

Database Management System

LAB 06

Session: 2022 – 2026



Submitted by:
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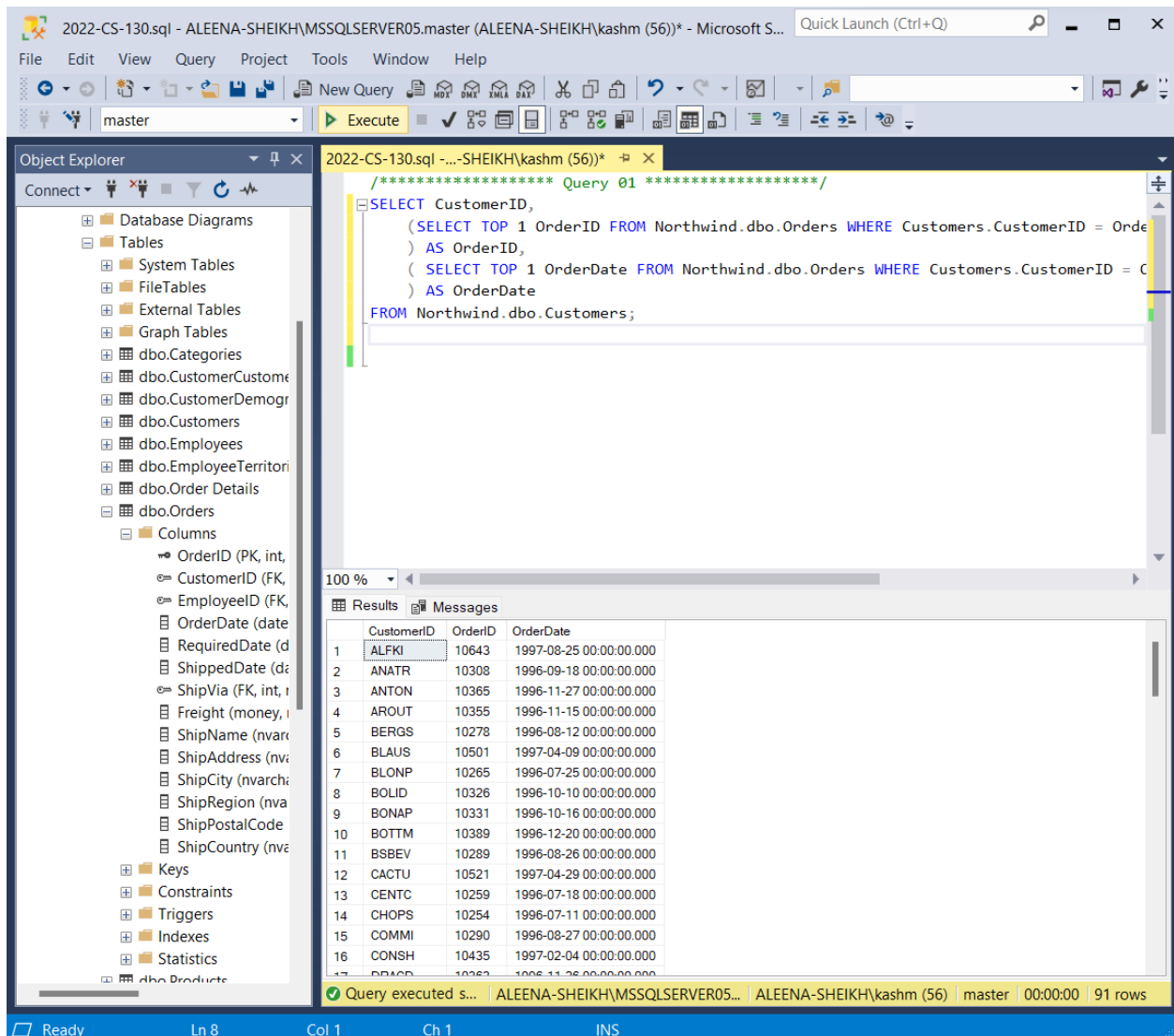
Home Task Queries

Question 01

Return customers and their orders, including customers who placed no orders (CustomerID, OrderID, OrderDate)

Query:

```
SELECT CustomerID,
       (SELECT TOP 1 OrderID FROM Northwind.dbo.Orders WHERE Customers.CustomerID = Orders.
        CustomerID) AS OrderID, ( SELECT TOP 1 OrderDate FROM Northwind.dbo.Orders WHERE
        Customers.CustomerID = Orders.CustomerID) AS OrderDate
FROM Northwind.dbo.Customers;
```



The screenshot shows the Microsoft SQL Server Enterprise Manager interface. The Object Explorer on the left displays the database structure, including tables and columns. The central pane shows the query text, and the bottom pane displays the results of the query execution.

Query Text:

```
SELECT CustomerID,
       (SELECT TOP 1 OrderID FROM Northwind.dbo.Orders WHERE Customers.CustomerID = Orders.
        CustomerID) AS OrderID, ( SELECT TOP 1 OrderDate FROM Northwind.dbo.Orders WHERE
        Customers.CustomerID = Orders.CustomerID) AS OrderDate
FROM Northwind.dbo.Customers;
```

Query Results:

	CustomerID	OrderID	OrderDate
1	ALFKI	10643	1997-08-25 00:00:00.000
2	ANATR	10308	1996-09-18 00:00:00.000
3	ANTON	10365	1996-11-27 00:00:00.000
4	AROUT	10355	1996-11-15 00:00:00.000
5	BERGS	10278	1996-08-12 00:00:00.000
6	BLAUS	10501	1997-04-09 00:00:00.000
7	BLONP	10265	1996-07-25 00:00:00.000
8	BOLID	10326	1996-10-10 00:00:00.000
9	BONAP	10331	1996-10-16 00:00:00.000
10	BOTTM	10389	1996-12-20 00:00:00.000
11	BSBEV	10289	1996-08-26 00:00:00.000
12	CACTU	10521	1997-04-29 00:00:00.000
13	CENTC	10259	1996-07-18 00:00:00.000
14	CHOPS	10254	1996-07-11 00:00:00.000
15	COMMI	10290	1996-08-27 00:00:00.000
16	CONSH	10435	1997-02-04 00:00:00.000
17	DRACD	10363	1996-11-26 00:00:00.000

Query executed successfully. Results: 91 rows.

