

LAB 06



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CS-262L Database Systems

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Contents

1	Question 1	5
	1.1 Question Statement	5
	1.2 Query:	5
2	Question 2	5
	2.1 Question Statement	5
	2.2 Query:	5
3	Question 3	6
	3.1 Question Statement	6
	3.2 Query:	7
4	Question 4	8
	4.1 Question Statement	8
	4.2 Query:	8
5	Question 5	9
	5.1 Question Statement	9
	5.2 Query:	9
6	Question 6	10
	6.1 Question Statement	10
	6.2 Query:	10
7	Question 7	10
	7.1 Question Statement	10
	7.2 Query:	10
8	Question 8	11
	8.1 Question Statement	11
	8.2 Query:	11
9	Question 9	12
	9.1 Question Statement	12
	9.2 Query:	12
10	Question 10	13
	10.1 Question Statement	13
	10.2 Query:	13
11	Question 11	14
	11.1 Question Statement	14

11.2 Answer	14
12 Question 12	14
12.1 Question Statement	14
12.2 Query:	15
13 Question 13	16
13.1 Question Statement	16
13.2 Query:	16
14 Question 14	17
14.1 Question Statement	17
14.2 Query:	17
15 Question 15	18
15.1 Question Statement	18
15.2 Query:	18

List of Figures

1	Result of the query 1	5
2	Result of the query 2	6
3	Result of the query 3	7
4	Result of the query 4	8
5	Result of the query 5	9
6	Result of the query 6	10
7	Result of the query 7	11
8	Result of the query 8	12
9	Result of the query 9	13
10	Result of the query 10	14
11	Result of the query 12	15
12	Result of the query 13	16
13	Result of the query 14	17
14	Result of the query 15	18

1 Question 1

1.1 Question Statement

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

1.2 Query:

```
SELECT c.CustomerID , o.OrderID , o.OrderDate
FROM (SELECT CustomerID
FROM [Northwind].[dbo].[Customers]) c
LEFT JOIN
    [Northwind].[dbo].[Orders] o
ON c.CustomerID = o.CustomerID;
```

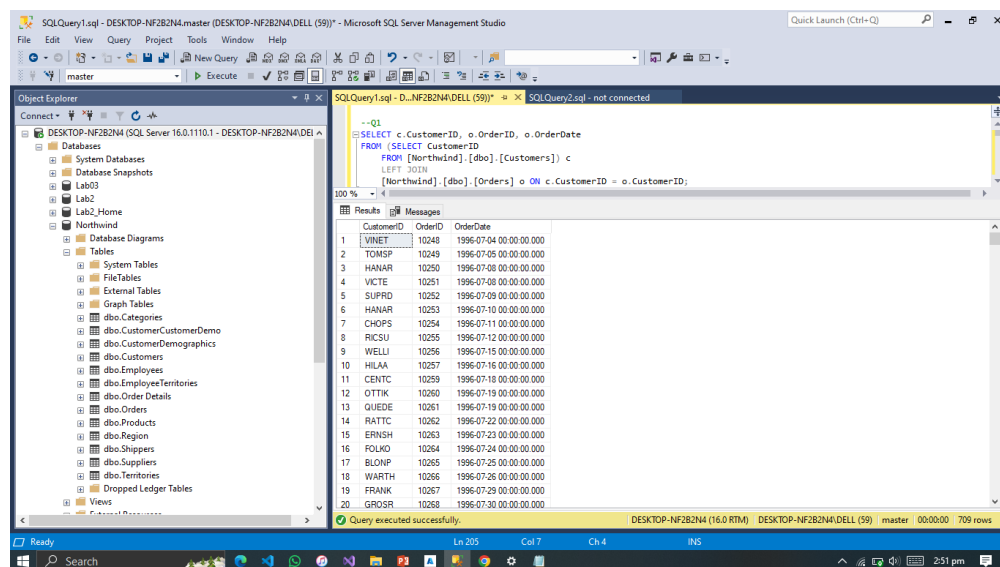


Figure 1: Result of the query 1

2 Question 2

2.1 Question Statement

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

2.2 Query:

SELECT

```
c.CustomerID ,
o.OrderID ,
o.OrderDate
```

FROM

```
[Northwind].[dbo].[Customers] c
```

LEFT JOIN

```
(
```

SELECT

```
CustomerID ,
OrderID ,
OrderDate
```

FROM

```
[Northwind].[dbo].[Orders]
```

```
) o ON c.CustomerID = o.CustomerID
```

