Online Retail Database System

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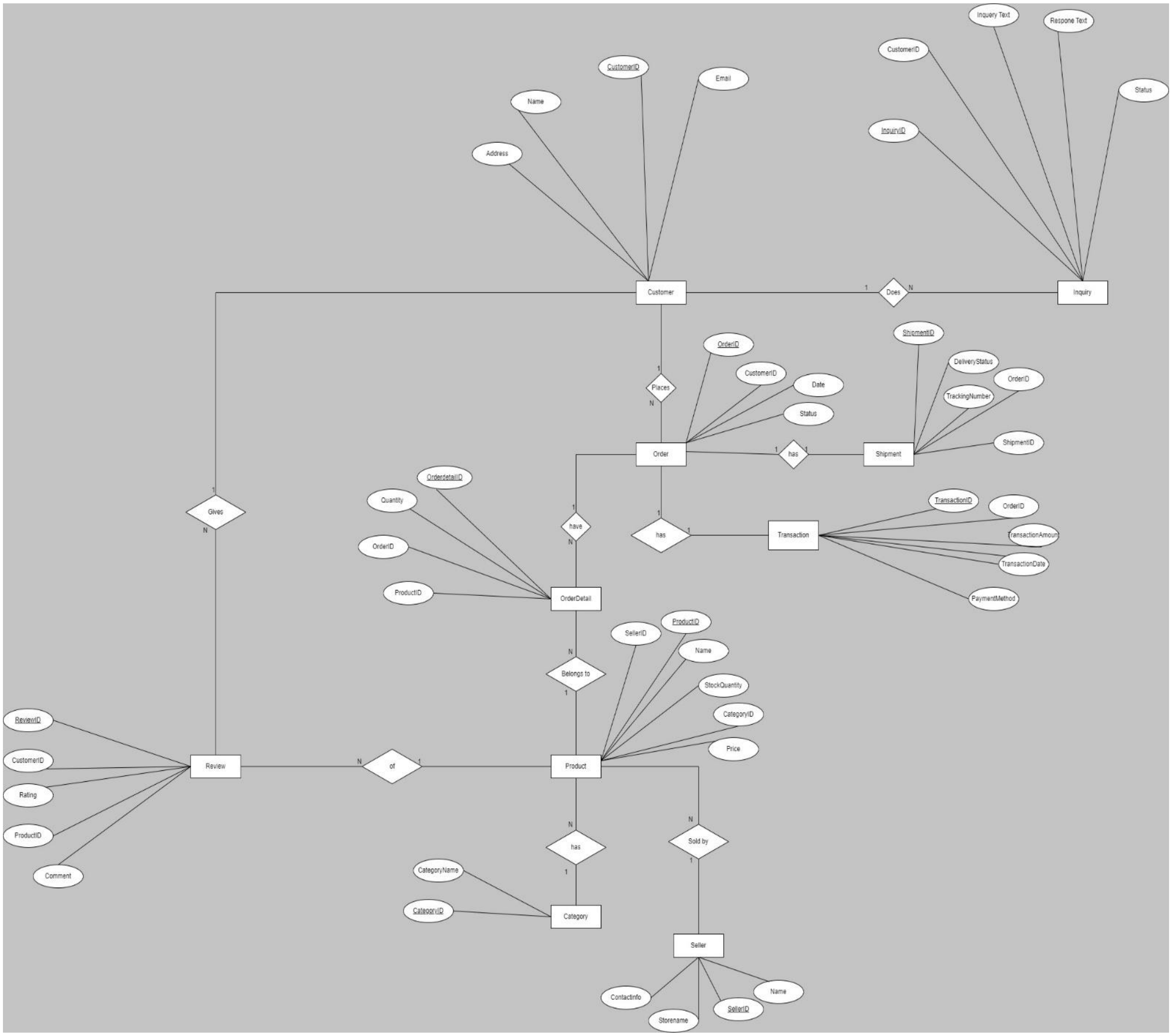
Date: 12/09/2023

Table of content

Entity-Relationship Diagram (ERD):

An entity–relationship model describes interrelated things of interest in a specific domain of knowledge. A basic ER model is composed of entity types and specifies relationships that can exist between entities.



Entity Relational Model

1. Customer
   - Attributes: CustomerID (PK), Name, Email, Password, Address, PhoneNumber
   - Relationships: Places (with Order), Submits (with Review), Makes (with Inquiry)
2. Seller
   - Attributes: SellerID (PK), StoreName, ContactInfo
   - Relationships: Lists (with Product)
3. Product
   - Attributes: ProductID (PK), Name, Price, CategoryID (FK), SellerID (FK), StockQuantity
   - Relationships: Belongs_to (with Category), Listed_by (with Seller), Included_in (with OrderDetail), Reviewed (with Review)
4. Category
   - Attributes: CategoryID (PK), CategoryName
   - Relationships: Has (with Product)
5. Order
   - Attributes: OrderID (PK), CustomerID (FK), Date, Status

- Relationships: Placed_by (with Customer), Contains (with OrderDetail), Has (with Transaction), Sent_via (with Shipment)

6. OrderDetail
    - Attributes: OrderDetailID (PK), OrderID (FK), ProductID (FK), Quantity
    - Relationships: Details_of (with Order), Includes (with Product)
7. Transaction
    - Attributes: TransactionID (PK), OrderID (FK), TransactionAmount, TransactionDate, PaymentMethod
    - Relationships: Belongs_to (with Order)
8. Review
    - Attributes: ReviewID (PK), ProductID (FK), CustomerID (FK), Rating, Comment
    - Relationships: Given_by (with Customer), For (with Product)
9. Inquiry
    - Attributes: InquiryID (PK), CustomerID (FK), InquiryText, ResponseText, Status
    - Relationships: Made_by (with Customer)
10. Shipment

- Attributes: ShipmentID (PK), OrderID (FK), ShipmentDate, TrackingNumber, DeliveryStatus
- Relationships: Pertains_to (with Order)

Database Schema

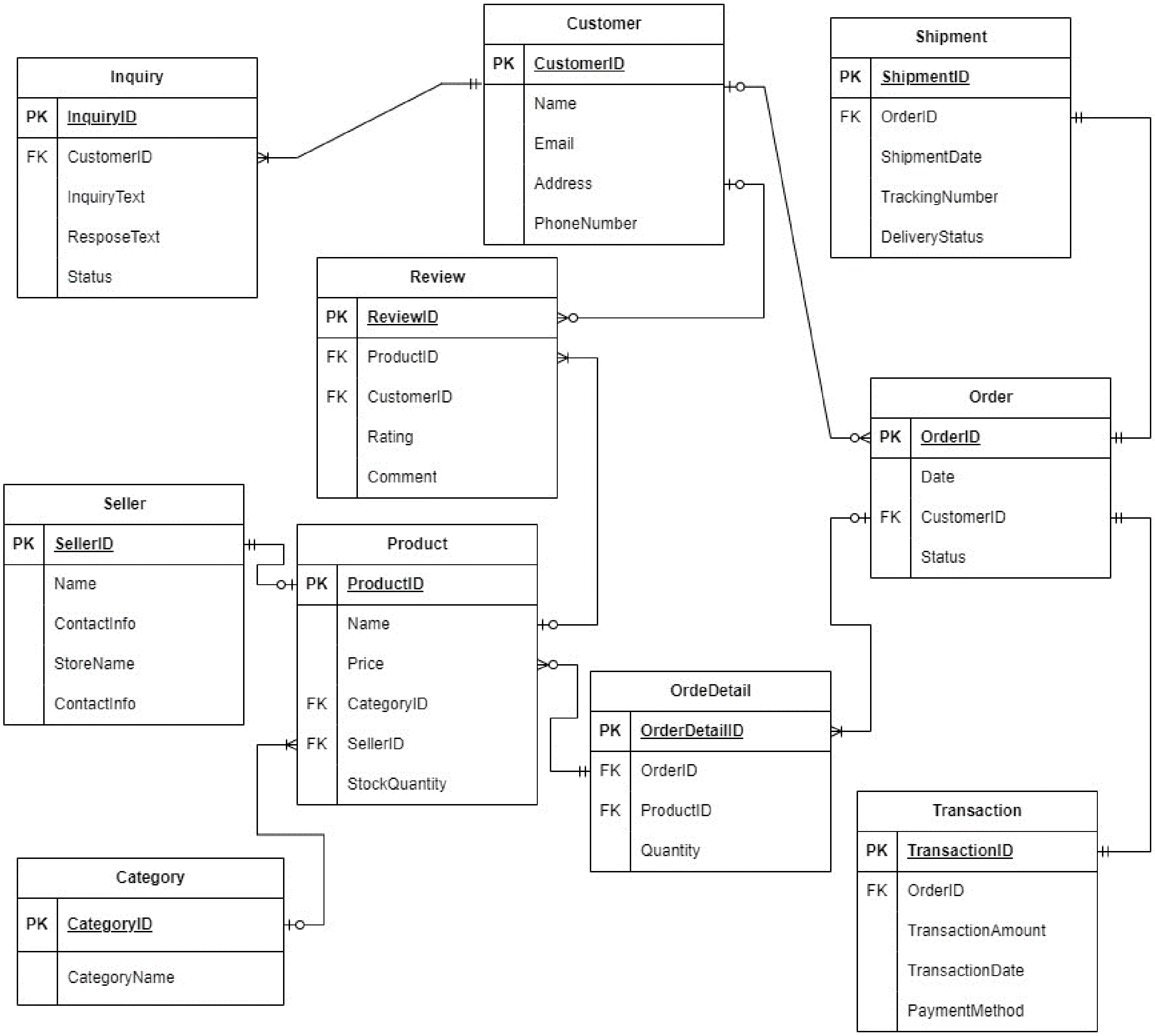
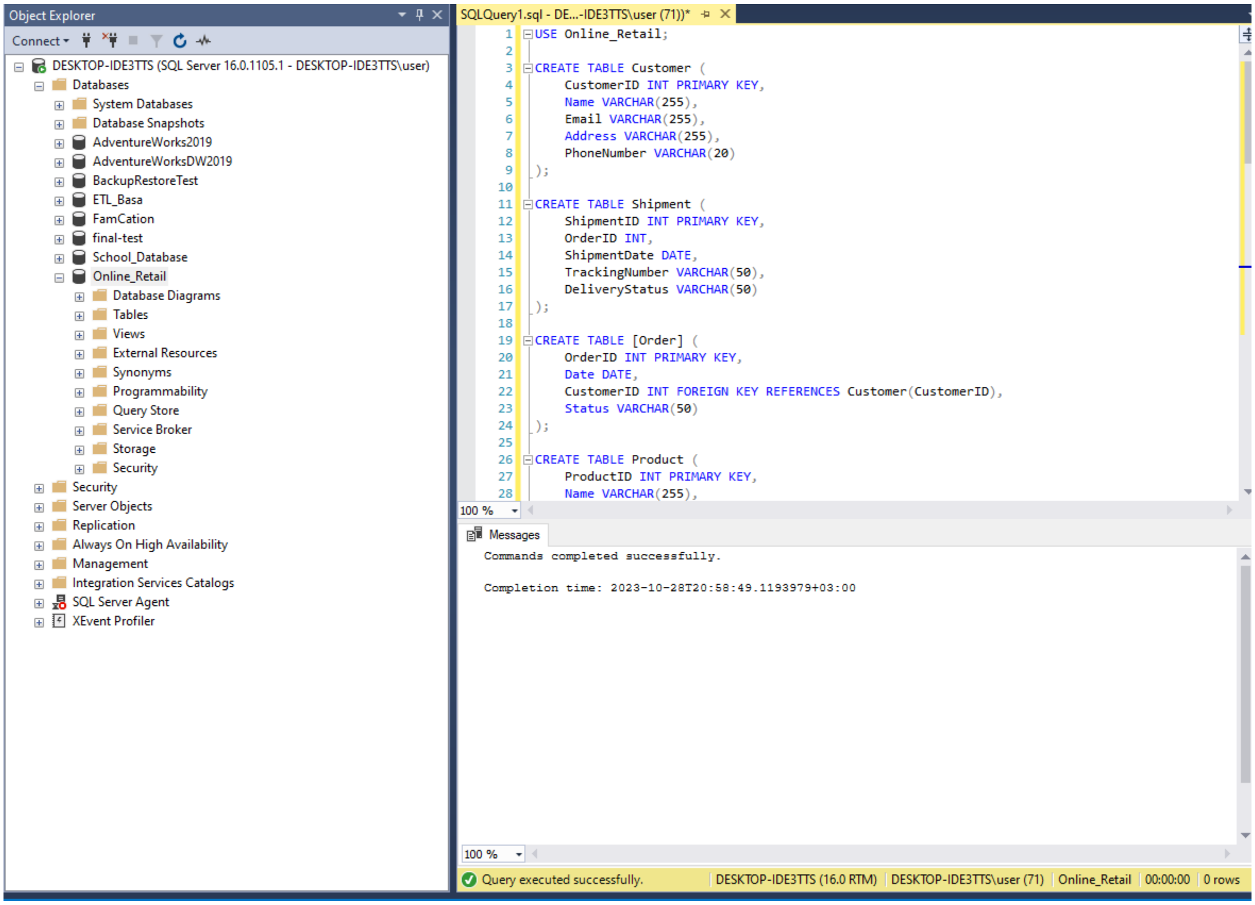


Table creation

SQL provides the CREATE TABLE statement to create a new table in a given database. An SQL query to create a table must define the structure of a table. The structure consists of the name of a table and names of columns in the table with each column's data type. Note that each table must be uniquely named in a database.

