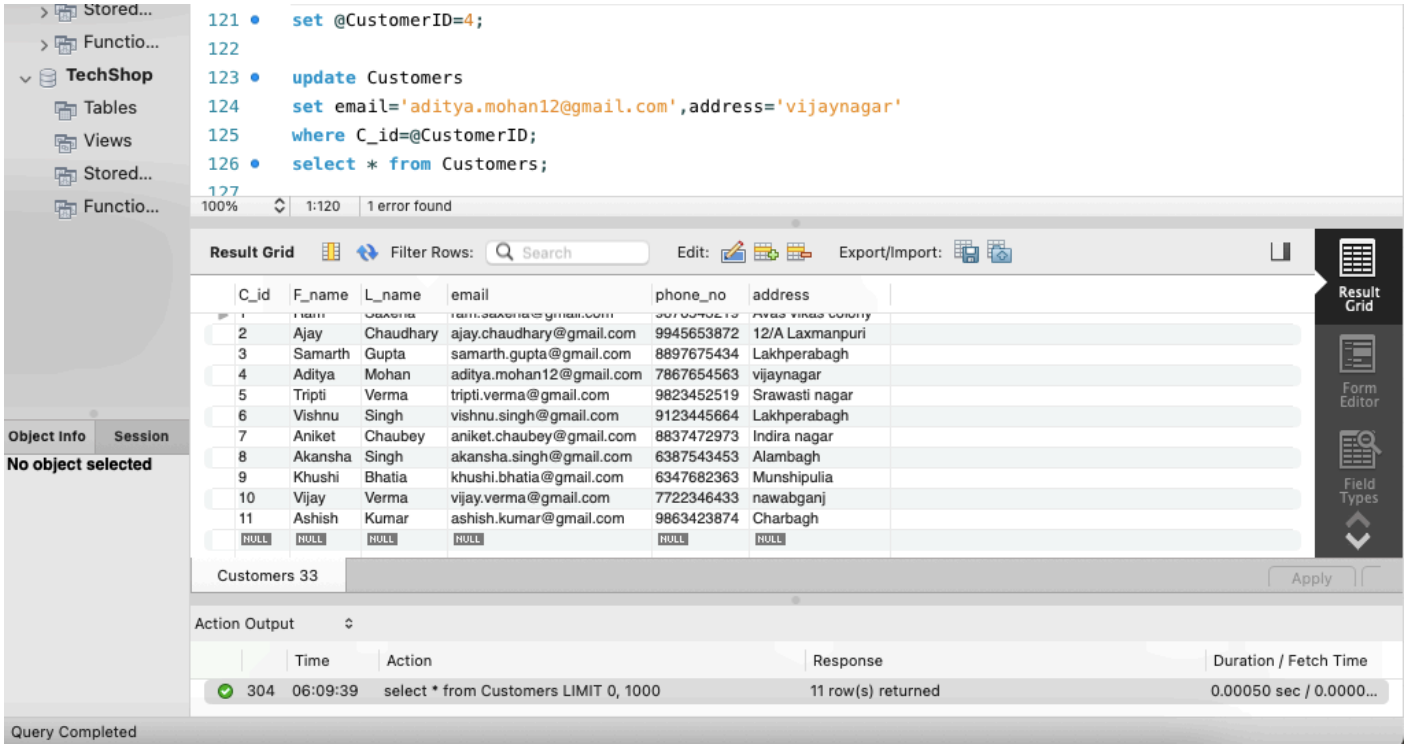
5.Write an SQL query to delete a specific order and its associated order details from the “Orders” and “OrderDetails” table. Allow users to input the order ID as a parameter.