Figure 1: Query 01

Question 02

Report only those customer IDs who never placed any order. (CustomerID, OrderID, OrderDate)

Query:

```
SELECT CustomerID,  
(SELECT TOP 1 OrderID FROM Northwind.dbo.Orders WHERE Customers.CustomerID = Orders.  
CustomerID) AS OrderID,( SELECT TOP 1 OrderDate FROM Northwind.dbo.Orders WHERE Customers.  
CustomerID = Orders.CustomerID) AS OrderDate  
FROM Northwind.dbo.Customers  
Where CustomerID NOT IN (SELECT DISTINCT CustomerID FROM Northwind.dbo.Orders);
```

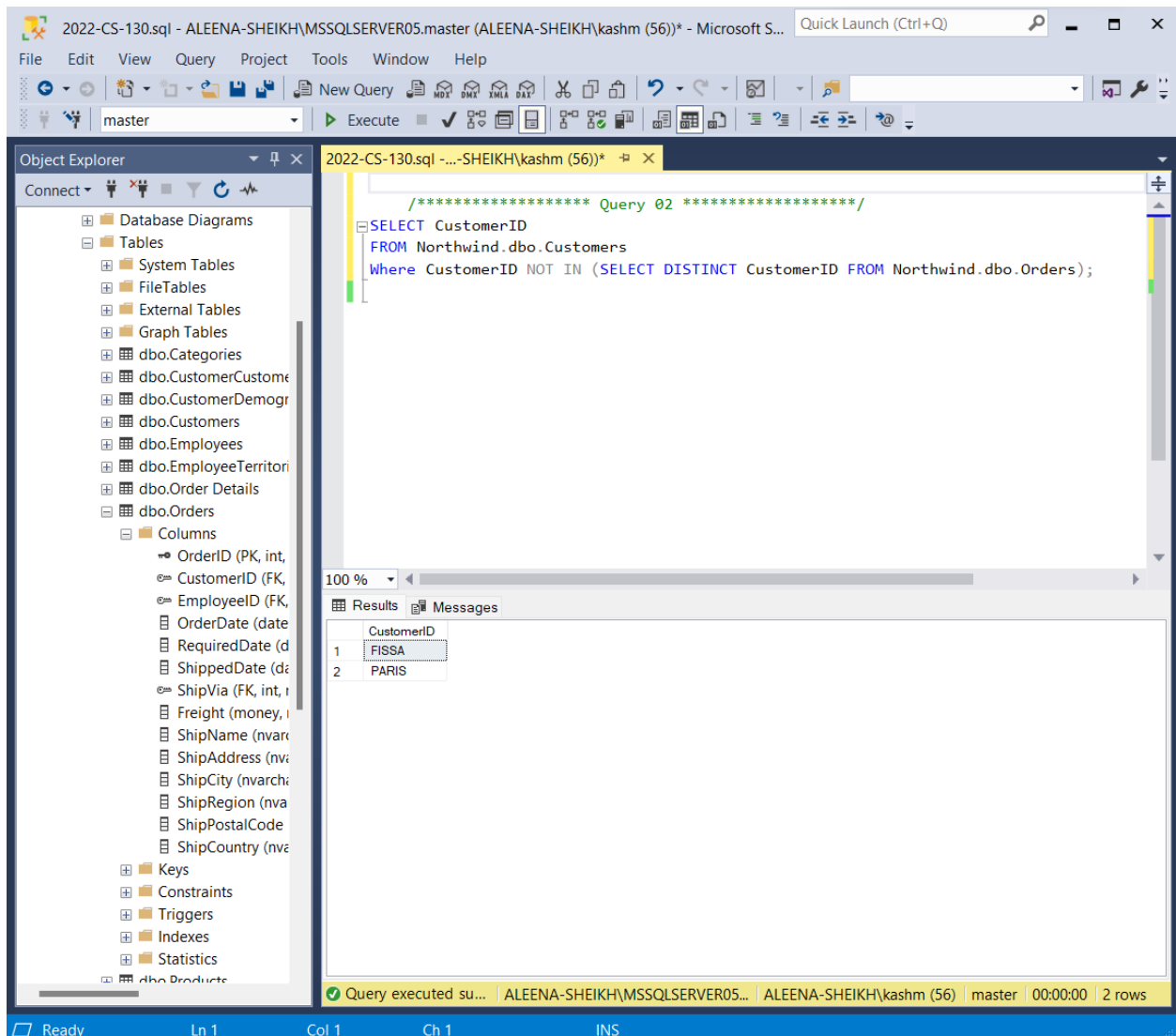


Figure 2: Query 02

Question 03

Report those customers who placed orders on July,1997. (CustomerID, OrderID, OrderDate)

Query:

```
SELECT CustomerID, OrderID, OrderDate
FROM Northwind.dbo.Orders
WHERE MONTH(OrderDate) = 7 AND YEAR(OrderDate) = 1997;
```