Database Implementation

a. Create tables



```
USE Online_Retail;

CREATE TABLE Customer (
    CustomerID INT PRIMARY KEY,
    Name VARCHAR(255),
    Email VARCHAR(255),
    Address VARCHAR(255),
    PhoneNumber VARCHAR(20)
);

CREATE TABLE Shipment (
    ShipmentID INT PRIMARY KEY,
    OrderID INT,
    ShipmentDate DATE,
    TrackingNumber VARCHAR(50),
    DeliveryStatus VARCHAR(50)
);

CREATE TABLE [Order] (
    OrderID INT PRIMARY KEY,
    Date DATE,
    CustomerID INT FOREIGN KEY REFERENCES Customer(CustomerID),
    Status VARCHAR(50)
);

CREATE TABLE Product (
    ProductID INT PRIMARY KEY,
    Name VARCHAR(255),
```

```
Commands completed successfully.

Completion time: 2023-10-28T20:58:49.1193979+03:00
```

Query executed successfully. | DESKTOP-IDE3TTS (16.0 RTM) | DESKTOP-IDE3TTS\user (71) | Online_Retail | 00:00:00 | 0 rows

CREATE TABLE Customer (

CustomerID INT PRIMARY KEY,

Name VARCHAR(255),

Email VARCHAR(255),

Address VARCHAR(255),

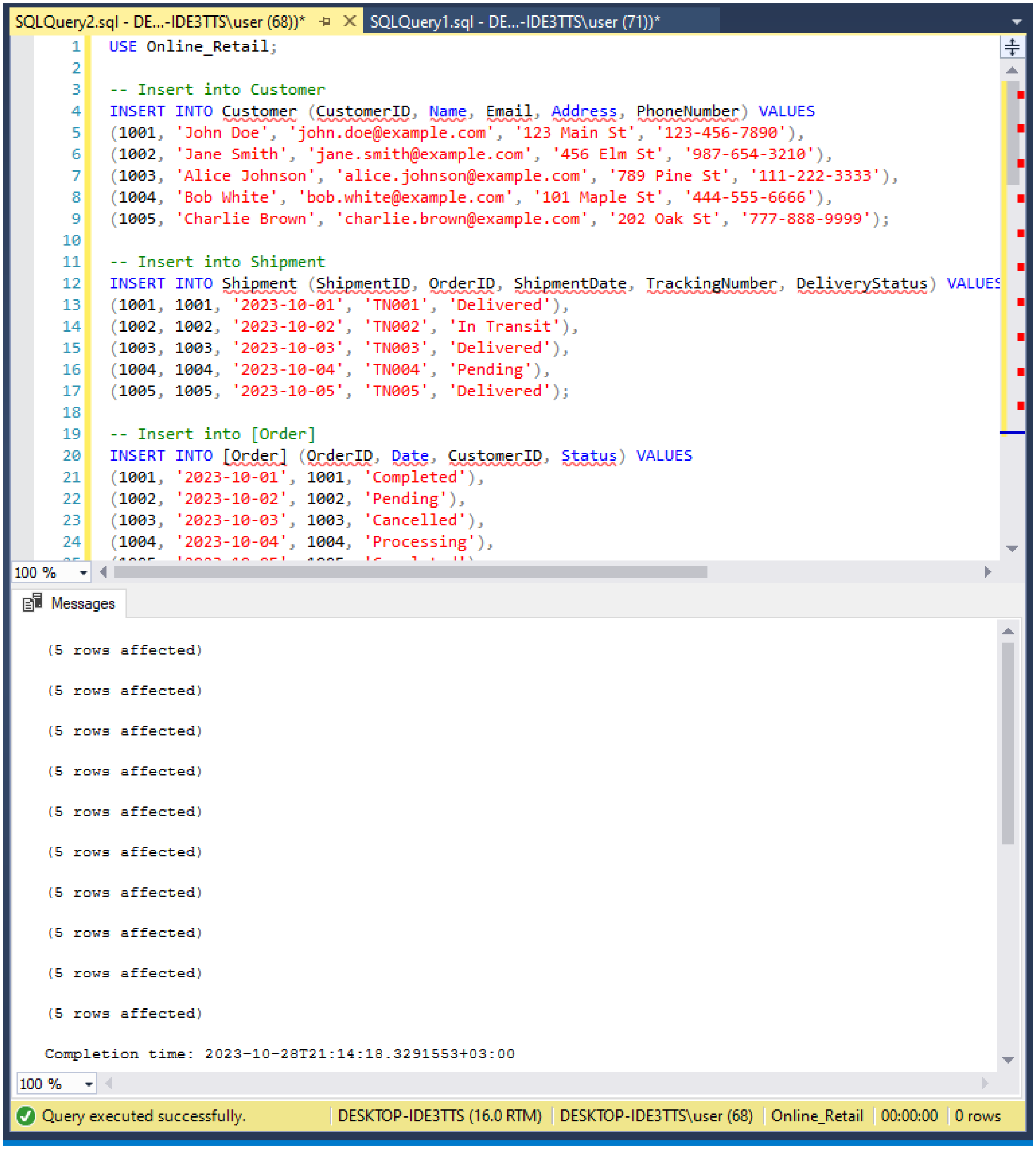
```
    PhoneNumber VARCHAR(20)
);

CREATE TABLE Shipment (
    ShipmentID INT PRIMARY KEY,
    OrderID INT,
    ShipmentDate DATE,
    TrackingNumber VARCHAR(50),
    DeliveryStatus VARCHAR(50)
);

CREATE TABLE [Order] (
    OrderID INT PRIMARY KEY,
    Date DATE,
    CustomerID INT FOREIGN KEY REFERENCES Customer(CustomerID),
    Status VARCHAR(50)
);

CREATE TABLE Product (
    ProductID INT PRIMARY KEY,
    Name VARCHAR(255),
    Price DECIMAL(10,2),
    CategoryID INT,
    SellerID INT,
    StockQuantity INT
);

CREATE TABLE Category (
    CategoryID INT PRIMARY KEY,
    CategoryName VARCHAR(255)
);

CREATE TABLE Seller (
    SellerID INT PRIMARY KEY,
    Name VARCHAR(255),
    ContactInfo VARCHAR(255),
    StoreName VARCHAR(255)
);

CREATE TABLE OrderDetail (
    OrderDetailID INT PRIMARY KEY,
    OrderID INT,
    ProductID INT,
    Quantity INT,
    FOREIGN KEY (OrderID) REFERENCES [Order](OrderID),
    FOREIGN KEY (ProductID) REFERENCES Product(ProductID)
);

CREATE TABLE [Transaction] (
    TransactionID INT PRIMARY KEY,
    OrderID INT,
    TransactionAmount DECIMAL(10,2),
    TransactionDate DATE,
    PaymentMethod VARCHAR(50),
    FOREIGN KEY (OrderID) REFERENCES [Order](OrderID)
);

CREATE TABLE Review (
    ReviewID INT PRIMARY KEY,
    ProductID INT,
    CustomerID INT,
    Rating INT,
    Comment TEXT,
    FOREIGN KEY (ProductID) REFERENCES Product(ProductID),
    FOREIGN KEY (CustomerID) REFERENCES Customer(CustomerID)
);

CREATE TABLE Inquiry (
    InquiryID INT PRIMARY KEY,
    CustomerID INT,
    InquiryText TEXT,
    ResponseText TEXT,
    Status VARCHAR(50),
    FOREIGN KEY (CustomerID) REFERENCES Customer(CustomerID)
);
```

b. Populate the tables

```
USE Online_Retail;

-- Insert into Customer
INSERT INTO Customer (CustomerID, Name, Email, Address, PhoneNumber) VALUES
(1001, 'John Doe', 'john.doe@example.com', '123 Main St', '123-456-7890'),
(1002, 'Jane Smith', 'jane.smith@example.com', '456 Elm St', '987-654-3210'),
(1003, 'Alice Johnson', 'alice.johnson@example.com', '789 Pine St', '111-222-3333'),
(1004, 'Bob White', 'bob.white@example.com', '101 Maple St', '444-555-6666'),
(1005, 'Charlie Brown', 'charlie.brown@example.com', '202 Oak St', '777-888-9999');
```

```sql
-- Insert into Shipment
INSERT INTO Shipment (ShipmentID, OrderID, ShipmentDate, TrackingNumber, DeliveryStatus) VALUES
(1001, 1001, '2023-10-01', 'TN001', 'Delivered'),
(1002, 1002, '2023-10-02', 'TN002', 'In Transit'),
(1003, 1003, '2023-10-03', 'TN003', 'Delivered'),
(1004, 1004, '2023-10-04', 'TN004', 'Pending'),
(1005, 1005, '2023-10-05', 'TN005', 'Delivered');

-- Insert into [Order]
INSERT INTO [Order] (OrderID, Date, CustomerID, Status) VALUES
(1001, '2023-10-01', 1001, 'Completed'),
(1002, '2023-10-02', 1002, 'Pending'),
(1003, '2023-10-03', 1003, 'Cancelled'),
(1004, '2023-10-04', 1004, 'Processing'),
(1005, '2023-10-05', 1005, 'Completed');

-- Insert into Product
INSERT INTO Product (ProductID, Name, Price, CategoryID, SellerID, StockQuantity) VALUES
(1001, 'Laptop', 999.99, 1001, 1001, 10),
(1002, 'Phone', 499.99, 1001, 1002, 20),
(1003, 'Headphones', 49.99, 1002, 1003, 30),
(1004, 'Keyboard', 29.99, 1002, 1004, 40),
(1005, 'Mouse', 19.99, 1002, 1005, 50);

-- Insert into Category
INSERT INTO Category (CategoryID, CategoryName) VALUES
(1001, 'Electronics'),
(1002, 'Accessories'),
(1003, 'Clothing'),
(1004, 'Books'),
(1005, 'Home & Kitchen');

-- Insert into Seller
INSERT INTO Seller (SellerID, Name, ContactInfo, StoreName) VALUES
(1001, 'BestElectronics', 'contact@bestelectronics.com', 'Best Electronics Store'),
(1002, 'TechWorld', 'contact@techworld.com', 'Tech World'),
(1003, 'SoundGear', 'contact@soundgear.com', 'Sound Gear'),
(1004, 'TypeIt', 'contact@typeit.com', 'TypeIt Keyboards'),
(1005, 'ClickNGo', 'contact@clickngo.com', 'ClickNGo');

-- Insert into OrderDetail
INSERT INTO OrderDetail (OrderDetailID, OrderID, ProductID, Quantity) VALUES
(1001, 1001, 1001, 1),
(1002, 1002, 1002, 2),
(1003, 1003, 1003, 3),
(1004, 1004, 1004, 4),
(1005, 1005, 1005, 5);

-- Insert into [Transaction]
INSERT INTO [Transaction] (TransactionID, OrderID, TransactionAmount, TransactionDate, PaymentMethod) VALUES
(1001, 1001, 999.99, '2023-10-01', 'Credit Card'),
(1002, 1002, 999.98, '2023-10-02', 'Debit Card'),
(1003, 1003, 149.97, '2023-10-03', 'PayPal'),
(1004, 1004, 119.96, '2023-10-04', 'Bank Transfer'),
(1005, 1005, 99.95, '2023-10-05', 'Cash');
```

```sql
-- Insert into Review

INSERT INTO Review (ReviewID, ProductID, CustomerID, Rating, Comment) VALUES

(1001, 1001, 1001, 5, 'Great product!'),

(1002, 1002, 1002, 4, 'Good value for money.'),

(1003, 1003, 1003, 3, 'Average headphones.'),

(1004, 1004, 1004, 2, 'Not very comfortable.'),

(1005, 1005, 1005, 1, 'Stopped working after a week.');


-- Insert into Inquiry

INSERT INTO Inquiry (InquiryID, CustomerID, InquiryText, ResponseText, Status) VALUES

(1001, 1001, 'When will my order ship?', 'Your order will ship tomorrow.', 'Answered'),

(1002, 1002, 'How do I return a product?', 'Please contact customer service.', 'Pending'),

(1003, 1003, 'Do you have this product in blue?', 'Yes, we do have it in blue.', 'Answered'),

(1004, 1004, 'How long is the warranty?', 'The warranty is for one year.', 'Answered'),

(1005, 1005, 'Can I change my shipping address?', 'Please call us ASAP to change the address.', 'Pending');
```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SQLQuery1.sql - DE...-IDE3TTS\user (71))*
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Messages
100 %
Query executed successfully.
DESKTOP-IDE3TTS (16.0 RTM)
DESKTOP-IDE3TTS\user (68)
Online_Retail
00:00:00
0 rows

```sql
USE Online_Retail;

-- Insert into Customer
INSERT INTO Customer (CustomerID, Name, Email, Address, PhoneNumber) VALUES
(1001, 'John Doe', 'john.doe@example.com', '123 Main St', '123-456-7890'),
(1002, 'Jane Smith', 'jane.smith@example.com', '456 Elm St', '987-654-3210'),
(1003, 'Alice Johnson', 'alice.johnson@example.com', '789 Pine St', '111-222-3333'),
(1004, 'Bob White', 'bob.white@example.com', '101 Maple St', '444-555-6666'),
(1005, 'Charlie Brown', 'charlie.brown@example.com', '202 Oak St', '777-888-9999');

-- Insert into Shipment
INSERT INTO Shipment (ShipmentID, OrderID, ShipmentDate, TrackingNumber, DeliveryStatus) VALUES
(1001, 1001, '2023-10-01', 'TN001', 'Delivered'),
(1002, 1002, '2023-10-02', 'TN002', 'In Transit'),
(1003, 1003, '2023-10-03', 'TN003', 'Delivered'),
(1004, 1004, '2023-10-04', 'TN004', 'Pending'),
(1005, 1005, '2023-10-05', 'TN005', 'Delivered');

-- Insert into [Order]
INSERT INTO [Order] (OrderID, Date, CustomerID, Status) VALUES
(1001, '2023-10-01', 1001, 'Completed'),
(1002, '2023-10-02', 1002, 'Pending'),
(1003, '2023-10-03', 1003, 'Cancelled'),
(1004, '2023-10-04', 1004, 'Processing'),
(1005, '2023-10-05', 1005, 'Cancelled'),
```

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(5 rows affected)

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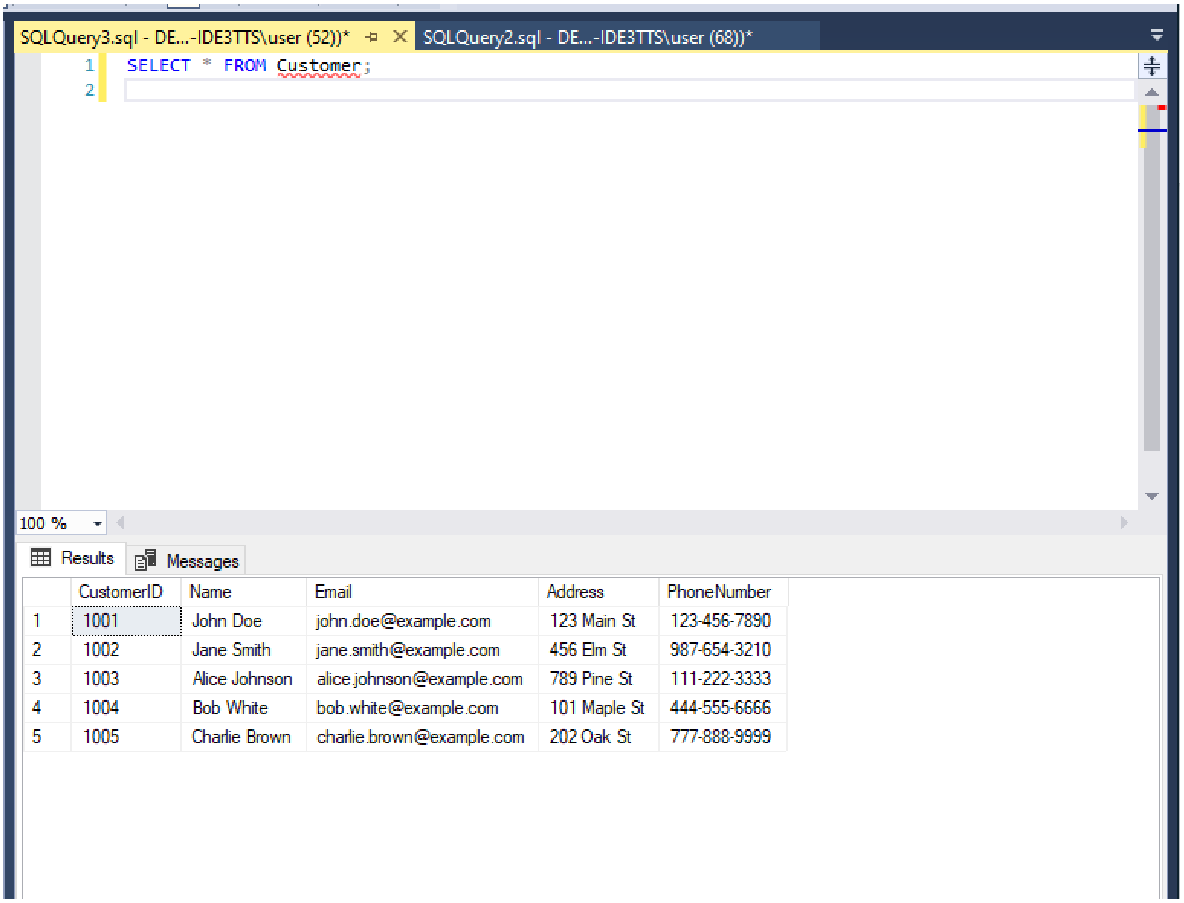
Completion time: 2023-10-28T21:14:18.3291553+03:00
```

c. Execute SELECT SQL statements to retrieve data from the database

Retrieving all customers:

SELECT * FROM Customer;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SQLQuery2.sql - DE...-IDE3TTS\user (68))*
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Results
Messages