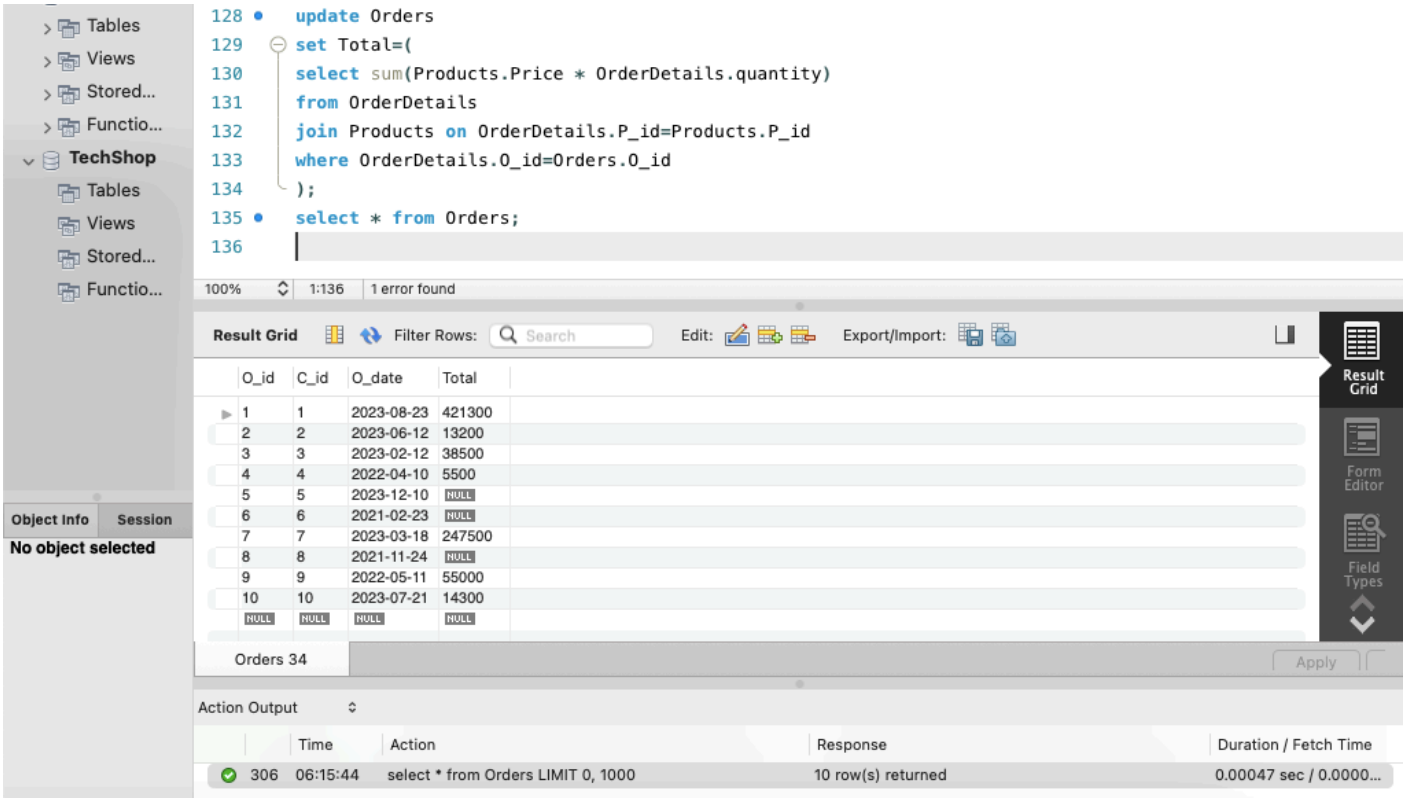
6.Write an SQL query to insert a new order into the “Orders” table. Include the customers ID, order date, and any other necessary information.