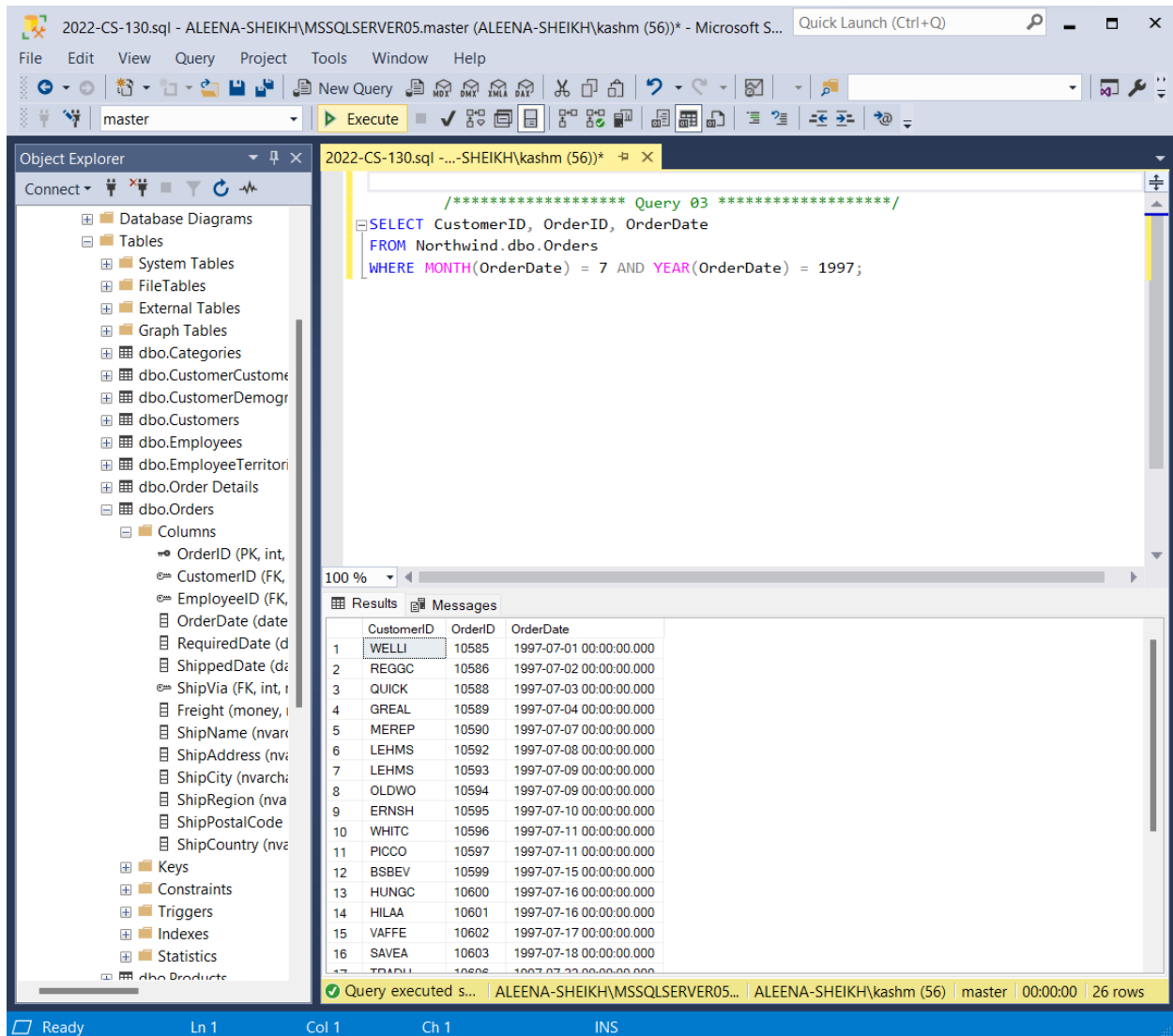


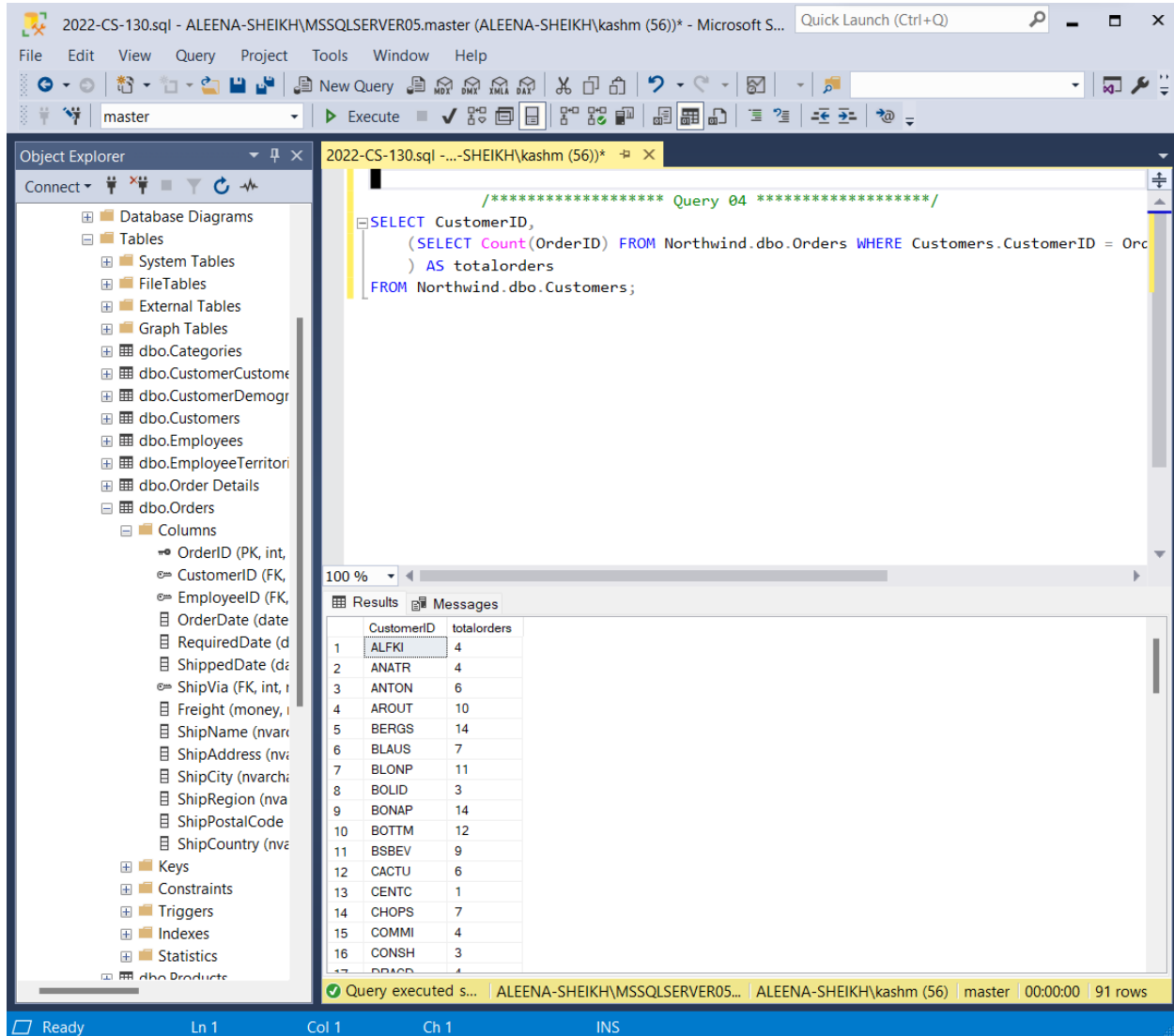
Figure 3: Query 03

Question 04

Report the total orders of each customer. (customerID, totalorders)

Query:

```
SELECT CustomerID,
       (SELECT Count(OrderID) FROM Northwind.dbo.Orders WHERE Customers.CustomerID = Orders.
        CustomerID) AS totalorders
FROM Northwind.dbo.Customers;
```



The screenshot shows the Microsoft SQL Server Enterprise Manager interface. The Object Explorer on the left displays the database structure, including tables like Customers and Orders. The central pane shows the SQL query being executed. The bottom pane displays the results of the query, which is a table with two columns: CustomerID and totalorders. The results are sorted by CustomerID.