```
SELECT * FROM Customer;
```

	CustomerID	Name	Email	Address	PhoneNumber
1	1001	John Doe	john.doe@example.com	123 Main St	123-456-7890
2	1002	Jane Smith	jane.smith@example.com	456 Elm St	987-654-3210
3	1003	Alice Johnson	alice.johnson@example.com	789 Pine St	111-222-3333
4	1004	Bob White	bob.white@example.com	101 Maple St	444-555-6666
5	1005	Charlie Brown	charlie.brown@example.com	202 Oak St	777-888-9999

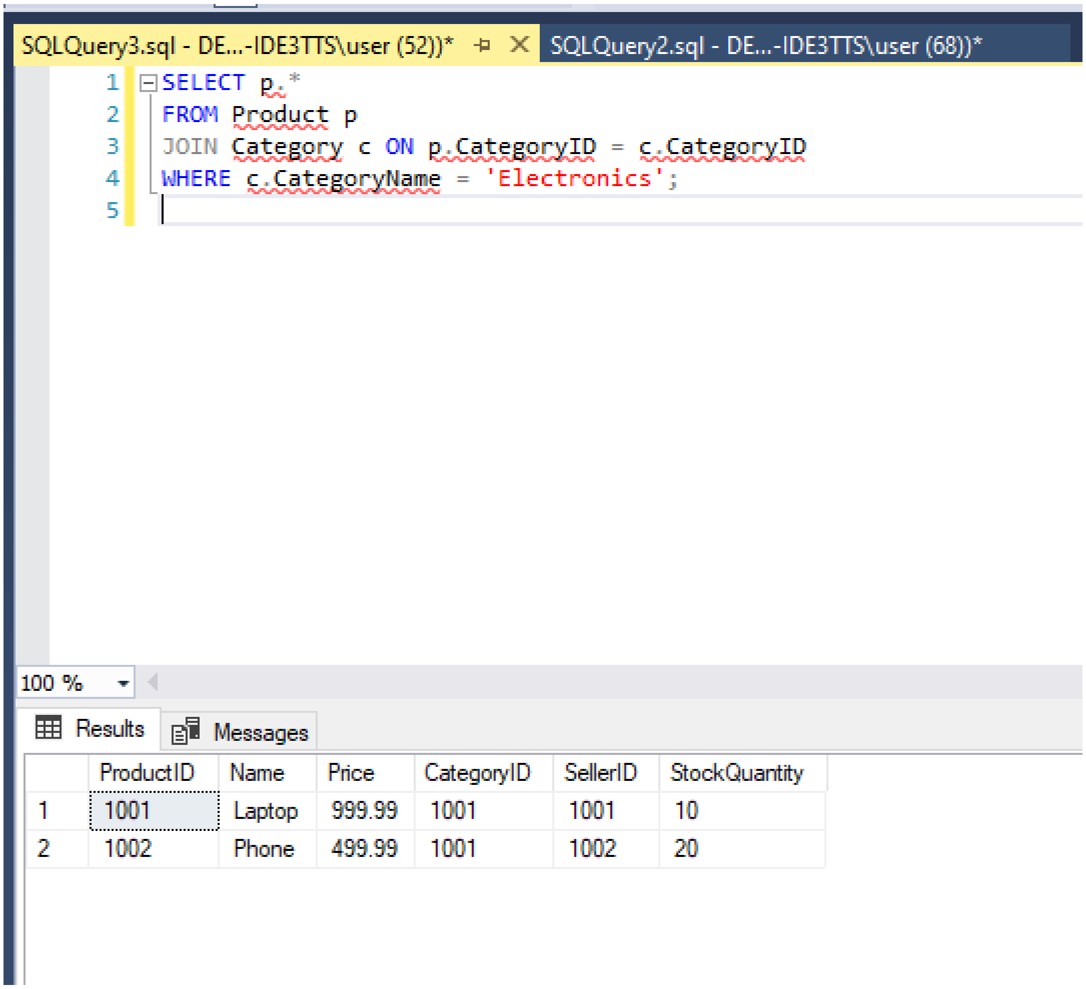
Retrieving all products in the 'Electronics' category:

```
SELECT p.*

FROM Product p

JOIN Category c ON p.CategoryID = c.CategoryID

WHERE c.CategoryName = 'Electronics';
```



SQLQuery3.sql - DE...-IDE3TTS\user (52))*
SQLQuery2.sql - DE...-IDE3TTS\user (68))*
100 %
Results
Messages

```
SELECT p.*
FROM Product p
JOIN Category c ON p.CategoryID = c.CategoryID
WHERE c.CategoryName = 'Electronics';
```

	ProductID	Name	Price	CategoryID	SellerID	StockQuantity
1	1001	Laptop	999.99	1001	1001	10
2	1002	Phone	499.99	1001	1002	20

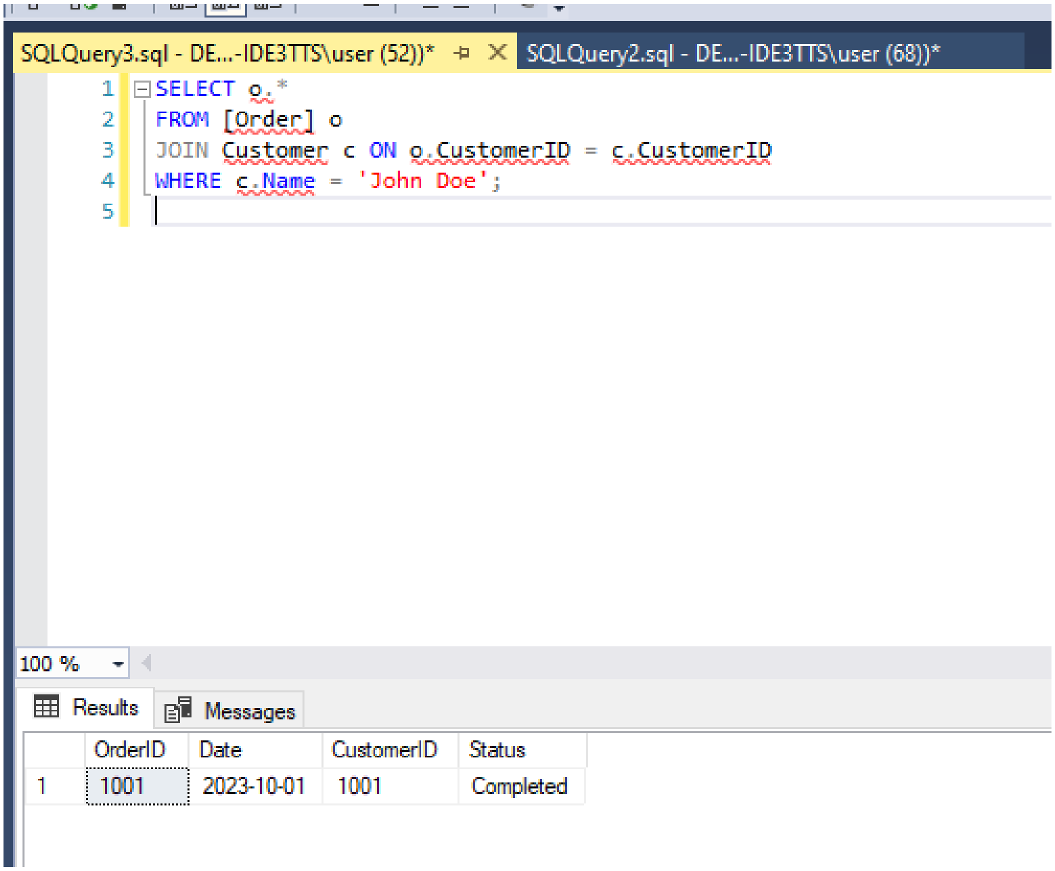
Retrieving all orders for a specific customer (e.g., John Doe):

SELECT o.*

FROM [Order] o

JOIN Customer c ON o.CustomerID = c.CustomerID

WHERE c.Name = 'John Doe';



SQLQuery3.sql - DE...-IDE3TTS\user (52))*
SQLQuery2.sql - DE...-IDE3TTS\user (68))*
100 %
Results
Messages

```
SELECT o.*
FROM [Order] o
JOIN Customer c ON o.CustomerID = c.CustomerID
WHERE c.Name = 'John Doe';
```

	OrderID	Date	CustomerID	Status
1	1001	2023-10-01	1001	Completed

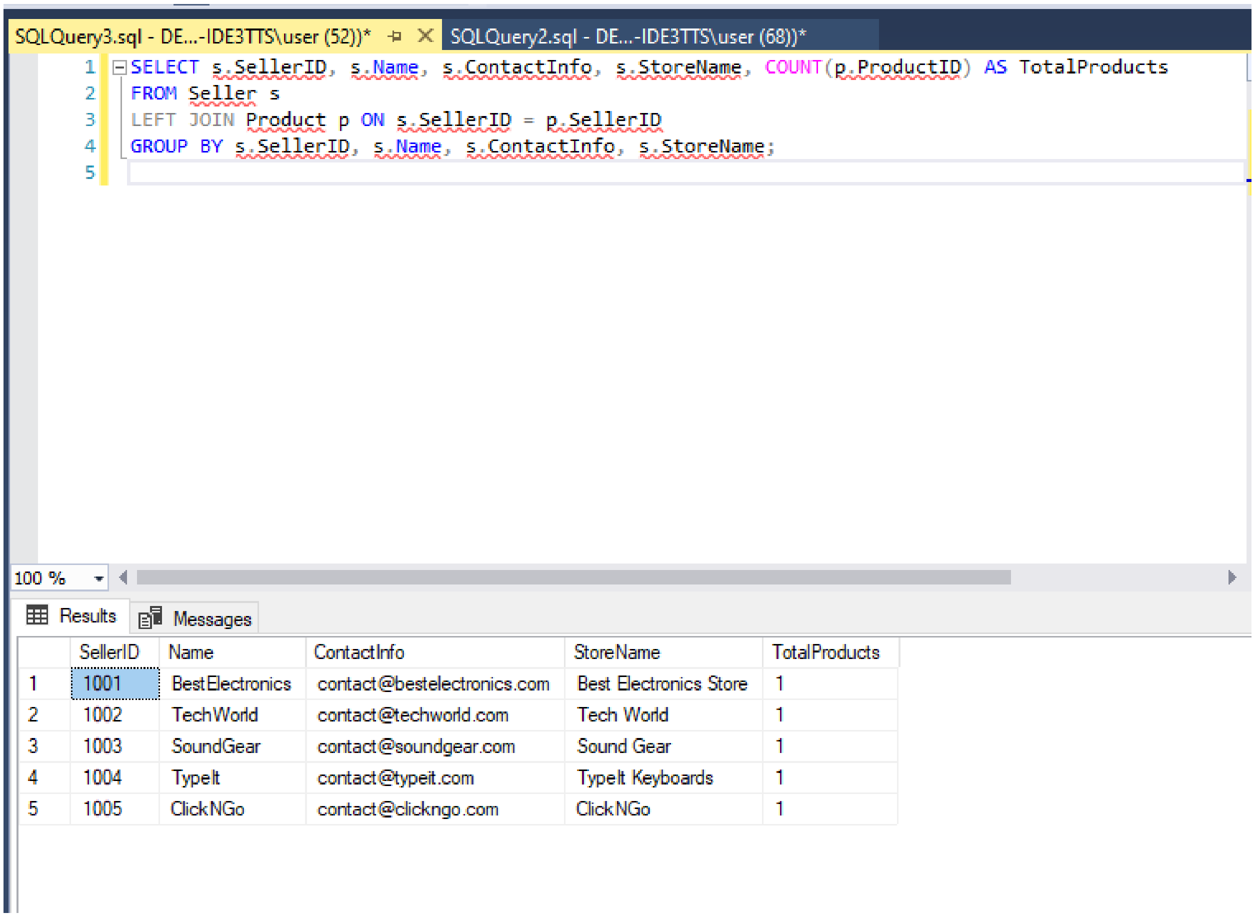
Retrieving all sellers and their total number of products:

SELECT s.SellerID, s.Name, s.ContactInfo, s.StoreName, COUNT(p.ProductID) AS TotalProducts

FROM Seller s

LEFT JOIN Product p ON s.SellerID = p.SellerID

GROUP BY s.SellerID, s.Name, s.ContactInfo, s.StoreName;


SQLQuery3.sql - DE...-IDE3TTS\user (52))*
SQLQuery2.sql - DE...-IDE3TTS\user (68))*
100 %
Results
Messages

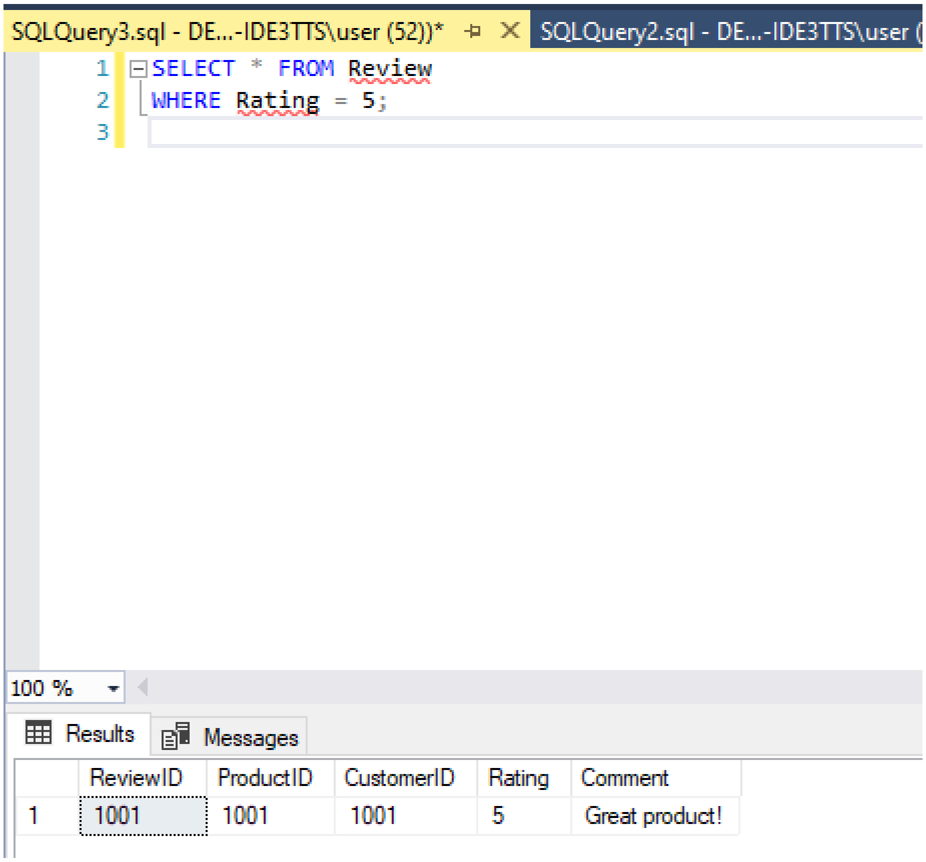
```
SELECT s.SellerID, s.Name, s.ContactInfo, s.StoreName, COUNT(p.ProductID) AS TotalProducts
FROM Seller s
LEFT JOIN Product p ON s.SellerID = p.SellerID
GROUP BY s.SellerID, s.Name, s.ContactInfo, s.StoreName;
```

	SellerID	Name	ContactInfo	StoreName	TotalProducts
1	1001	BestElectronics	contact@bestelectronics.com	Best Electronics Store	1
2	1002	TechWorld	contact@techworld.com	Tech World	1
3	1003	SoundGear	contact@soundgear.com	Sound Gear	1
4	1004	TypeIt	contact@typeit.com	TypeIt Keyboards	1
5	1005	ClickNGo	contact@clickngo.com	ClickNGo	1

Retrieve all reviews with a rating of 5:

SELECT * FROM Review

WHERE Rating = 5;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SQLQuery2.sql - DE...-IDE3TTS\user (
100 %
Results
Messages