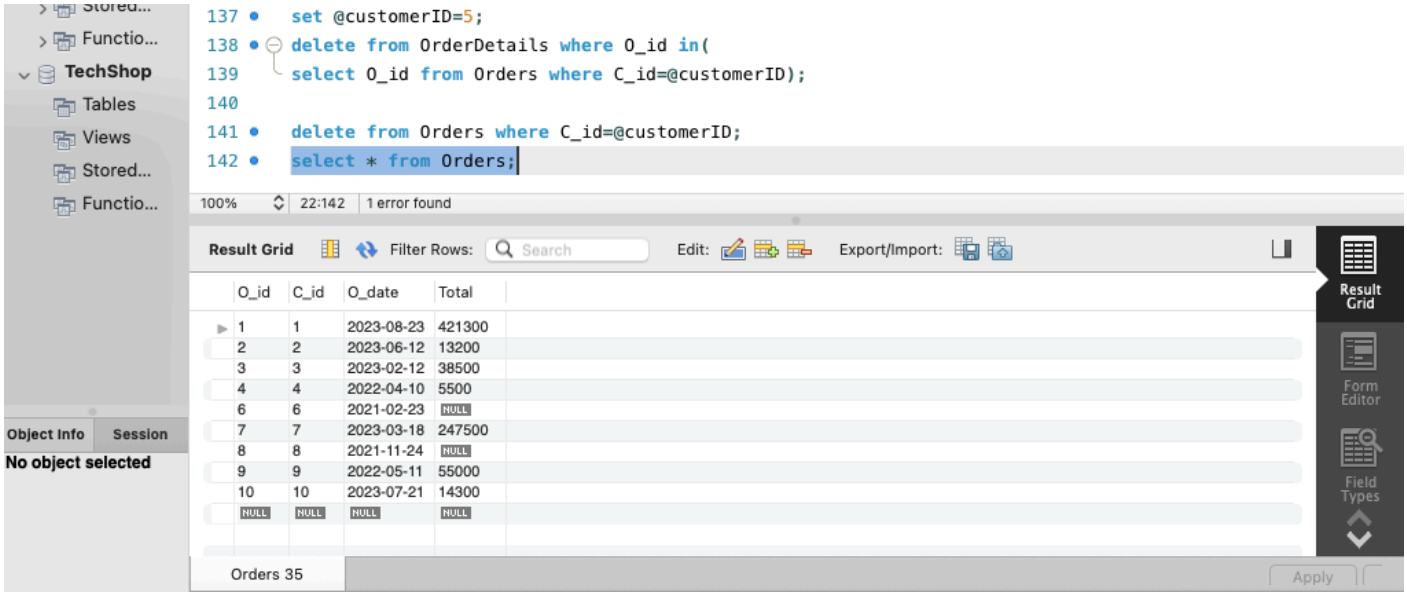
7.Write an SQL query to update the contact information (eg, email and address) of a specific customer in the “Customers” table. Allow users to input the customer ID and new contact information.



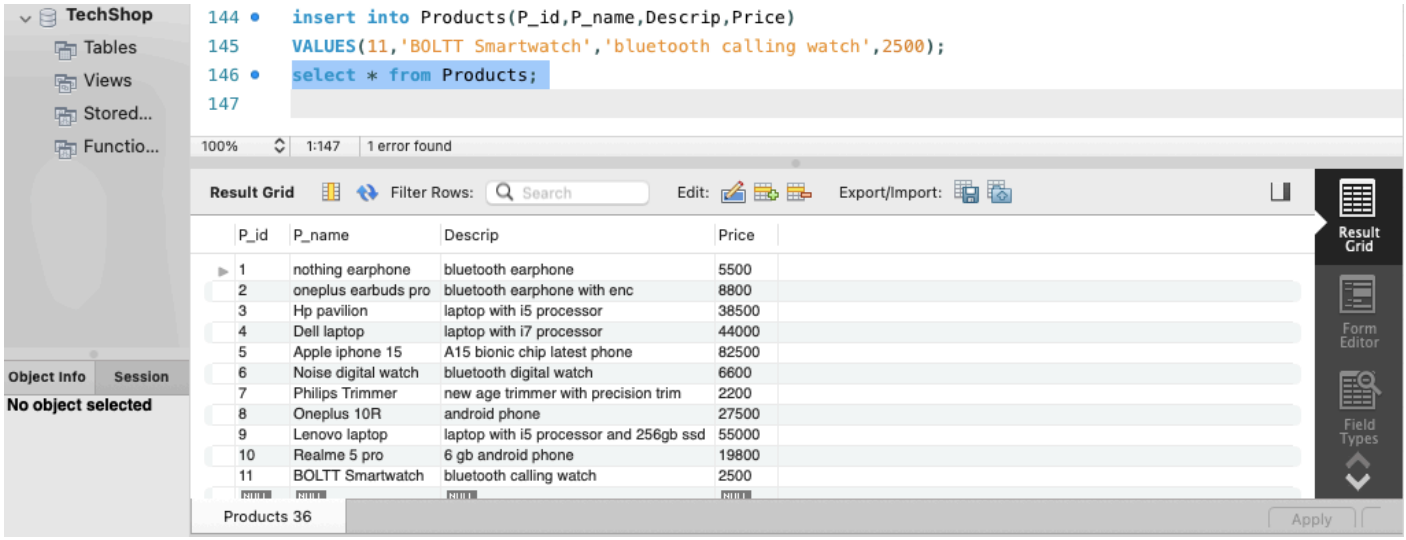
8.Write an SQL query to recalculate and update the total cost of each order in the “Orders” table based on the prices and quantities in the “OrderDetails” table.