CustomerID	totalorders
ALFKI	4
ANATR	4
ANTON	6
AROUT	10
BERGS	14
BLAUS	7
BLONP	11
BOLID	3
BONAP	14
BOTTM	12
BSBEV	9
CACTU	6
CENTC	1
CHOPS	7
COMMI	4
CONSH	3
DRACD	4

Query executed successfully. Results: 91 rows.

Figure 4: Query 04

Question 05

Write a query to generate a five copies of each employee. (EmployeeID, FirstName, LastName)

Query:

```
SELECT EmployeeID, FirstName, LastName
FROM Northwind.dbo.Employees,
     (SELECT 1 AS num UNION ALL SELECT 2 UNION ALL SELECT 3 UNION ALL SELECT 4 UNION ALL
      SELECT 5) AS copies
ORDER BY EmployeeID;
```

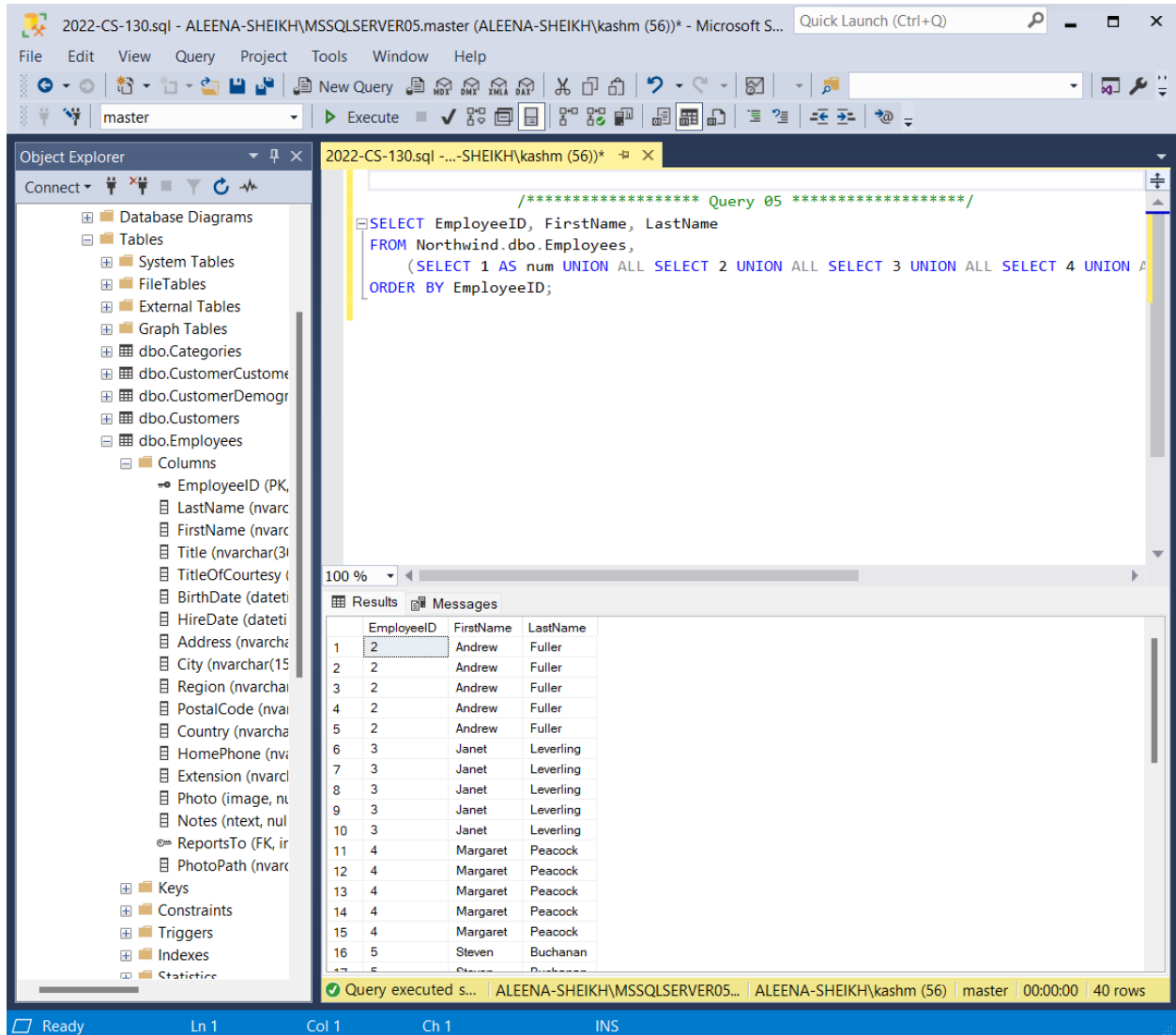


Figure 5: Query 05

Question 06

List all the products whose price is more than average price.

Query:

```
SELECT *
FROM Northwind.dbo.Products
WHERE UnitPrice > (SELECT AVG(UnitPrice) FROM Northwind.dbo.Products);
```

The screenshot shows the Microsoft SQL Server Enterprise Manager interface. The Object Explorer on the left displays the database structure, including tables, columns, keys, constraints, triggers, indexes, statistics, regions, shippers, suppliers, and territories. The main window shows the execution of a query in the 'master' database. The query is as follows:

```
SELECT *
FROM Northwind.dbo.Products
WHERE UnitPrice > (SELECT AVG(UnitPrice) FROM Northwind.dbo.Products);
```

The query results are displayed in a table with the following columns: ProductID, ProductName, SupplierID, CategoryID, QuantityPerUnit, UnitPrice, UnitsInStock, and UnitsOnOrder. The results show 15 products, with the first product, 'Uncle Bob's Organic Dried Pears', highlighted.

ProductID	ProductName	SupplierID	CategoryID	QuantityPerUnit	UnitPrice	UnitsInStock	UnitsOnOrder
7	Uncle Bob's Organic Dried Pears	3	7	12 - 1 lb pkgs.	30.00	15	0
8	Northwoods Cranberry Sauce	3	2	12 - 12 oz jars	40.00	6	0
9	Mishi Kobe Niku	4	6	18 - 500 g pkgs.	97.00	29	0
10	Ikura	4	8	12 - 200 ml jars	31.00	31	0
12	Queso Manchego La Pastora	5	4	10 - 500 g pkgs.	38.00	86	0
17	Alice Mutton	7	6	20 - 1 kg tins	39.00	0	0
18	Carnarvon Tigers	7	8	16 kg pkg.	62.50	42	0
20	Sir Rodney's Marmalade	8	3	30 gift boxes	81.00	40	0
26	Gumbär Gummibärchen	11	3	100 - 250 g bags	31.23	15	0
27	Schoggi Schokolade	11	3	100 - 100 g pieces	43.90	49	0
28	Rössle Sauerkraut	12	7	25 - 825 g cans	45.60	26	0
29	Thüringer Rostbratwurst	12	6	50 bags x 30 sausgs.	123.79	0	0
32	Mascarpone Fabioli	14	4	24 - 200 g pkgs.	32.00	9	40
38	Côte de Blaye	18	1	12 - 75 cl bottles	263.50	17	0
43	Ipoh Coffee	20	1	16 - 500 g tins	46.00	17	10

The status bar at the bottom indicates that the query was executed successfully, returning 25 rows.