```
SELECT * FROM Review
WHERE Rating = 5;
```

	ReviewID	ProductID	CustomerID	Rating	Comment
1	1001	1001	1001	5	Great product!

Retrieve the total sales amount per order:

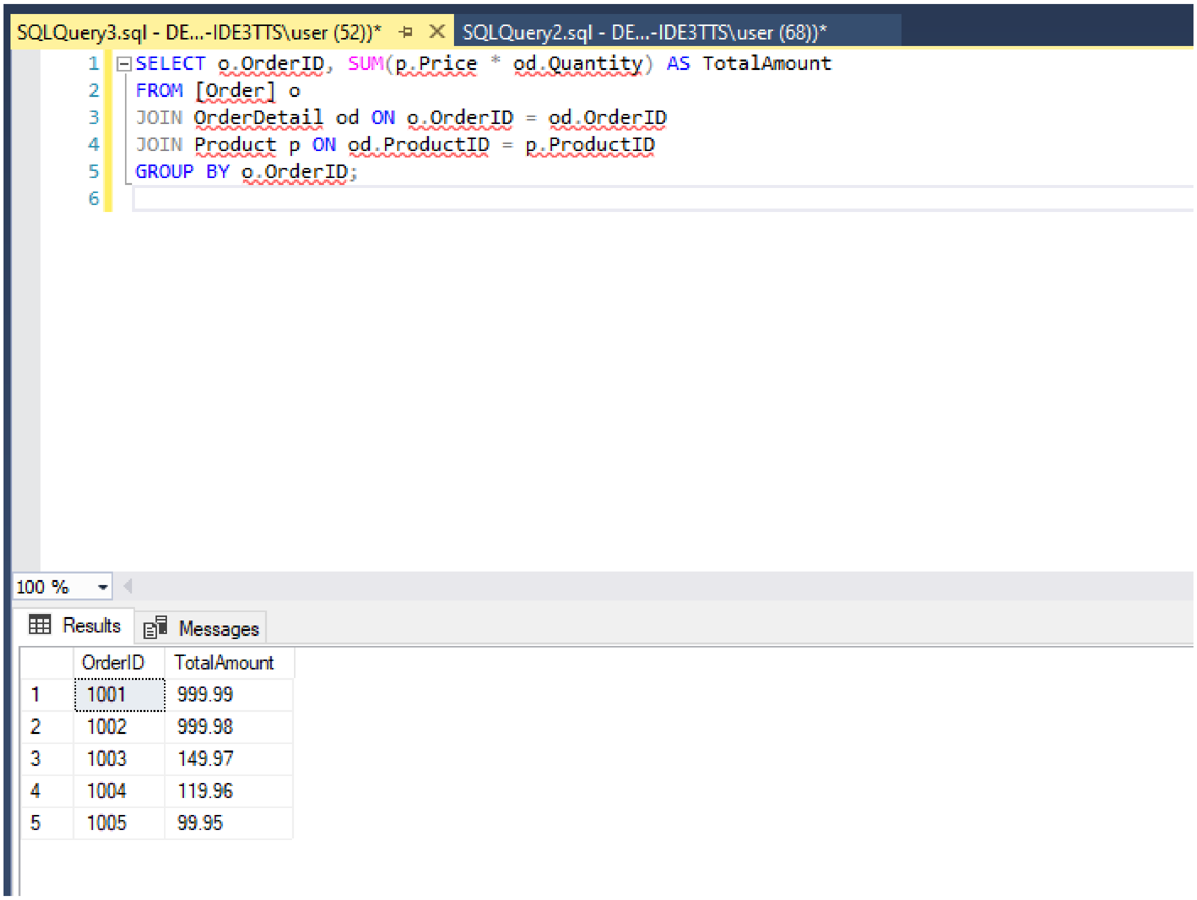
```
SELECT o.OrderID, SUM(p.Price * od.Quantity) AS TotalAmount

FROM [Order] o

JOIN OrderDetail od ON o.OrderID = od.OrderID

JOIN Product p ON od.ProductID = p.ProductID

GROUP BY o.OrderID;
```



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SQLQuery2.sql - DE...-IDE3TTS\user (68))*
100 %
Results
Messages

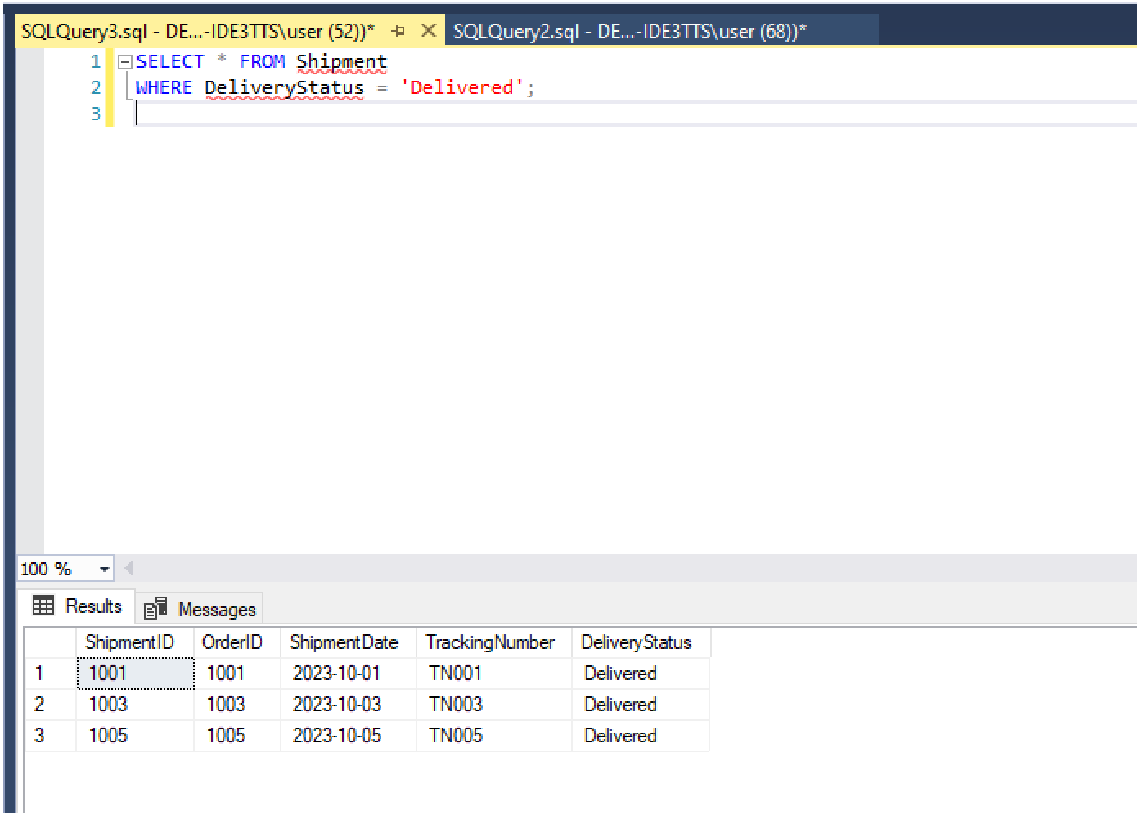
```sql
SELECT o.OrderID, SUM(p.Price * od.Quantity) AS TotalAmount
FROM [Order] o
JOIN OrderDetail od ON o.OrderID = od.OrderID
JOIN Product p ON od.ProductID = p.ProductID
GROUP BY o.OrderID;
```

	OrderID	TotalAmount
1	1001	999.99
2	1002	999.98
3	1003	149.97
4	1004	119.96
5	1005	99.95

Retrieving all shipments that have a 'Delivered' status

SELECT * FROM Shipment

WHERE DeliveryStatus = 'Delivered';



SQLQuery3.sql - DE...-IDE3TTS\user (52))*
SQLQuery2.sql - DE...-IDE3TTS\user (68))*
100 %
Results
Messages

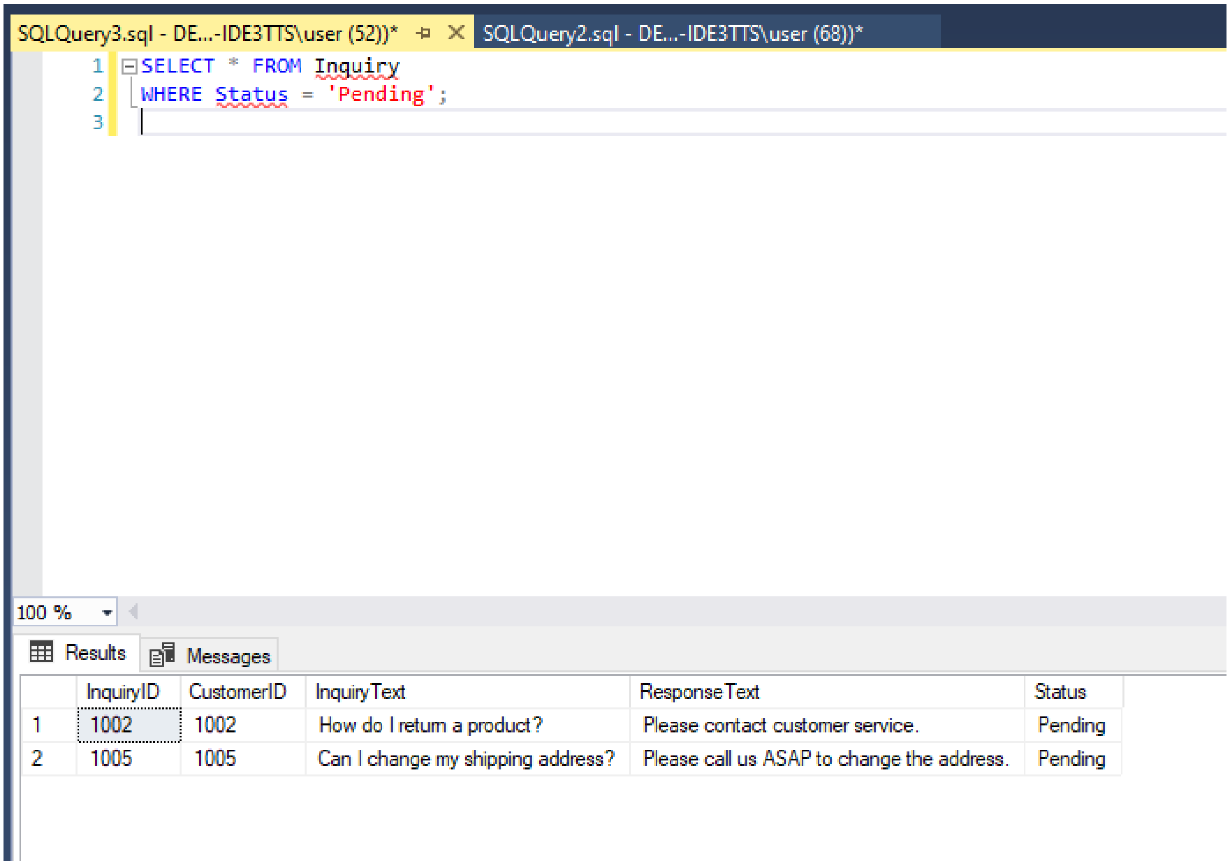
```sql
SELECT * FROM Shipment
WHERE DeliveryStatus = 'Delivered';
```

	ShipmentID	OrderID	ShipmentDate	TrackingNumber	DeliveryStatus
1	1001	1001	2023-10-01	TN001	Delivered
2	1003	1003	2023-10-03	TN003	Delivered
3	1005	1005	2023-10-05	TN005	Delivered

Retrieving all inquiries that are still pending:

SELECT * FROM Inquiry

WHERE Status = 'Pending';



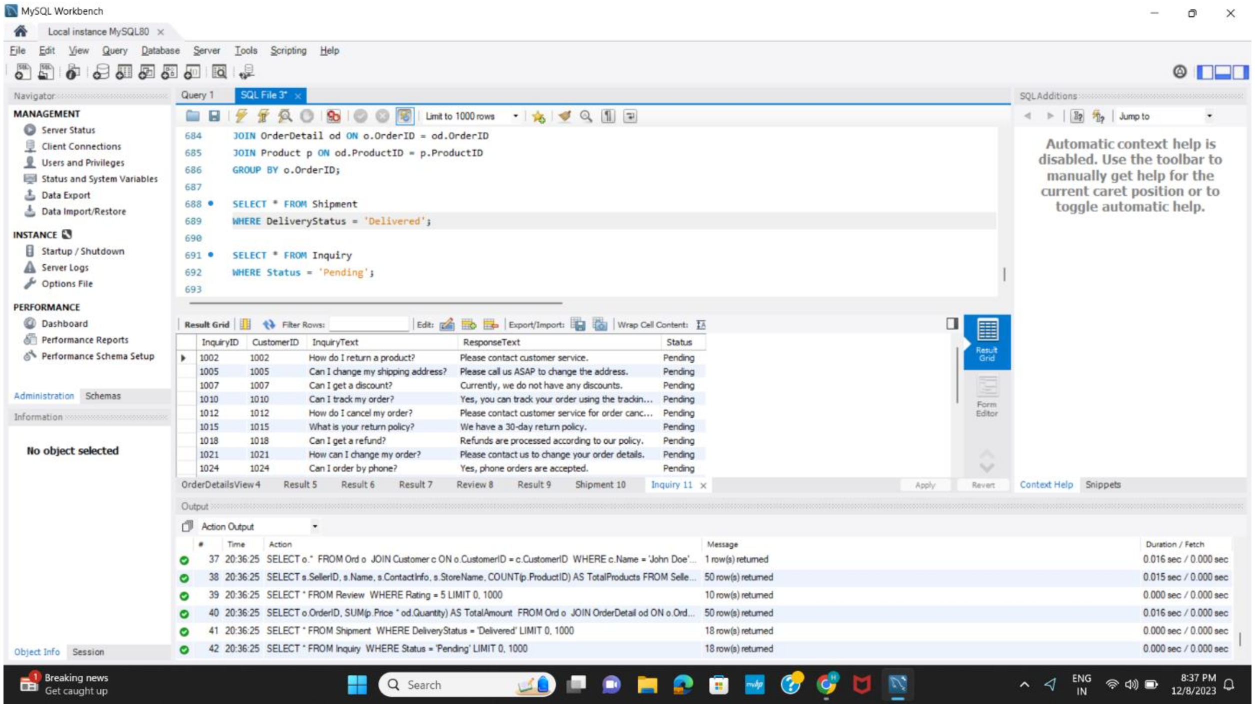
SQLQuery3.sql - DE...-IDE3TTS\user (52))*
SQLQuery2.sql - DE...-IDE3TTS\user (68))*
100 %
Results
Messages

```sql
SELECT * FROM Inquiry
WHERE Status = 'Pending';
```

	InquiryID	CustomerID	InquiryText	ResponseText	Status
1	1002	1002	How do I return a product?	Please contact customer service.	Pending
2	1005	1005	Can I change my shipping address?	Please call us ASAP to change the address.	Pending

Data Population

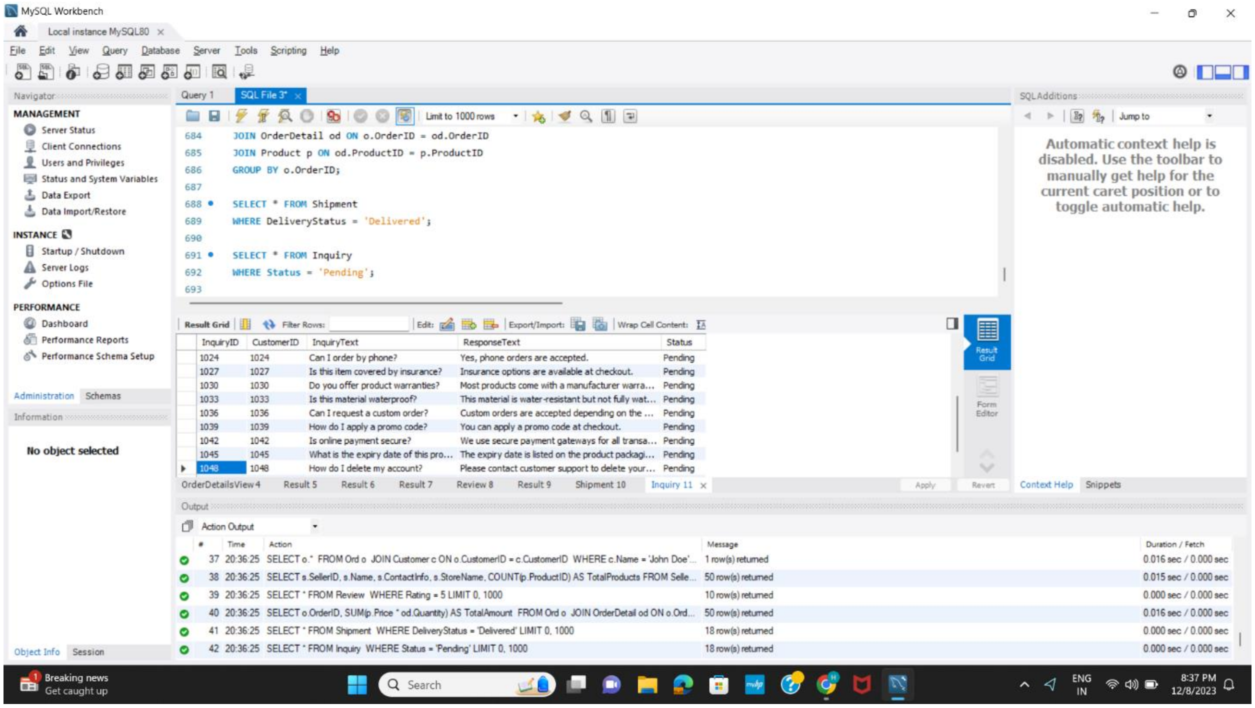
Population databases are fundamental ingredients to analyses of social and economic change and development. Insofar as these analyses are often the basis for policy making and programme formulation, it is important to have a sound understanding of the strengths and limitations of such databases.