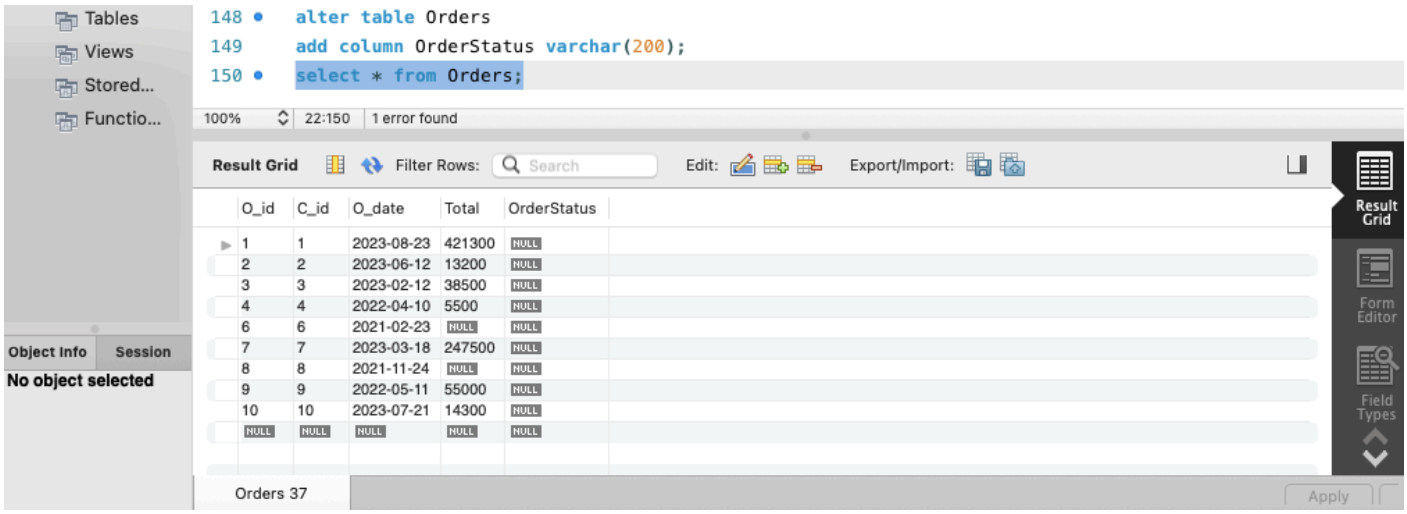
9.Write an SQL query to delete all orders and their associated order details for a specific customer from the "Orders" and "OrderDetails" tables. Allow users to input the customer ID as a parameter.