Figure 6: Query 06

Question 07

Find the second highest price of product.

Query:

```
SELECT TOP 1 *  
FROM Northwind.dbo.Products  
WHERE UnitPrice < (SELECT MAX(UnitPrice) FROM Northwind.dbo.Products)  
ORDER BY UnitPrice DESC;
```

The screenshot shows the Microsoft SQL Server Enterprise Manager interface. The Object Explorer on the left displays the database structure, including tables, columns, keys, and constraints. The central pane shows the execution of a query in the 'master' database. The query is as follows:

```
SELECT TOP 1 *  
FROM Northwind.dbo.Products  
WHERE UnitPrice < (SELECT MAX(UnitPrice) FROM Northwind.dbo.Products)  
ORDER BY UnitPrice DESC;
```

The query results are displayed in a table with the following data:

	ProductID	ProductName	SupplierID	CategoryID	QuantityPerUnit	UnitPrice	UnitsInStock	UnitsOnOrder	ReorderLevel
1	29	Thüringer Rostbratwurst	12	6	50 bags x 30 sausgs.	123.79	0	0	0

The status bar at the bottom indicates that the query was executed successfully, returning 1 row.

Figure 7: Query 07

Question 08

Write a query that returns a row for each employee and day in the range 04-07-1996 through 04-08-1997. (EmployeeID, Date)

Query:

```
SELECT EmployeeID, HireDate
FROM Northwind.dbo.Employees
WHERE HireDate BETWEEN 04-07-1996 AND 04-08-1997;
```

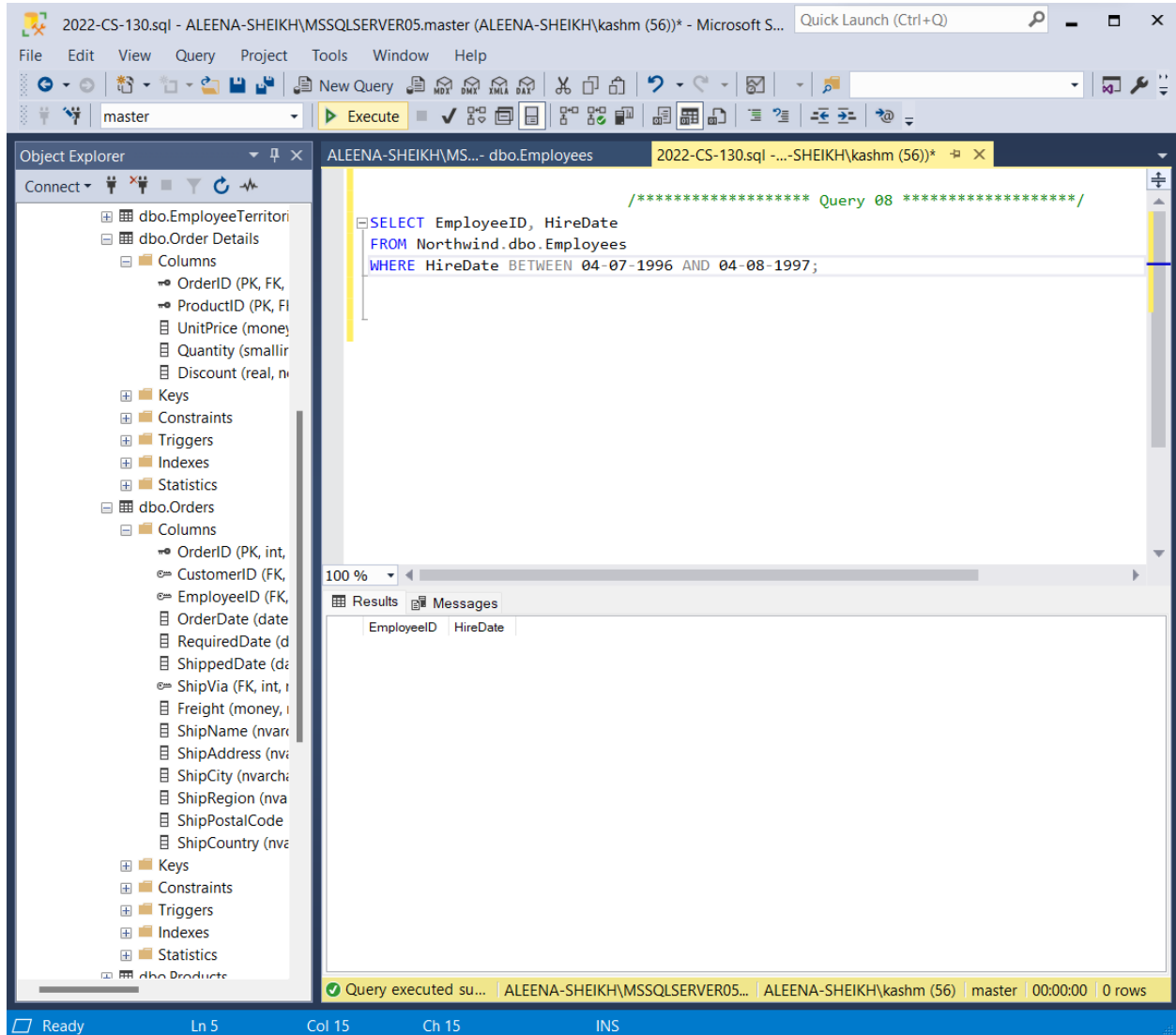


Figure 8: Query 08

Question 09

Return US customers, and for each customer return the total number of orders and total quantities. (CustomerID, Totalorders, totalquantity).