```
JOIN OrderDetail od ON o.OrderID = od.OrderID
JOIN Product p ON od.ProductID = p.ProductID
GROUP BY o.OrderID;

SELECT * FROM Shipment
WHERE DeliveryStatus = 'Delivered';

SELECT * FROM Inquiry
WHERE Status = 'Pending';
```

InquiryID	CustomerID	InquiryText	ResponseText	Status
1002	1002	How do I return a product?	Please contact customer service.	Pending
1005	1005	Can I change my shipping address?	Please call us ASAP to change the address.	Pending
1007	1007	Can I get a discount?	Currently, we do not have any discounts.	Pending
1010	1010	Can I track my order?	Yes, you can track your order using the trackin...	Pending
1012	1012	How do I cancel my order?	Please contact customer service for order canc...	Pending
1015	1015	What is your return policy?	We have a 30-day return policy.	Pending
1018	1018	Can I get a refund?	Refunds are processed according to our policy.	Pending
1021	1021	How can I change my order?	Please contact us to change your order details.	Pending
1024	1024	Can I order by phone?	Yes, phone orders are accepted.	Pending

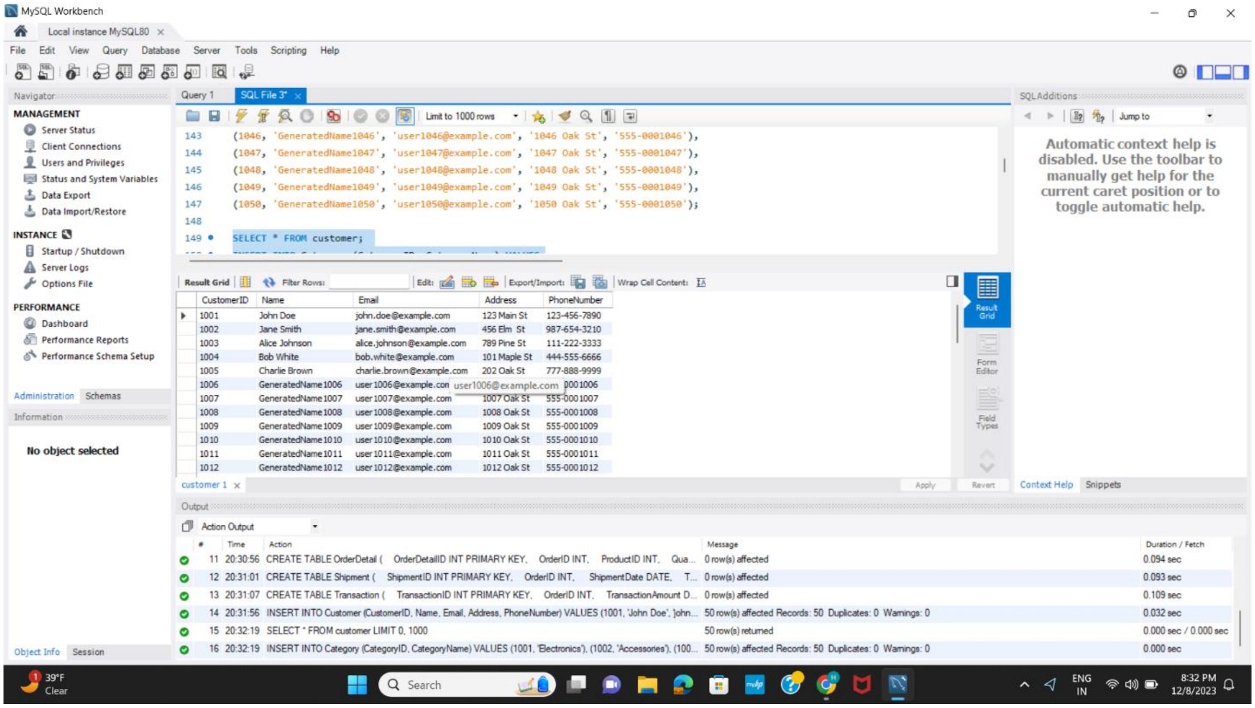
```
#   Time      Action                                                                                 Message              Duration / Fetch
37  20:36:25  SELECT o.* FROM Ord o  JOIN Customer c ON o.CustomerID = c.CustomerID  WHERE c.Name = 'John Doe'...  1 row(s) returned    0.016 sec / 0.000 sec
38  20:36:25  SELECT s.SellerID, s.Name, s.ContactInfo, s.StoreName, COUNT(p.ProductID) AS TotalProducts FROM Selle...  50 row(s) returned   0.015 sec / 0.000 sec
39  20:36:25  SELECT * FROM Review  WHERE Rating = 5 LIMIT 0, 1000                                                     10 row(s) returned   0.000 sec / 0.000 sec
40  20:36:25  SELECT o.OrderID, SUM(p.Price * od.Quantity) AS TotalAmount  FROM Ord o  JOIN OrderDetail od ON o.Ord...  50 row(s) returned   0.016 sec / 0.000 sec
41  20:36:25  SELECT * FROM Shipment  WHERE DeliveryStatus = 'Delivered' LIMIT 0, 1000                                  18 row(s) returned   0.000 sec / 0.000 sec
42  20:36:25  SELECT * FROM Inquiry  WHERE Status = 'Pending' LIMIT 0, 1000                                            18 row(s) returned   0.000 sec / 0.000 sec
```



```
JOIN OrderDetail od ON o.OrderID = od.OrderID
JOIN Product p ON od.ProductID = p.ProductID
GROUP BY o.OrderID;

SELECT * FROM Shipment
WHERE DeliveryStatus = 'Delivered';

SELECT * FROM Inquiry
WHERE Status = 'Pending';
```

InquiryID	CustomerID	InquiryText	ResponseText	Status
1024	1024	Can I order by phone?	Yes, phone orders are accepted.	Pending
1027	1027	Is this item covered by insurance?	Insurance options are available at checkout.	Pending
1030	1030	Do you offer product warranties?	Most products come with a manufacturer warra...	Pending
1033	1033	Is this material waterproof?	This material is water-resistant but not fully wat...	Pending
1036	1036	Can I request a custom order?	Custom orders are accepted depending on the ...	Pending
1039	1039	How do I apply a promo code?	You can apply a promo code at checkout.	Pending
1042	1042	Is online payment secure?	We use secure payment gateways for all transa...	Pending
1045	1045	What is the expiry date of this pro...	The expiry date is listed on the product packagi...	Pending
1048	1048	How do I delete my account?	Please contact customer support to delete your...	Pending

```
#   Time      Action                                                                                 Message              Duration / Fetch
37  20:36:25  SELECT o.* FROM Ord o  JOIN Customer c ON o.CustomerID = c.CustomerID  WHERE c.Name = 'John Doe'...  1 row(s) returned    0.016 sec / 0.000 sec
38  20:36:25  SELECT s.SellerID, s.Name, s.ContactInfo, s.StoreName, COUNT(p.ProductID) AS TotalProducts FROM Selle...  50 row(s) returned   0.015 sec / 0.000 sec
39  20:36:25  SELECT * FROM Review  WHERE Rating = 5 LIMIT 0, 1000                                                     10 row(s) returned   0.000 sec / 0.000 sec
40  20:36:25  SELECT o.OrderID, SUM(p.Price * od.Quantity) AS TotalAmount  FROM Ord o  JOIN OrderDetail od ON o.Ord...  50 row(s) returned   0.016 sec / 0.000 sec
41  20:36:25  SELECT * FROM Shipment  WHERE DeliveryStatus = 'Delivered' LIMIT 0, 1000                                  18 row(s) returned   0.000 sec / 0.000 sec
42  20:36:25  SELECT * FROM Inquiry  WHERE Status = 'Pending' LIMIT 0, 1000                                            18 row(s) returned   0.000 sec / 0.000 sec
```



```
(1046, 'GeneratedName1046', 'user1046@example.com', '1046 Oak St', '555-0001046'),
(1047, 'GeneratedName1047', 'user1047@example.com', '1047 Oak St', '555-0001047'),
(1048, 'GeneratedName1048', 'user1048@example.com', '1048 Oak St', '555-0001048'),
(1049, 'GeneratedName1049', 'user1049@example.com', '1049 Oak St', '555-0001049'),
(1050, 'GeneratedName1050', 'user1050@example.com', '1050 Oak St', '555-0001050');

SELECT * FROM customer;
```

CustomerID	Name	Email	Address	PhoneNumber
1001	John Doe	john.doe@example.com	123 Main St	123-456-7890
1002	Jane Smith	jane.smith@example.com	456 Elm St	987-654-3210
1003	Alice Johnson	alice.johnson@example.com	789 Pine St	111-222-3333
1004	Bob White	bob.white@example.com	101 Maple St	444-555-6666
1005	Charlie Brown	charlie.brown@example.com	202 Oak St	777-888-9999
1006	GeneratedName1006	user1006@example.con	user1006@example.com	001006
1007	GeneratedName1007	user1007@example.com	1007 Oak St	555-0001007
1008	GeneratedName1008	user1008@example.com	1008 Oak St	555-0001008
1009	GeneratedName1009	user1009@example.com	1009 Oak St	555-0001009
1010	GeneratedName1010	user1010@example.com	1010 Oak St	555-0001010
1011	GeneratedName1011	user1011@example.com	1011 Oak St	555-0001011
1012	GeneratedName1012	user1012@example.com	1012 Oak St	555-0001012

#	Time	Action	Message	Duration / Fetch
11	20:30:56	CREATE TABLE OrderDetail (OrderDetailID INT PRIMARY KEY, OrderID INT, ProductID INT, Qua...	0 row(s) affected	0.094 sec
12	20:31:01	CREATE TABLE Shipment (ShipmentID INT PRIMARY KEY, OrderID INT, ShipmentDate DATE, T...	0 row(s) affected	0.093 sec
13	20:31:07	CREATE TABLE Transaction (TransactionID INT PRIMARY KEY, OrderID INT, TransactionAmount D...	0 row(s) affected	0.109 sec
14	20:31:56	INSERT INTO Customer (CustomerID, Name, Email, Address, PhoneNumber) VALUES (1001, 'John Doe', 'john...	50 row(s) affected Records: 50 Duplicates: 0 Warnings: 0	0.032 sec
15	20:32:19	SELECT * FROM customer LIMIT 0, 1000	50 row(s) returned	0.000 sec / 0.000 sec
16	20:32:19	INSERT INTO Category (CategoryID, CategoryName) VALUES (1001, 'Electronics'), (1002, 'Accessories'), (100...	50 row(s) affected Records: 50 Duplicates: 0 Warnings: 0	0.000 sec

SQL Statement

A SQL statement is a set of instruction that consists of identifiers, parameters, variables, names, data types, and SQL reserved words that compiles successfully

Complex Queries

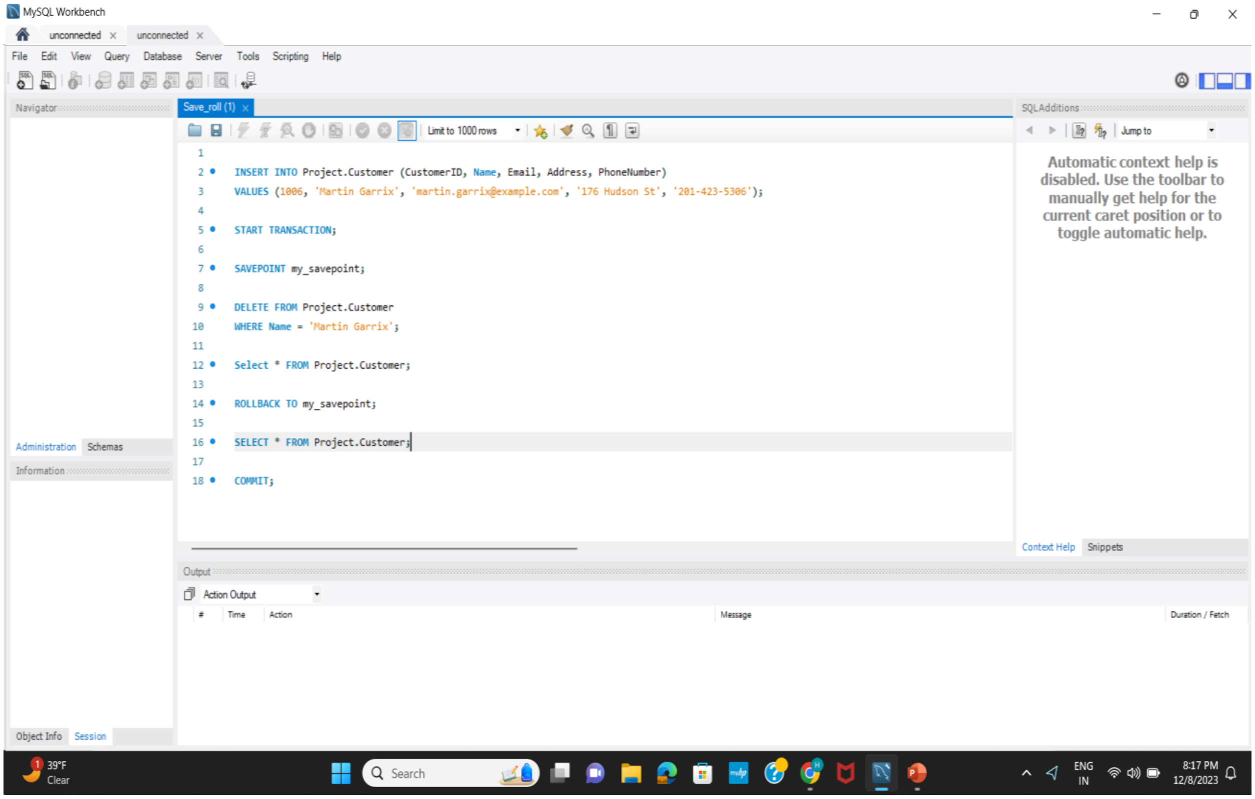
A complex query in SQL is one that has more complexity and that you need to give some more thought to when you design and write it.

4 major types of SQL queries

- DDL – Data Definition Language.
- DQL – Data Query Language.
- DML – Data Manipulation Language.
- DCL – Data Control Language.
- TCL – Transaction Control Language.

Savepoints and Rollback Operations

The savepoint remains valid and can be rolled back to again later if needed. When an operation is rolled back, any locks that are acquired by the operation are also rolled back. ROLLBACK TO SAVEPOINT implicitly destroys all savepoints that were established after the named savepoint.

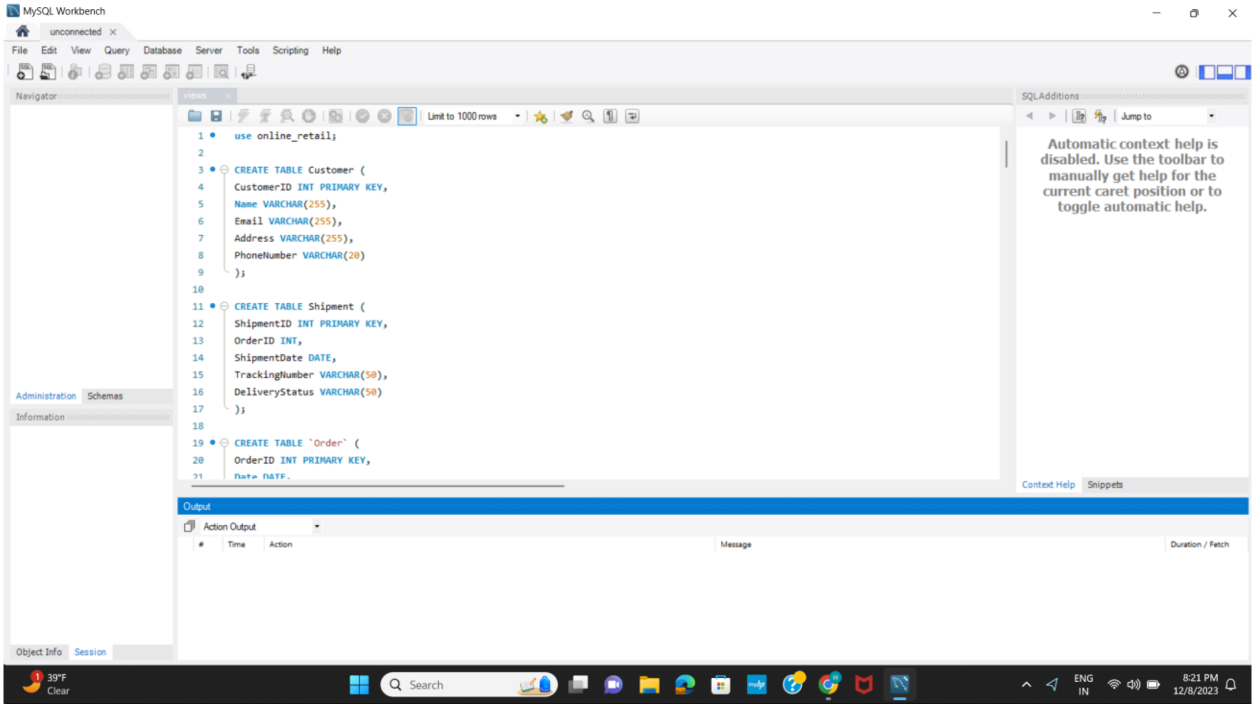