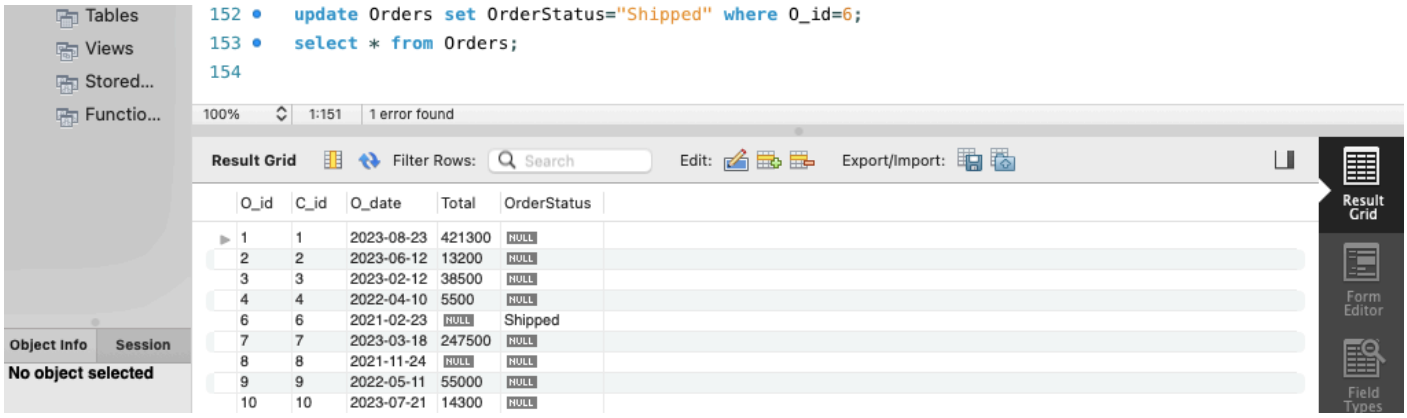


10.Write an SQL query to insert a new electronic gadget product into the "Products" table, including product name, category, price, and any other relevant details.



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.





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.

```
158 •  UPDATE Customers
159    SET TotalOrders = (
160        SELECT COUNT(*)
161        FROM Orders
162        WHERE Orders.C_ID = Customers.C_ID
163    );
164 •  select * from Customers;
165
166
```

100% 1:165 1 error found

Result Grid Filter Rows: Search Edit: Export/Import:

C_id	F_name	L_name	email	phone_no	address	TotalOrders
1	Ram	Saxena	ram.saxena@gmail.com	9876543219	Avas vikas colony	1
2	Ajay	Chaudhary	ajay.chaudhary@gmail.com	9945653872	12/A Laxmanpuri	1
3	Samarth	Gupta	samarth.gupta@gmail.com	8897675434	Lakhperabagh	1
4	Aditya	Mohan	aditya.mohan12@gmail.com	7867654563	vijaynagar	1
5	Tripti	Verma	tripti.verma@gmail.com	9823452519	Srawasti nagar	0
6	Vishnu	Singh	vishnu.singh@gmail.com	9123445664	Lakhperabagh	1
7	Aniket	Chaubey	aniket.chaubey@gmail.com	8837472973	Indira nagar	1
8	Akansha	Singh	akansha.singh@gmail.com	6387543453	Alambagh	1
9	Khushi	Bhatia	khushi.bhatia@gmail.com	6347682363	Munshipulia	1
10	Vijay	Verma	vijay.verma@gmail.com	7722346433	nawabganj	1
11	Ashish	Kumar	ashish.kumar@gmail.com	9863423874	Charbagh	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.

```
166 •  SELECT
167        Orders.O_ID,
168        Orders.O_Date,
169        Customers.C_ID,
170        Customers.F_Name
171    FROM
172        Orders
173    JOIN
174        Customers ON Orders.C_ID = Customers.C_ID;
175
```

100% 47:174 1 error found

Result Grid Filter Rows: Search Export:

O_ID	O_Date	C_ID	F_Name
1	2023-08-23	1	Ram
2	2023-06-12	2	Ajay
3	2023-02-12	3	Samarth
4	2022-04-10	4	Aditya
6	2021-02-23	6	Vishnu
7	2023-03-18	7	Aniket
8	2021-11-24	8	Akansha
9	2022-05-11	9	Khushi
10	2023-07-21	10	Vijay

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

```
176 •  SELECT P.P_Name,
177    SUM(OD.Quantity * P.Price) AS TotalRevenue
178    FROM OrderDetails OD
179    JOIN Products P ON OD.P_ID = P.P_ID
180    GROUP BY P.P_ID, P.P_Name;
181
```

100% 27:180 1 error found

Result Grid Filter Rows: Search Export:

P_Name	TotalRevenue
oneplus earbuds pro	17600
Hp pavilion	38500
nothing earphone	11000
Apple iphone 15	660000
Noise digital watch	13200
Oneplus 10R	55000

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

```
182 •  SELECT C.C_id, C.F_name, C.L_name, C.email, C.phone_no, C.address
183    FROM Customers C
184    JOIN Orders O ON C.C_id = O.C_id;
185
186
```

100% 1:185 1 error found

Result Grid Filter Rows: Search Export:

C_id	F_name	L_name	email	phone_no	address
1	Ram	Saxena	ram.saxena@gmail.com	9876543219	Avas vikas colony
2	Ajay	Chaudhary	ajay.chaudhary@gmail.com	9945653872	12/A Laxmanpuri
3	Samarth	Gupta	samarth.gupta@gmail.com	8897675434	Lakhperabagh
4	Aditya	Mohan	aditya.mohan12@gmail.com	7867654563	vijaynagar
6	Vishnu	Singh	vishnu.singh@gmail.com	9123445664	Lakhperabagh
7	Aniket	Chaubey	aniket.chaubey@gmail.com	8837472973	Indira nagar
8	Akansha	Singh	akansha.singh@gmail.com	6387543453	Alambagh
9	Khushi	Bhatia	khushi.bhatia@gmail.com	6347682363	Munshipulia
10	Vijay	Verma	vijay.verma@gmail.com	7722346433	nawabganj

Result Grid Form Editor Field Types

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.

```
186 •  SELECT P.P_Name,
187    SUM(OD.Quantity) AS TotalQuantityOrdered
188    FROM Products P
189    JOIN OrderDetails OD ON P.P_id = OD.P_id
190    GROUP BY P.P_Name
191    ORDER BY TotalQuantityOrdered DESC
192    LIMIT 1;
193
```

100% 9:192 1 error found

Result Grid Filter Rows: Search Export: Fetch rows:

P_Name	TotalQuantityOrder...
Apple iphone 15	8

Result Grid

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

```
195 •  SELECT P_Name
196    FROM Products;
197
```

100% 15:196 1 error found

Result Grid Filter Rows: Search Export:

P_Name
nothing earphone
oneplus earbuds pro
Hp pavilion
Dell laptop
Apple iphone 15
Noise digital watch
Philips Trimmer
Oneplus 10R
Lenovo laptop
Realme 5 pro
BOLTT Smartwatch

Result Grid Form Editor Field Types

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

```
198 •  SELECT C.C_ID,C.F_name,AVG(O.Total) AS AverageOrderValue
199    FROM Customers C
200    JOIN Orders O ON C.C_id = O.C_id
201    GROUP BY C.C_id, C.F_name;
202
```

100% 27:201 1 error found

Result Grid Filter Rows: Search Export:

C_ID	F_name	AverageOrderValue
1	Ram	421300.0000
2	Ajay	13200.0000
3	Samarth	38500.0000
4	Aditya	5500.0000
6	Vishnu	NULL
7	Aniket	247500.0000
8	Akansha	NULL
9	Khushi	55000.0000
10	Vijay	14300.0000

Result Grid Form Editor Field Types

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.O_id, C.C_id, C.F_name, C.L_name, C.email,
    C.phone_no, O.Total AS TotalRevenue
FROM Orders O
JOIN Customers C ON O.C_id = C.C_id
ORDER BY TotalRevenue DESC
LIMIT 1;
```

100% 1:203 1 error found

Result Grid Filter Rows: Search Export: Fetch rows:

O_id	C_id	F_name	L_name	email	phone_no	TotalRevenue
1	1	Ram	Saxena	ram.saxena@gmail.com	9876543219	421300

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

```
SELECT P.P_name,
    COUNT(OD.P_id) AS OrderCount
FROM
    Products P
LEFT JOIN
    OrderDetails OD ON P.P_id = OD.P_id
GROUP BY P.P_name;
```

100% 1:218 1 error found

Result Grid Filter Rows: Search Export:

P_name	OrderCount
nothing earphone	2
oneplus earbuds pro	2
Hp pavilion	1
Dell laptop	0
Apple iphone 15	2
Noise digital watch	1
Philips Trimmer	0
Oneplus 10R	1
Lenovo laptop	0
Realme 5 pro	0
BOLTT Smartwatch	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.

```
SELECT C.F_name, C.L_name,C.email,C.phone_no
FROM Customers C
JOIN Orders O ON C.C_id = O.C_id
JOIN OrderDetails OD ON O.O_id = OD.O_id
JOIN Products P ON OD.P_id = P.P_id
WHERE P.P_Name= 'Noise digital watch';
```

100% 39:225 1 error found

Result Grid Filter Rows: Search Export:

F_name	L_name	email	phone_no

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.