Query:

```
SELECT CustomerID,
(SELECT COUNT(OrderID) From Northwind.dbo.Orders WHERE CustomerID = c.CustomerID) AS
totalorders,(SELECT SUM(Quantity) From Northwind.dbo.[Order Details] WHERE OrderID IN
(SELECT OrderID FROM Northwind.dbo.Orders WHERE CustomerID = c.CustomerID)) AS
TotalQuantity
FROM Northwind.dbo.Customers c
WHERE Country = 'USA';
```

The screenshot shows the Microsoft SQL Server Enterprise Manager interface. The Object Explorer on the left displays the database structure, including tables like dbo.EmployeeTerritories, dbo.Order Details, and dbo.Orders. The central pane shows the execution of Query 09, which is a SQL query to retrieve US customers and their order statistics. The Results pane at the bottom displays the output of the query as a table with 13 rows.

	CustomerID	totalorders	TotalQuantity
1	GREAL	10	286
2	HUNGC	4	102
3	LAZYK	1	10
4	LETSS	3	150
5	LONEP	7	103
6	OLDWO	9	493
7	RATTC	13	909
8	SAVEA	25	3851
9	SPLIR	7	263
10	THEBI	3	44
11	THECR	3	59
12	TRAIH	3	89
13	WHITC	13	986

Query executed successfully. Status bar: Ready, Ln 1, Col 1, Ch 1, INS. Execution time: 00:00:00, 13 rows.

Figure 9: Query 09

Question 10

Write a query that returns all customers in the output, but matches them with their respective orders only if they were placed on July 04,1997. (CustomerID, CompanyName, OrderID, Orderdate)

Query:

```
SELECT CustomerID, CompanyName,
(SELECT TOP 1 OrderID FROM Northwind.dbo.Orders WHERE CustomerID = Customers.CustomerID)
AS OrderID,(SELECT TOP 1 OrderDate FROM Northwind.dbo.Orders WHERE DAY(OrderDate)= 4 AND
Month(OrderDate) = 7 AND YEAR(OrderDate) = 1997) AS OrderDate
FROM Northwind.dbo.Customers;
```

The screenshot shows the Microsoft SQL Server Enterprise Manager interface. The left pane displays the 'Object Explorer' with the 'Northwind' database expanded, showing tables like 'Customers', 'Orders', and 'Employees'. The right pane shows a query window with the following SQL query:

```
SELECT CustomerID, CompanyName,
(SELECT TOP 1 OrderID FROM Northwind.dbo.Orders WHERE CustomerID = Customers.CustomerID)
AS OrderID,(SELECT TOP 1 OrderDate FROM Northwind.dbo.Orders WHERE DAY(OrderDate)= 4 AND
Month(OrderDate) = 7 AND YEAR(OrderDate) = 1997) AS OrderDate
FROM Northwind.dbo.Customers;
```

The query is titled 'Query 10'. Below the query, the 'Results' pane shows the output of the query, which is a table with 5 columns: 'CustomerID', 'CompanyName', 'OrderID', and 'OrderDate'. The table contains 16 rows of data, all with an 'OrderDate' of '1997-07-04 00:00:00.000'.

CustomerID	CompanyName	OrderID	OrderDate
1	ALFKI	10643	1997-07-04 00:00:00.000
2	ANATR	10308	1997-07-04 00:00:00.000
3	ANTON	10365	1997-07-04 00:00:00.000
4	AROUT	10355	1997-07-04 00:00:00.000
5	BERGS	10278	1997-07-04 00:00:00.000
6	BLAUS	10501	1997-07-04 00:00:00.000
7	BLONP	10265	1997-07-04 00:00:00.000
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13	CENTC	10259	1997-07-04 00:00:00.000
14	CHOPS	10254	1997-07-04 00:00:00.000
15	COMMI	10290	1997-07-04 00:00:00.000
16	CONSH	10435	1997-07-04 00:00:00.000

The status bar at the bottom indicates 'Query executed successfully' and shows '91 rows'.

Figure 10: Query 10

Question 11

Are there any employees who are older than their managers?

Query:

```
SELECT EmployeeID,FirstName,LastName,BirthDate AS EmployeeBirthDate,  
       (SELECT BirthDate FROM Northwind.dbo.Employees WHERE EmployeeID = ReportsTo) AS  
       ManagerBirthDate  
FROM Northwind.dbo.Employees  
WHERE BirthDate > (SELECT BirthDate FROM Northwind.dbo.Employees WHERE EmployeeID =  
ReportsTo);
```

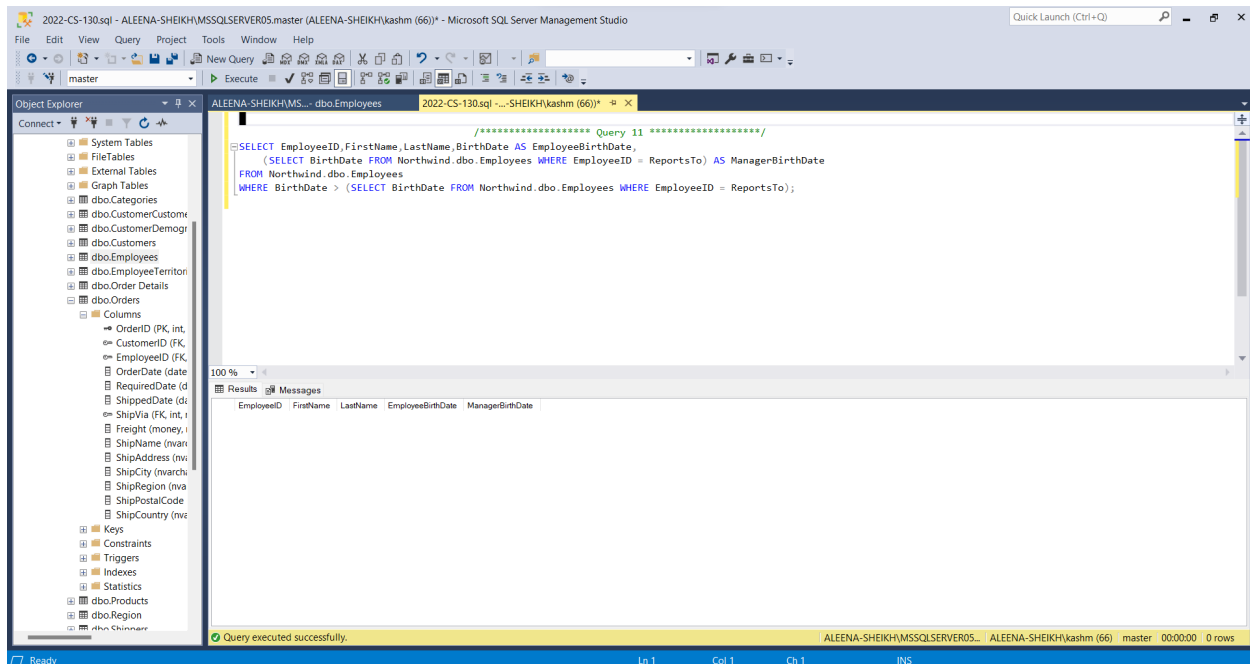


Figure 11: Query 11

Question 12

List that names of those employees and their ages. (EmployeeName, Age, Manager Age)