```
INSERT INTO Project.Customer (CustomerID, Name, Email, Address, PhoneNumber)
VALUES (1006, 'Martin Garrix', 'martin.garrix@example.com', '176 Hudson St', '201-423-5306');

START TRANSACTION;

SAVEPOINT my_savepoint;

DELETE FROM Project.Customer
WHERE Name = 'Martin Garrix';

Select * FROM Project.Customer;

ROLLBACK TO my_savepoint;

SELECT * FROM Project.Customer;

COMMIT;
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

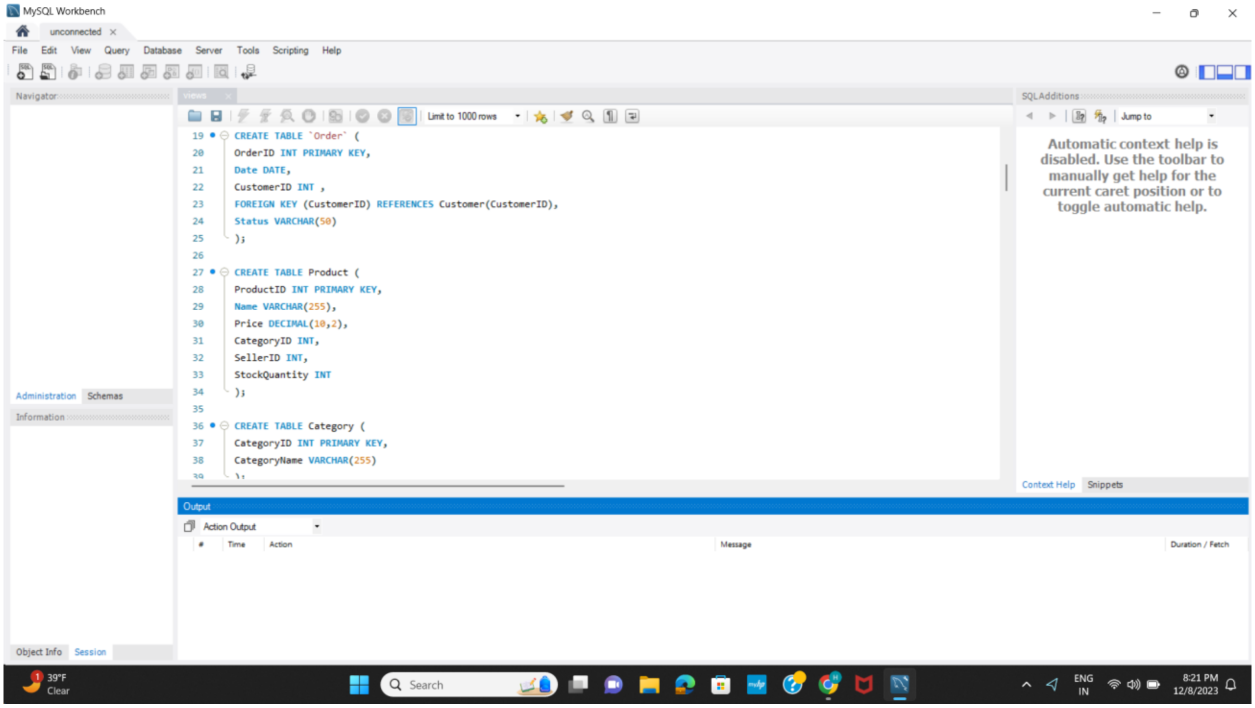
Views

In SQL, a view is a virtual table based on the result-set of an SQL statement. A view contains rows and columns, just like a real table. The fields in a view are fields from one or more real tables in the database.



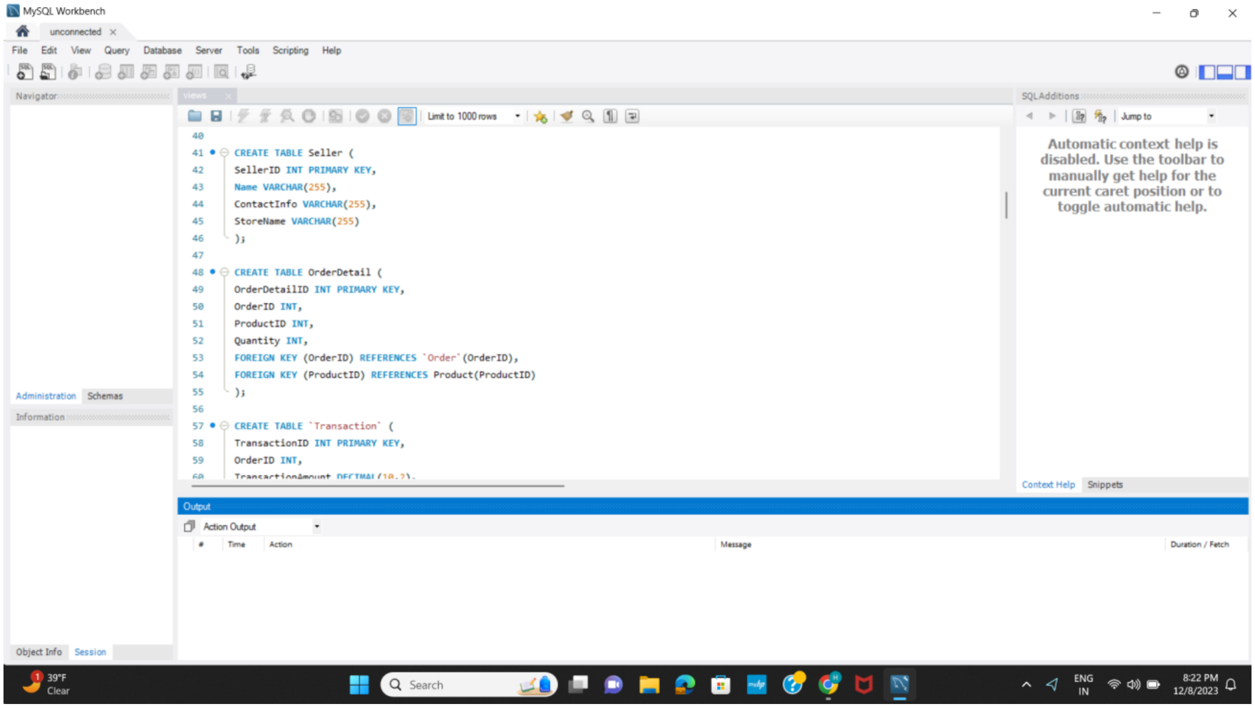
```
use online_retail;

CREATE TABLE Customer (
CustomerID INT PRIMARY KEY,
Name VARCHAR(255),
Email VARCHAR(255),
Address VARCHAR(255),
PhoneNumber VARCHAR(20)
);

CREATE TABLE Shipment (
ShipmentID INT PRIMARY KEY,
OrderID INT,
ShipmentDate DATE,
TrackingNumber VARCHAR(50),
DeliveryStatus VARCHAR(50)
);

CREATE TABLE `Order` (
OrderID INT PRIMARY KEY,
Date DATE,
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.



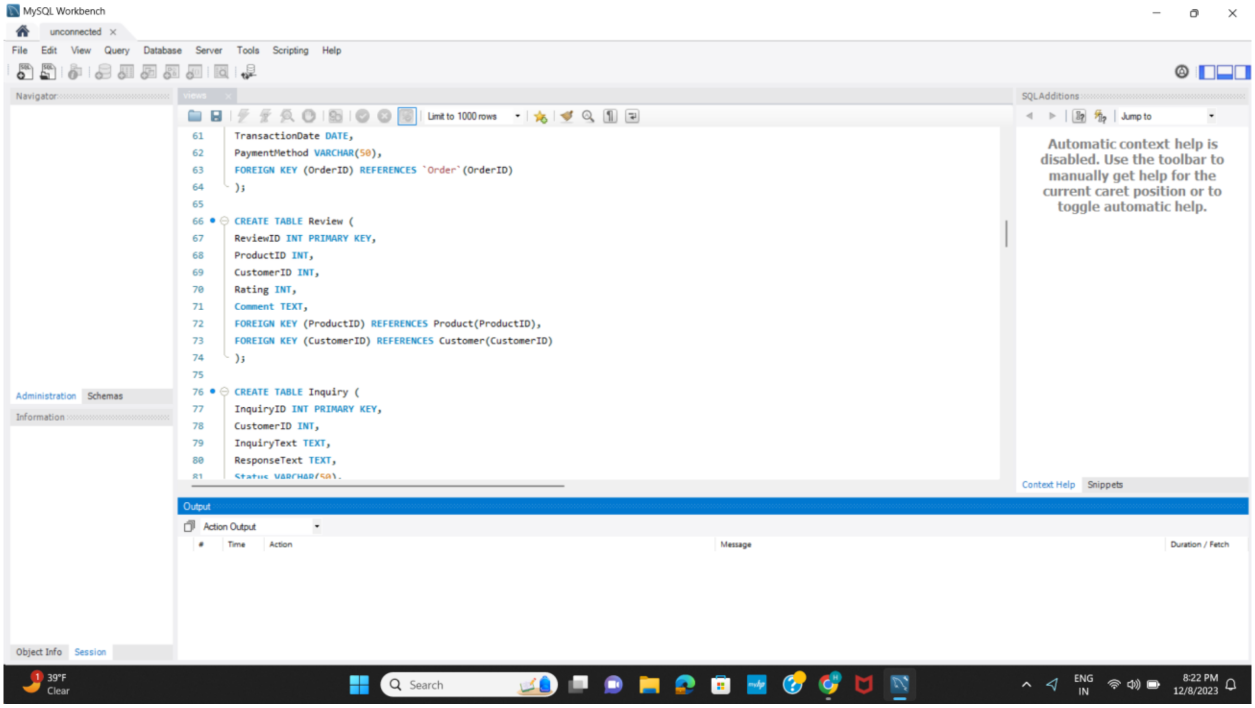
```sql
CREATE TABLE `Order` (
OrderID INT PRIMARY KEY,
Date DATE,
CustomerID INT ,
FOREIGN KEY (CustomerID) REFERENCES Customer(CustomerID),
Status VARCHAR(50)
);

CREATE TABLE Product (
ProductID INT PRIMARY KEY,
Name VARCHAR(255),
Price DECIMAL(10,2),
CategoryID INT,
SellerID INT,
StockQuantity INT
);

CREATE TABLE Category (
CategoryID INT PRIMARY KEY,
CategoryName VARCHAR(255)
);
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.