```sql
SELECT
    SUM(O.Total) AS TotalRevenue
FROM
    Orders O
JOIN
    OrderDetails OD ON O.O_id = OD.O_id
WHERE
    O.O_Date BETWEEN '2023-01-01' AND '2023-12-31';
```

TotalRevenue
1170400

Task 4. Subquery and its type:

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

```sql
SELECT *
FROM Customers C
WHERE C.C_id NOT IN (SELECT DISTINCT C_id FROM Orders);
```

C_id	F_name	L_name	email	phone_no	address	TotalOrders
5	Tripti	Verma	tripti.verma@gmail.com	9823452519	Srawasti nagar	0
11	Ashish	Kumar	ashish.kumar@gmail.com	9863423874	Charbagh	0

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

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

TotalProducts
11

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

```sql
SELECT
    SUM(Total) AS TotalRevenue
FROM
    Orders O
JOIN
    OrderDetails OD ON O.O_id = OD.O_id
```

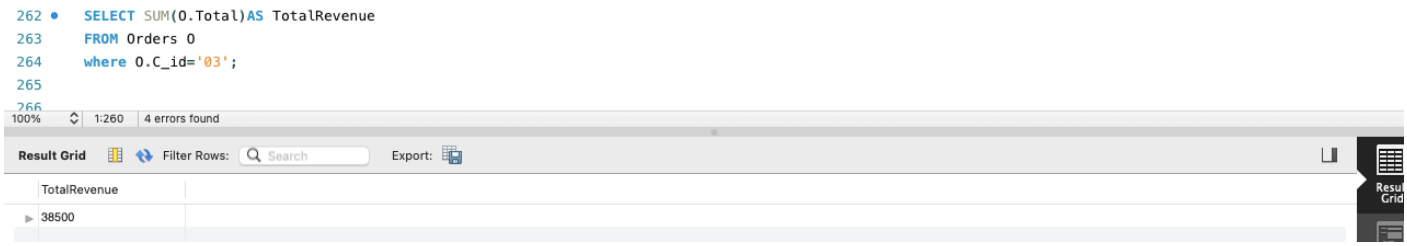
TotalRevenue
1230900

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.