Query:

```
SELECT E.FirstName + ' ' + E.LastName AS EmployeeName, DATEDIFF(YEAR, E.BirthDate,
GETDATE()) AS Age, (SELECT DATEDIFF(YEAR, BirthDate, GETDATE()) FROM Northwind.dbo.Employees
WHERE EmployeeID = E.ReportsTo) AS ManagerAge
FROM Northwind.dbo.Employees E
WHERE E.BirthDate > (SELECT BirthDate FROM Northwind.dbo.Employees WHERE EmployeeID =
E.ReportsTo);
```

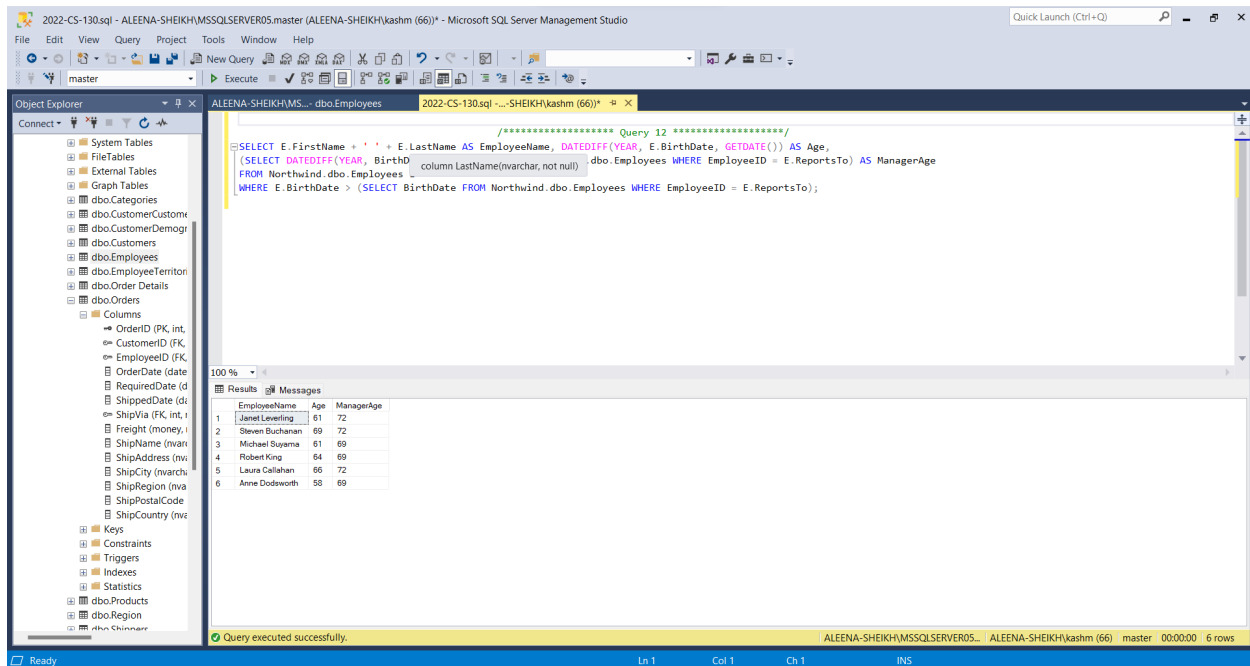


Figure 12: Query 12

Question 13

List the names of products which were ordered on 8th August 1997. (ProductName, OrderDate)

Query:

```
SELECT ProductName, OrderDate
FROM Northwind.dbo.Products, Northwind.dbo.Orders
WHERE ProductID IN (SELECT ProductID FROM Northwind.dbo.[Order Details] WHERE OrderID IN
(SELECT OrderID FROM Northwind.dbo.Orders WHERE CONVERT(DATE, OrderDate) = '1997-08-08'));
```

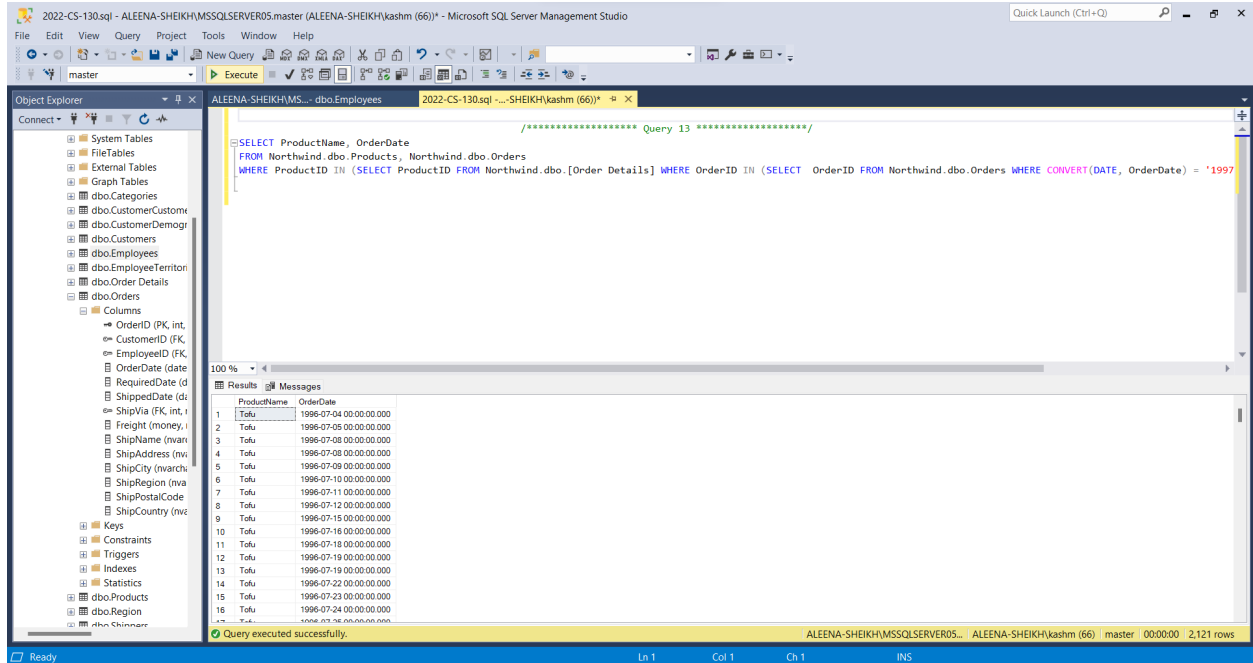


Figure 13: Query 13

Question 14

List the addresses, cities, countries of all orders which were serviced by Anne and were shipped late. (Address, City, Country)