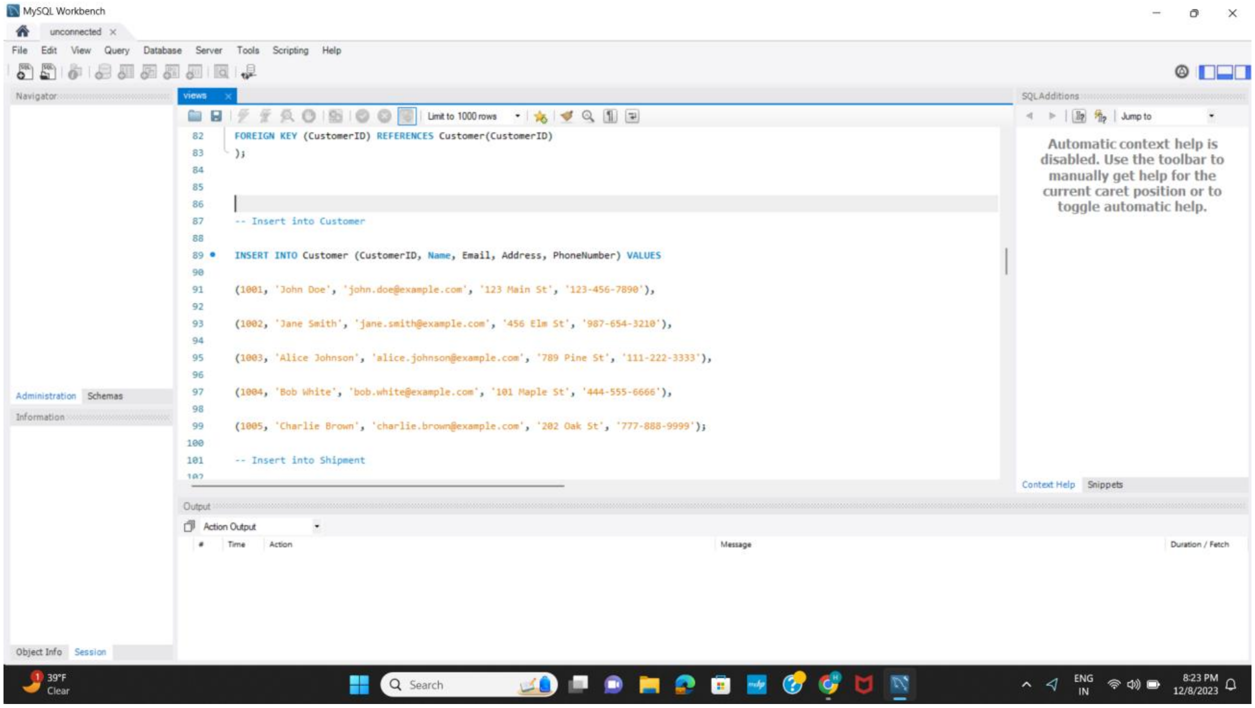
```sql

CREATE TABLE Seller (
SellerID INT PRIMARY KEY,
Name VARCHAR(255),
ContactInfo VARCHAR(255),
StoreName VARCHAR(255)
);

CREATE TABLE OrderDetail (
OrderDetailID INT PRIMARY KEY,
OrderID INT,
ProductID INT,
Quantity INT,
FOREIGN KEY (OrderID) REFERENCES `Order`(OrderID),
FOREIGN KEY (ProductID) REFERENCES Product(ProductID)
);

CREATE TABLE `Transaction` (
TransactionID INT PRIMARY KEY,
OrderID INT,
TransactionAmount DECIMAL(10,2),
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.



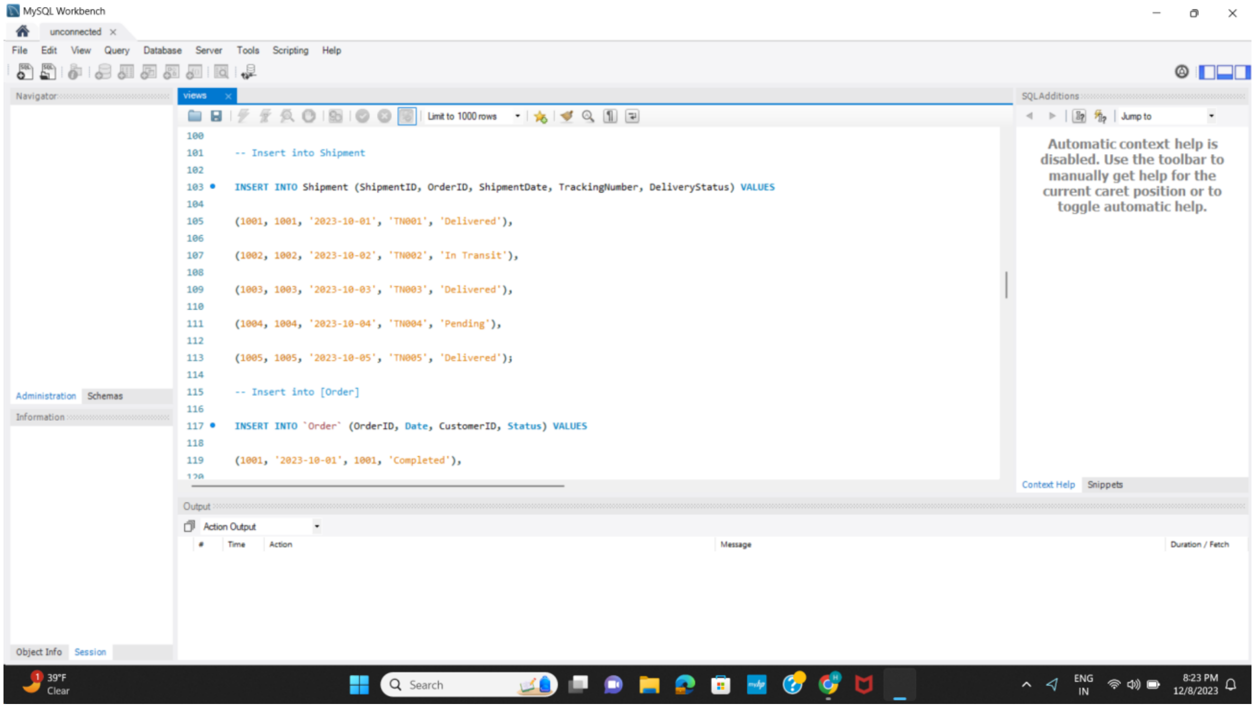
```sql
TransactionDate DATE,
PaymentMethod VARCHAR(50),
FOREIGN KEY (OrderID) REFERENCES `Order`(OrderID)
);

CREATE TABLE Review (
ReviewID INT PRIMARY KEY,
ProductID INT,
CustomerID INT,
Rating INT,
Comment TEXT,
FOREIGN KEY (ProductID) REFERENCES Product(ProductID),
FOREIGN KEY (CustomerID) REFERENCES Customer(CustomerID)
);

CREATE TABLE Inquiry (
InquiryID INT PRIMARY KEY,
CustomerID INT,
InquiryText TEXT,
ResponseText TEXT,
Status VARCHAR(50),
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.



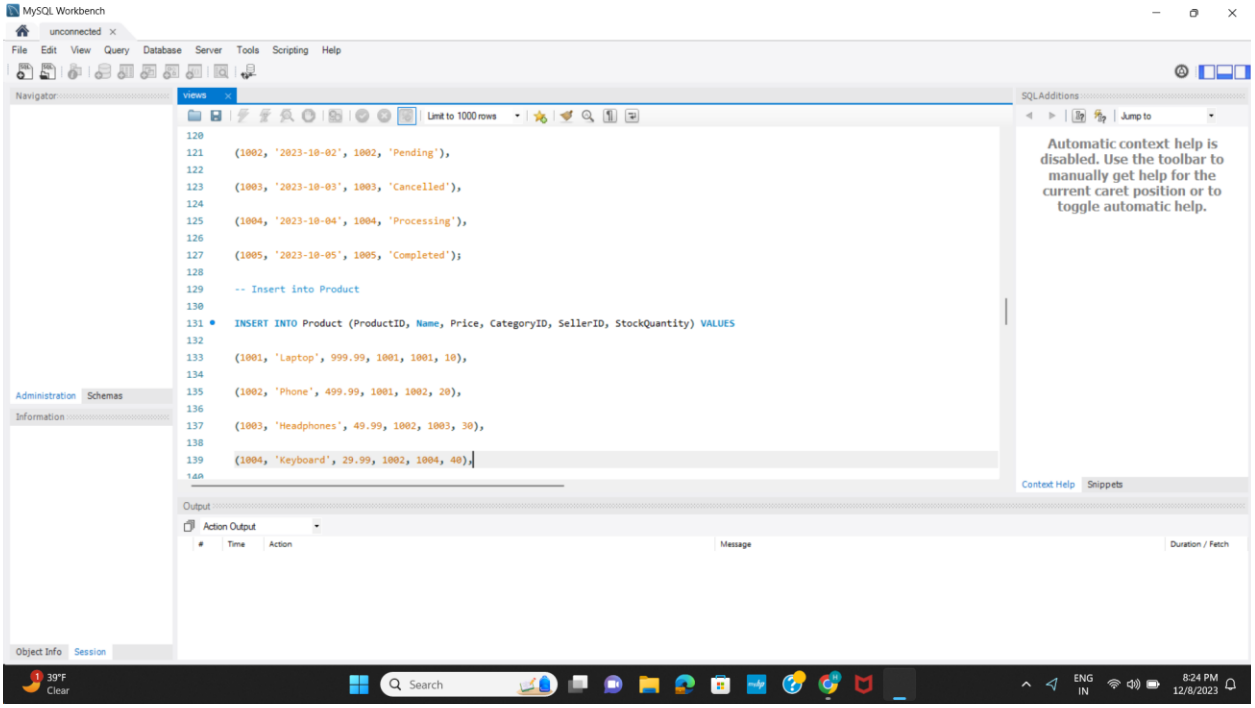
```sql
FOREIGN KEY (CustomerID) REFERENCES Customer(CustomerID)
);



-- Insert into Customer

INSERT INTO Customer (CustomerID, Name, Email, Address, PhoneNumber) VALUES

(1001, 'John Doe', 'john.doe@example.com', '123 Main St', '123-456-7890'),

(1002, 'Jane Smith', 'jane.smith@example.com', '456 Elm St', '987-654-3210'),

(1003, 'Alice Johnson', 'alice.johnson@example.com', '789 Pine St', '111-222-3333'),

(1004, 'Bob White', 'bob.white@example.com', '101 Maple St', '444-555-6666'),

(1005, 'Charlie Brown', 'charlie.brown@example.com', '202 Oak St', '777-888-9999');

-- Insert into Shipment
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.



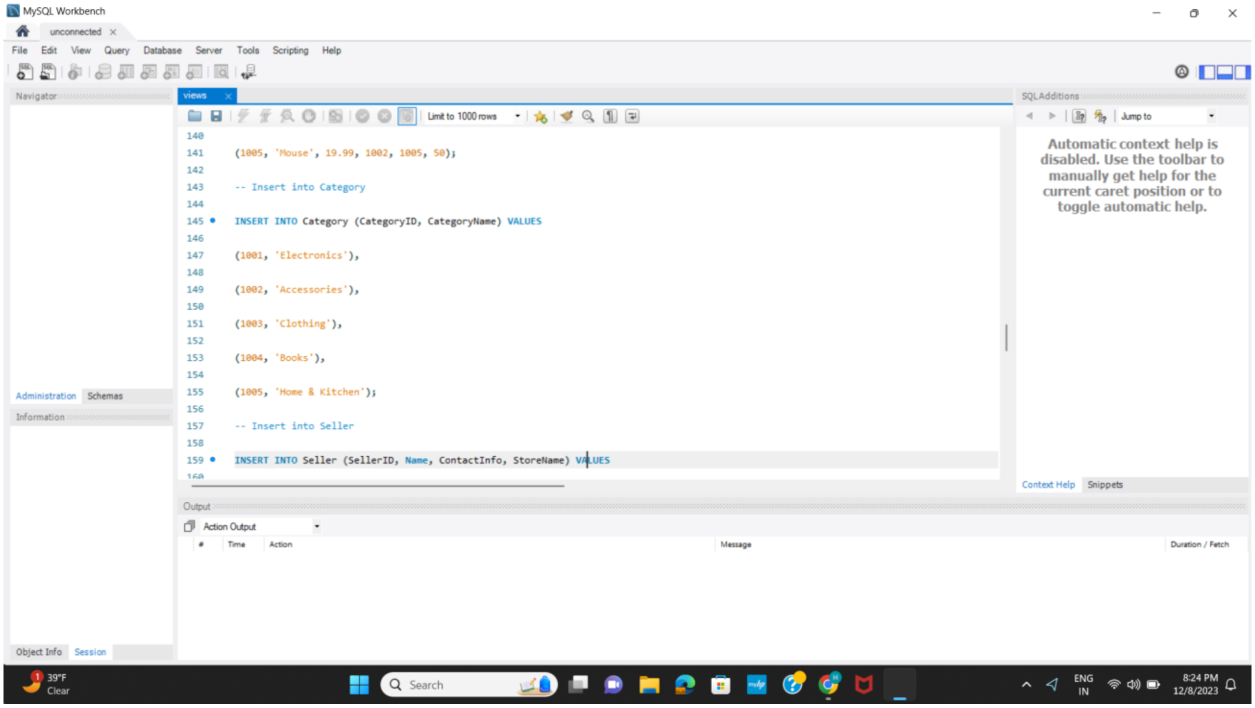
```

-- Insert into Shipment

INSERT INTO Shipment (ShipmentID, OrderID, ShipmentDate, TrackingNumber, DeliveryStatus) VALUES

(1001, 1001, '2023-10-01', 'TN001', 'Delivered'),

(1002, 1002, '2023-10-02', 'TN002', 'In Transit'),

(1003, 1003, '2023-10-03', 'TN003', 'Delivered'),

(1004, 1004, '2023-10-04', 'TN004', 'Pending'),

(1005, 1005, '2023-10-05', 'TN005', 'Delivered');

-- Insert into [Order]

INSERT INTO `Order` (OrderID, Date, CustomerID, Status) VALUES

(1001, '2023-10-01', 1001, 'Completed'),
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.