```sql
SELECT AVG(OD.Quantity) AS AverageQuantityOrdered
FROM Products P
JOIN OrderDetails OD ON P.P_id = OD.P_id;
```

AverageQuantityOrder...
1.8889

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.



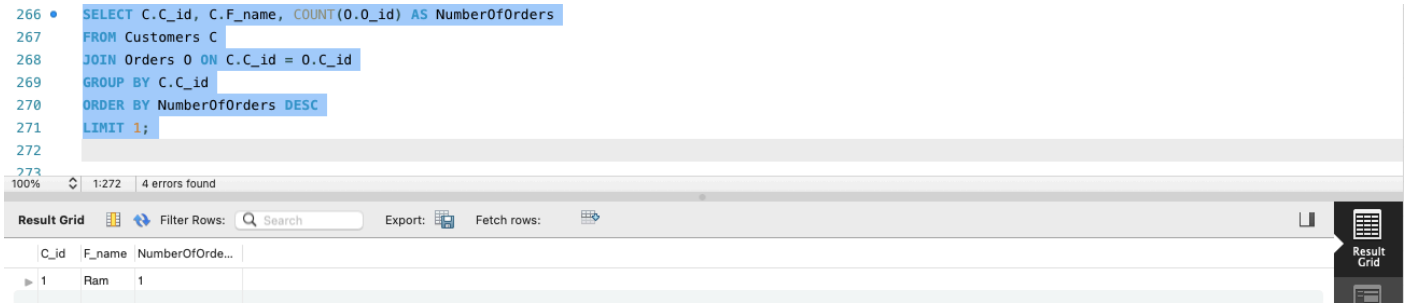
```
SELECT SUM(O.Total)AS TotalRevenue
FROM Orders O
where O.C_id='03';
```

100% 1:260 4 errors found

Result Grid | Filter Rows: Search | Export:

TotalRevenue
38500

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.



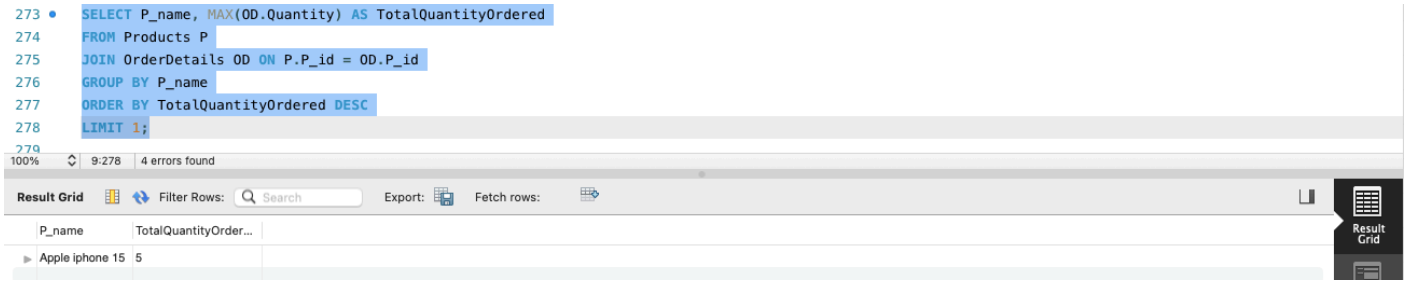
```
SELECT C.C_id, C.F_name, COUNT(O.O_id) AS NumberOfOrders
FROM Customers C
JOIN Orders O ON C.C_id = O.C_id
GROUP BY C.C_id
ORDER BY NumberOfOrders DESC
LIMIT 1;
```

100% 1:272 4 errors found

Result Grid | Filter Rows: Search | Export: | Fetch rows:

C_id	F_name	NumberOfOrde...
1	Ram	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_name, MAX(OD.Quantity) AS TotalQuantityOrdered
FROM Products P
JOIN OrderDetails OD ON P.P_id = OD.P_id
GROUP BY P_name
ORDER BY TotalQuantityOrdered DESC
LIMIT 1;
```

100% 9:278 4 errors found

Result Grid | Filter Rows: Search | Export: | Fetch rows:

P_name	TotalQuantityOrder...
Apple iphone 15	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.

```sql
SELECT C.C_id, C.F_name, SUM(Total) AS TotalSpending
FROM Customers C
JOIN Orders O ON C.C_id = O.C_id
JOIN OrderDetails OD ON O.O_id = OD.O_id
JOIN Products P ON OD.P_id = P.P_id
GROUP BY C.C_id
ORDER BY TotalSpending DESC
LIMIT 1;
```

10:286 | 4 errors found

Result Grid | Filter Rows: | Search | Export: | Fetch rows:

C_id	F_name	TotalSpendi...
1	Ram	842600

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

```sql
SELECT
    C.C_id,C.F_name,C.L_name,COUNT(O.O_id) as numberoforders, SUM(O.Total) as TotalRevenue,
    AVG(O.Total) as AverageOrderValue
FROM Customers C
LEFT JOIN Orders O ON C.C_id=O.C_id
GROUP BY C.C_id
```

1:295 | 4 errors found

Result Grid | Filter Rows: | Search | Export:

C_id	F_name	L_name	numberoforde...	TotalRevenue	AverageOrderValue
1	Ram	Saxena	1	421300	421300.0000
2	Ajay	Chaudhary	1	13200	13200.0000
3	Samarth	Gupta	1	38500	38500.0000
4	Aditya	Mohan	1	5500	5500.0000
5	Tripti	Verma	0	NULL	NULL

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.

```sql
SELECT
    C.C_id,
    C.F_name,
    COUNT(O.O_id) AS OrderCount
FROM
    Customers C
LEFT JOIN
    Orders O ON C.C_id= O.C_id
GROUP BY
    C.C_id,C.F_name;
```

1:306 | 5 errors found

Result Grid | Filter Rows: | Search | Export:

C_id	F_name	OrderCount
1	Ram	1
2	Ajay	1
3	Samarth	1
4	Aditya	1
5	Tripti	0
6	Vishnu	1
7	Aniket	1
8	Akansha	1
9	Khushi	1
10	Vijay	1
11	Ashish	0