Query:

```
SELECT ShipAddress AS Address, ShipCity AS City, ShipCountry AS Country
FROM Northwind.dbo.Orders
WHERE EmployeeID = (SELECT EmployeeID FROM Northwind.dbo.Employees WHERE FirstName = 'Anne')
AND ShippedDate > RequiredDate;
```

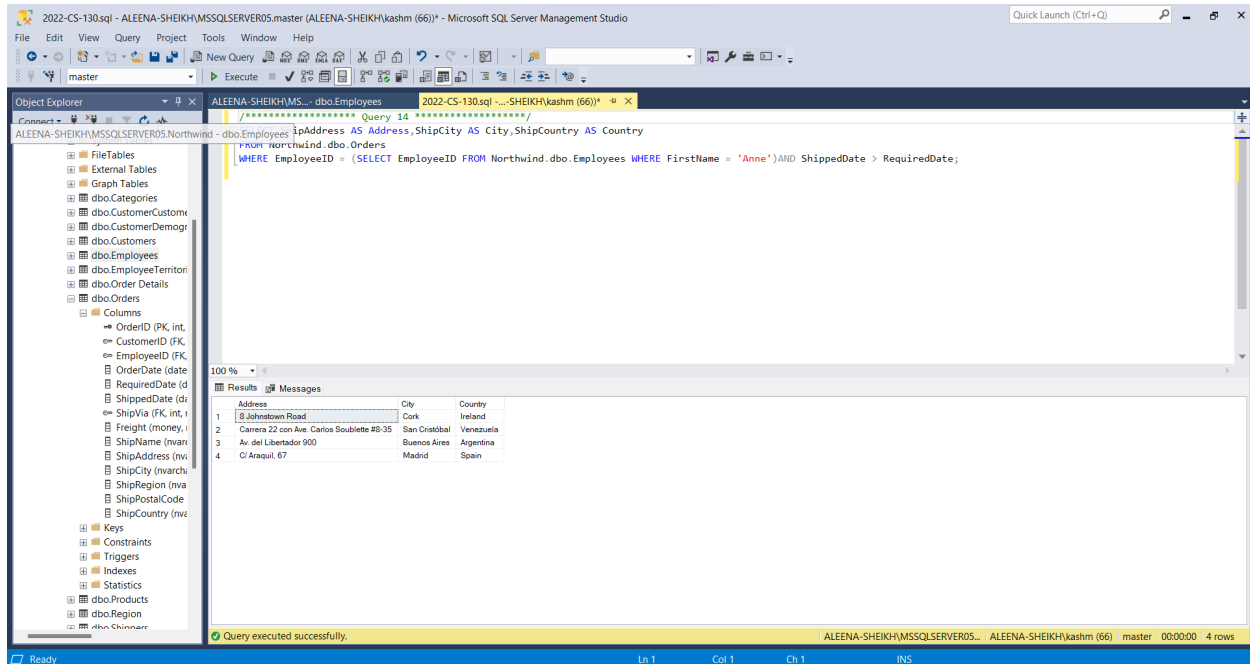


Figure 14: Query 14

Question 15

List all countries to which beverages have been shipped. (Country)

Query:

```
SELECT DISTINCT ShipCountry AS Country
FROM Northwind.dbo.Orders
WHERE OrderID IN (SELECT OrderID FROM Northwind.dbo.[Order Details] WHERE ProductID IN
(SELECT ProductID FROM Northwind.dbo.Products WHERE CategoryID = 1 ));
```

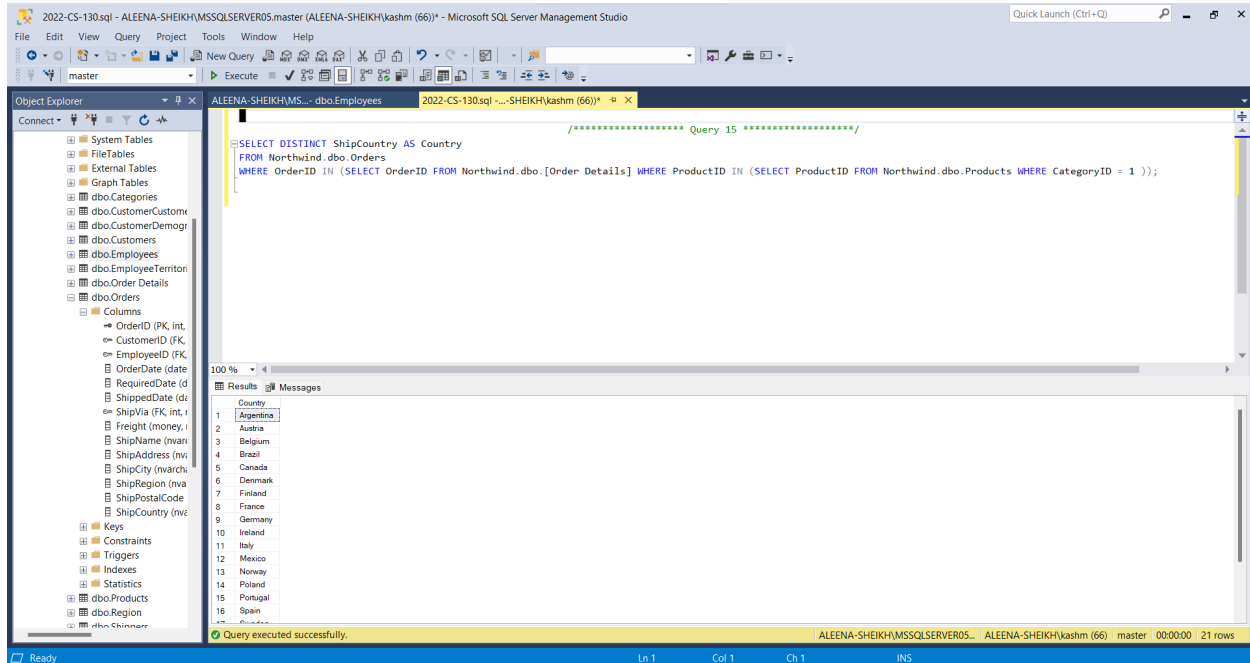


Figure 15: Query 15