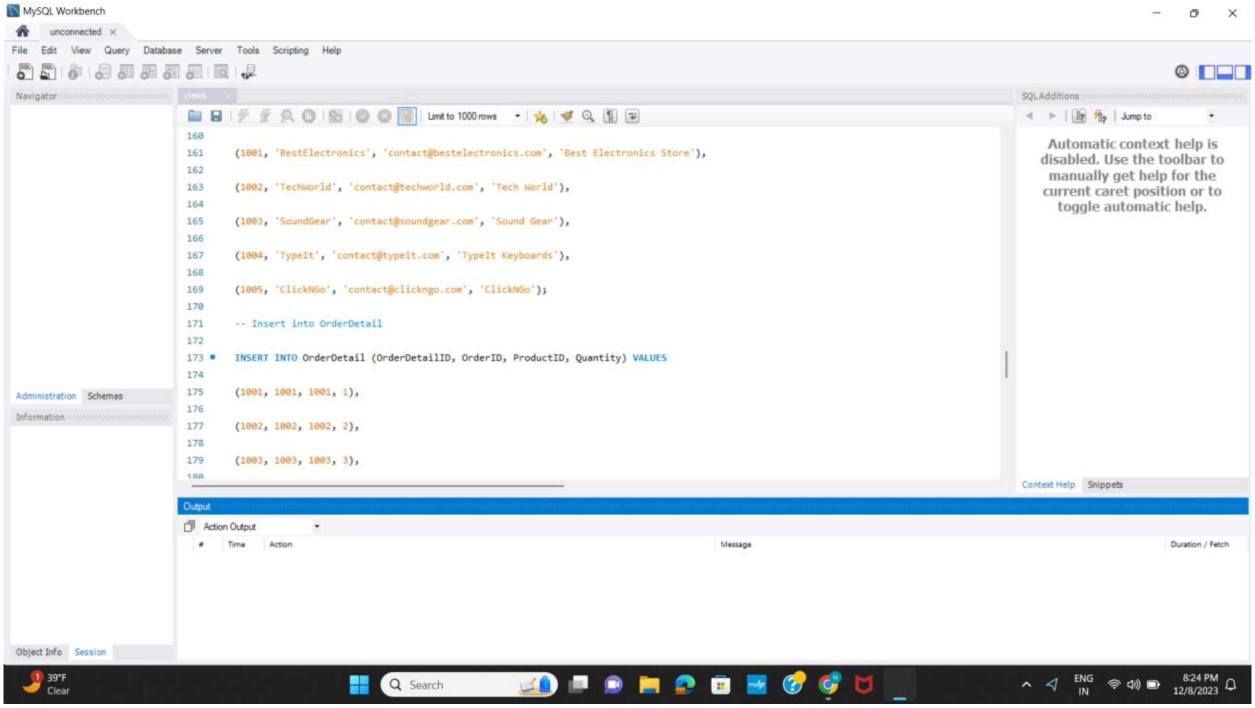
```

(1002, '2023-10-02', 1002, 'Pending'),

(1003, '2023-10-03', 1003, 'Cancelled'),

(1004, '2023-10-04', 1004, 'Processing'),

(1005, '2023-10-05', 1005, 'Completed');

-- Insert into Product

INSERT INTO Product (ProductID, Name, Price, CategoryID, SellerID, StockQuantity) VALUES

(1001, 'Laptop', 999.99, 1001, 1001, 10),

(1002, 'Phone', 499.99, 1001, 1002, 20),

(1003, 'Headphones', 49.99, 1002, 1003, 30),

(1004, 'Keyboard', 29.99, 1002, 1004, 40),
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.



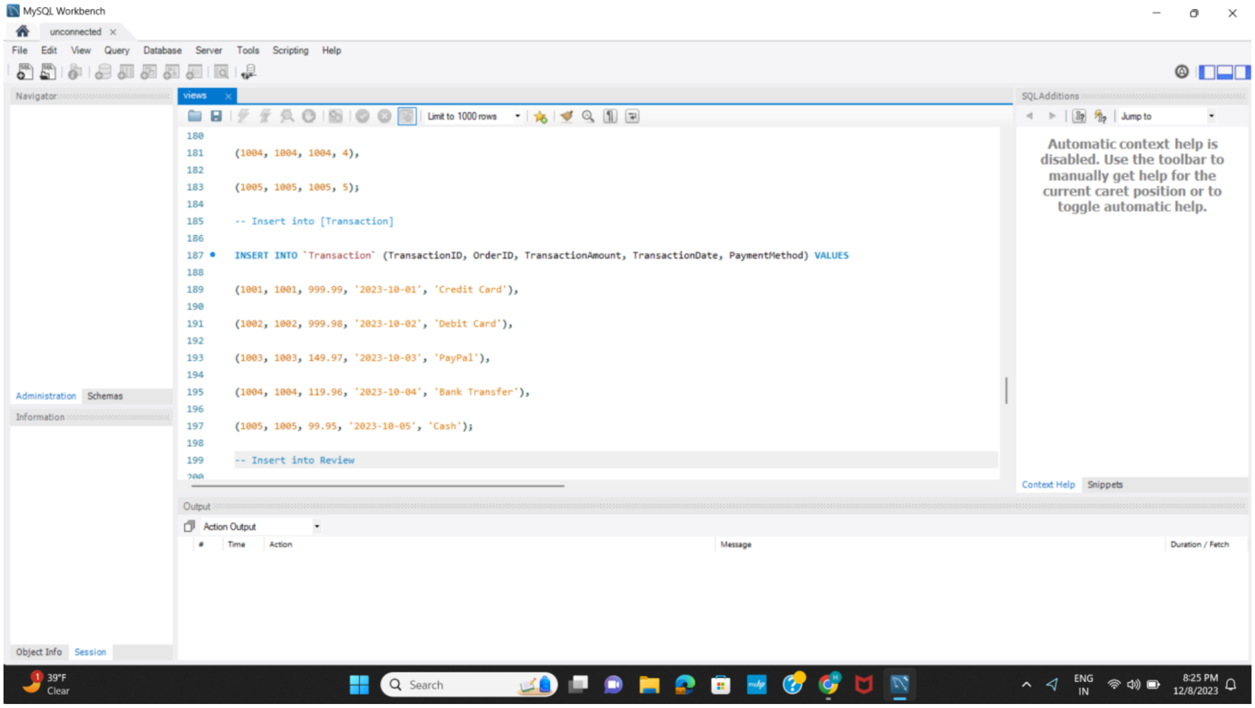
```
(1005, 'Mouse', 19.99, 1002, 1005, 50);

-- Insert into Category

INSERT INTO Category (CategoryID, CategoryName) VALUES

(1001, 'Electronics'),

(1002, 'Accessories'),

(1003, 'Clothing'),

(1004, 'Books'),

(1005, 'Home & Kitchen');

-- Insert into Seller

INSERT INTO Seller (SellerID, Name, ContactInfo, StoreName) VALUES
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.



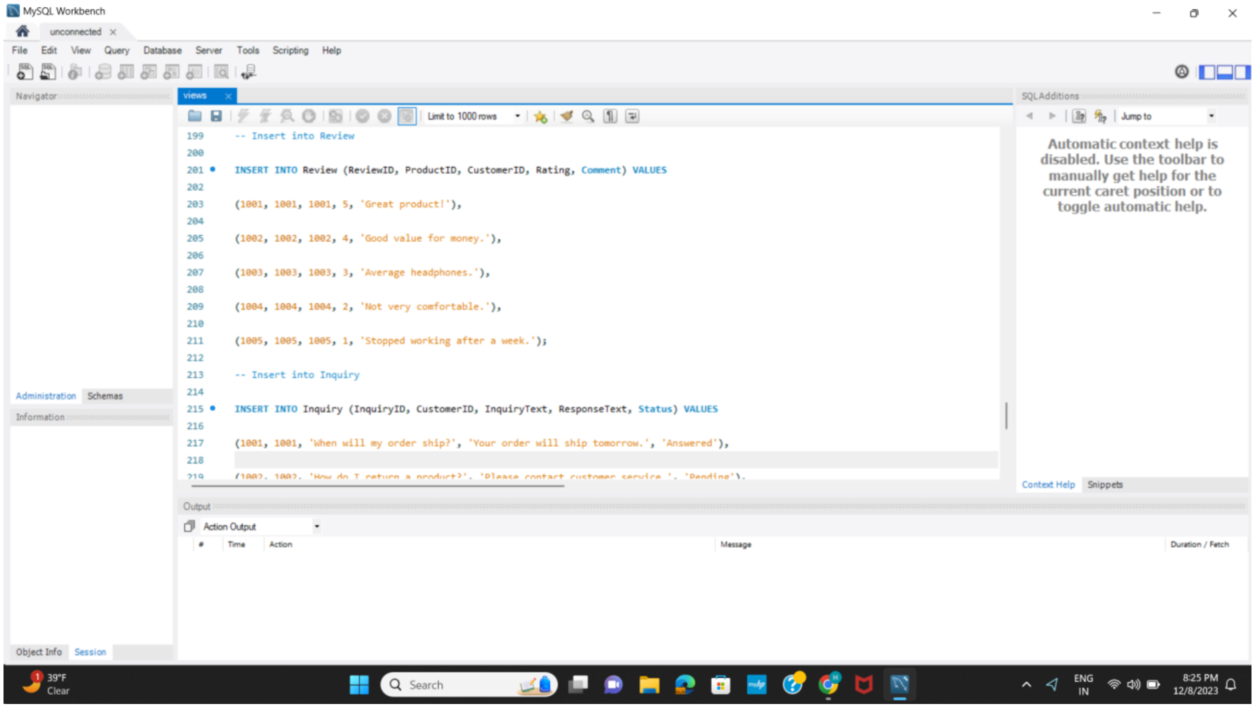
```
(1001, 'BestElectronics', 'contact@bestelectronics.com', 'Best Electronics Store'),

(1002, 'TechWorld', 'contact@techworld.com', 'Tech World'),

(1003, 'SoundGear', 'contact@soundgear.com', 'Sound Gear'),

(1004, 'TypeIt', 'contact@typeit.com', 'TypeIt Keyboards'),

(1005, 'ClickNGo', 'contact@clickngo.com', 'ClickNGo');

-- Insert into OrderDetail

INSERT INTO OrderDetail (OrderDetailID, OrderID, ProductID, Quantity) VALUES

(1001, 1001, 1001, 1),

(1002, 1002, 1002, 2),

(1003, 1003, 1003, 3),
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.



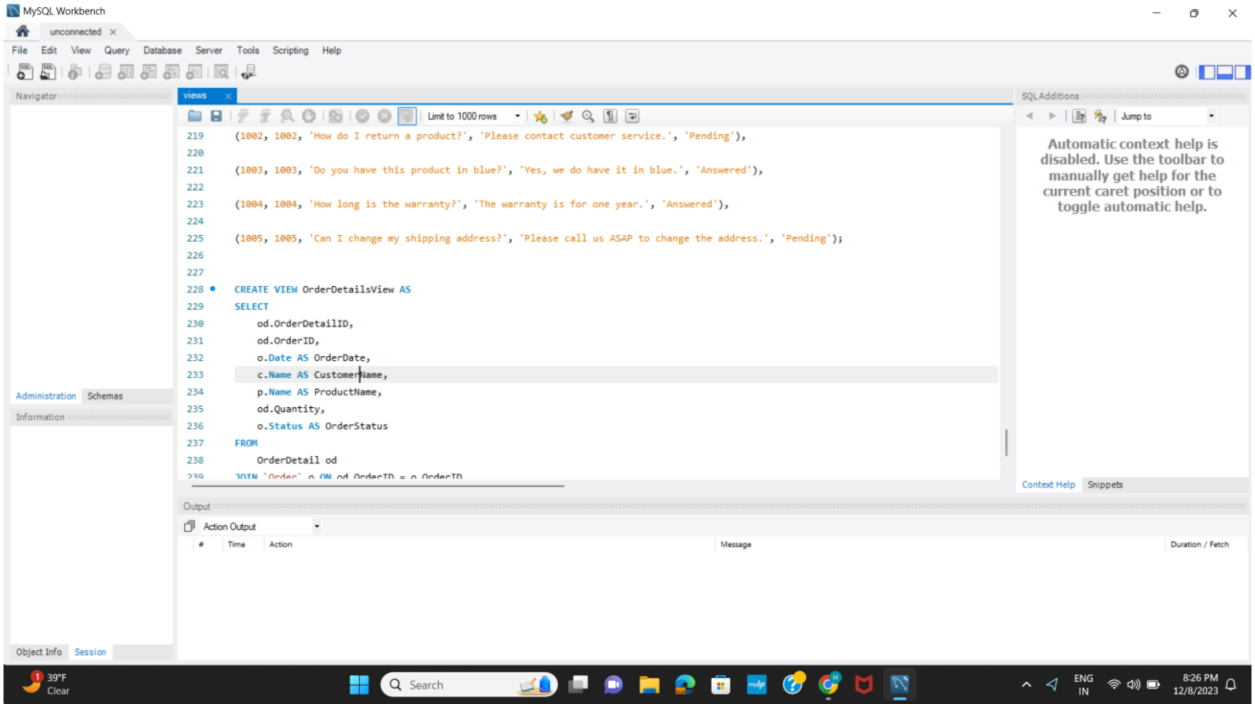
```
(1004, 1004, 1004, 4),

(1005, 1005, 1005, 5);

-- Insert into [Transaction]

INSERT INTO `Transaction` (TransactionID, OrderID, TransactionAmount, TransactionDate, PaymentMethod) VALUES

(1001, 1001, 999.99, '2023-10-01', 'Credit Card'),

(1002, 1002, 999.98, '2023-10-02', 'Debit Card'),

(1003, 1003, 149.97, '2023-10-03', 'PayPal'),

(1004, 1004, 119.96, '2023-10-04', 'Bank Transfer'),

(1005, 1005, 99.95, '2023-10-05', 'Cash');

-- Insert into Review
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.



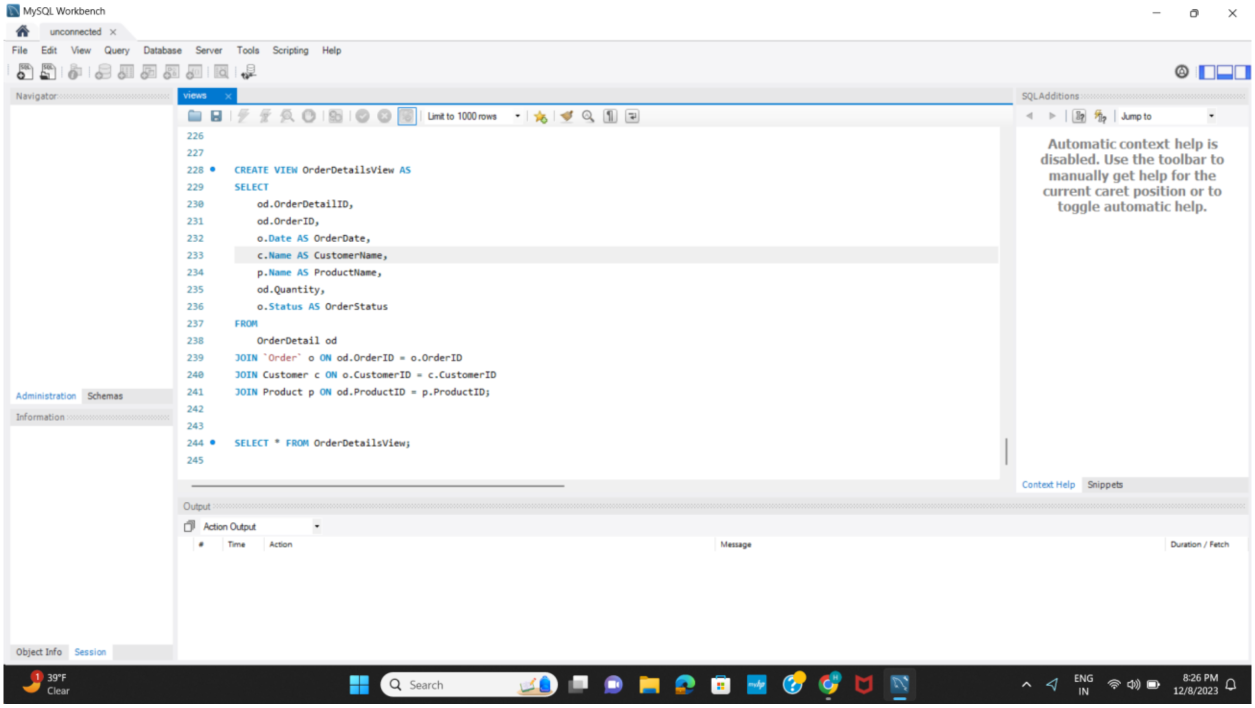
```
-- Insert into Review

INSERT INTO Review (ReviewID, ProductID, CustomerID, Rating, Comment) VALUES

(1001, 1001, 1001, 5, 'Great product!'),

(1002, 1002, 1002, 4, 'Good value for money.'),

(1003, 1003, 1003, 3, 'Average headphones.'),

(1004, 1004, 1004, 2, 'Not very comfortable.'),

(1005, 1005, 1005, 1, 'Stopped working after a week.');

-- Insert into Inquiry

INSERT INTO Inquiry (InquiryID, CustomerID, InquiryText, ResponseText, Status) VALUES

(1001, 1001, 'When will my order ship?', 'Your order will ship tomorrow.', 'Answered'),

(1002, 1002, 'How do I return a product?', 'Please contact customer service.', 'Pending'),
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.



```sql
(1002, 1002, 'How do I return a product?', 'Please contact customer service.', 'Pending'),

(1003, 1003, 'Do you have this product in blue?', 'Yes, we do have it in blue.', 'Answered'),

(1004, 1004, 'How long is the warranty?', 'The warranty is for one year.', 'Answered'),

(1005, 1005, 'Can I change my shipping address?', 'Please call us ASAP to change the address.', 'Pending');


CREATE VIEW OrderDetailsView AS
SELECT
    od.OrderDetailID,
    od.OrderID,
    o.Date AS OrderDate,
    c.Name AS CustomerName,
    p.Name AS ProductName,
    od.Quantity,
    o.Status AS OrderStatus
FROM
    OrderDetail od
JOIN `Order` o ON od.OrderID = o.OrderID
```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.



```sql


CREATE VIEW OrderDetailsView AS
SELECT
    od.OrderDetailID,
    od.OrderID,
    o.Date AS OrderDate,
    c.Name AS CustomerName,
    p.Name AS ProductName,
    od.Quantity,
    o.Status AS OrderStatus
FROM
    OrderDetail od
JOIN `Order` o ON od.OrderID = o.OrderID
JOIN Customer c ON o.CustomerID = c.CustomerID
JOIN Product p ON od.ProductID = p.ProductID;


SELECT * FROM OrderDetailsView;

```

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.