WHERE

```
o.OrderID IS NULL;
```

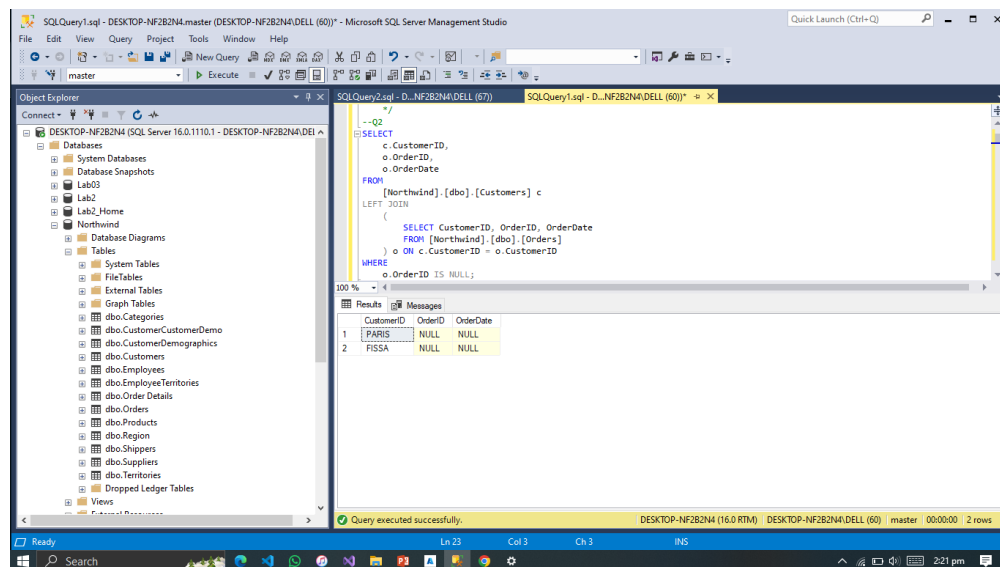


Figure 2: Result of the query 2

3 Question 3

3.1 Question Statement

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

3.2 Query:

SELECT

```
c.CustomerID ,
o.OrderID ,
o.OrderDate
```

FROM

```
[Northwind].[dbo].[Customers] c
```

JOIN

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

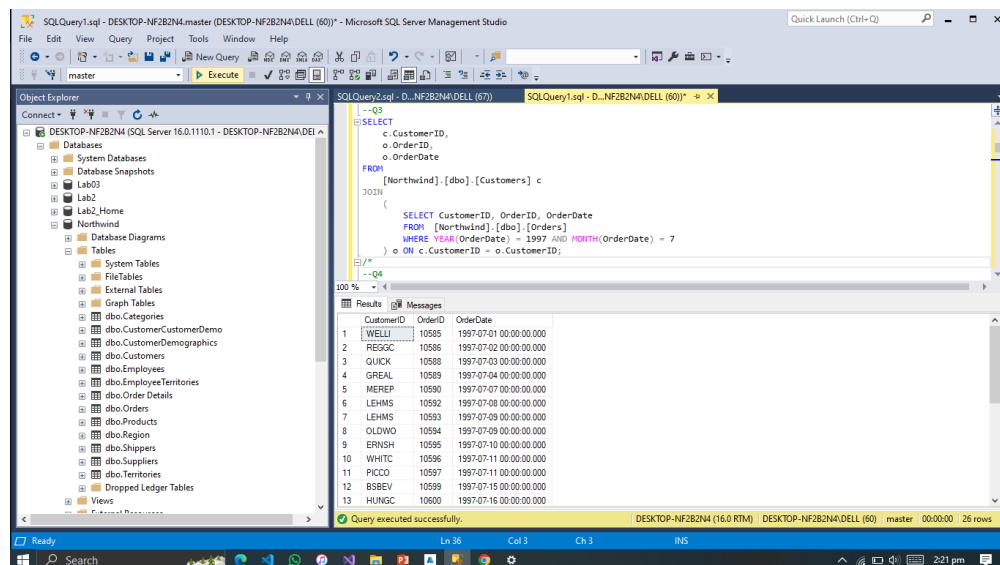


Figure 3: Result of the query 3

4 Question 4

4.1 Question Statement

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

4.2 Query:

```

SELECT
    c.CustomerID ,
    CASE
        WHEN o.totalorders IS NULL THEN 0
        ELSE o.totalorders
    END AS totalorders
FROM
    [Northwind].[dbo].Customers c
LEFT JOIN
    (
        SELECT
            CustomerID ,
            COUNT(OrderID) AS totalorders
        FROM
            [Northwind].[dbo].Orders
        GROUP BY
            CustomerID
    ) o ON c.CustomerID = o.CustomerID ;

```

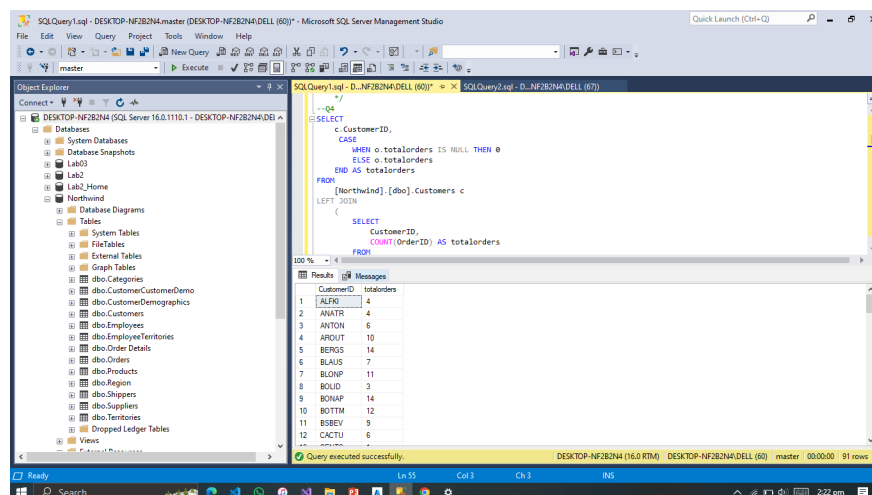


Figure 4: Result of the query 4

5 Question 5

5.1 Question Statement

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

5.2 Query:

```

SELECT
    E.EmployeeID ,
    E.FirstName ,
    E.LastName
FROM
    Northwind.dbo.Employees AS E
CROSS JOIN
    (
        SELECT TOP 5 ProductID
        FROM Northwind.dbo.Products
    ) AS N
ORDER BY
    E.EmployeeID ASC;

```

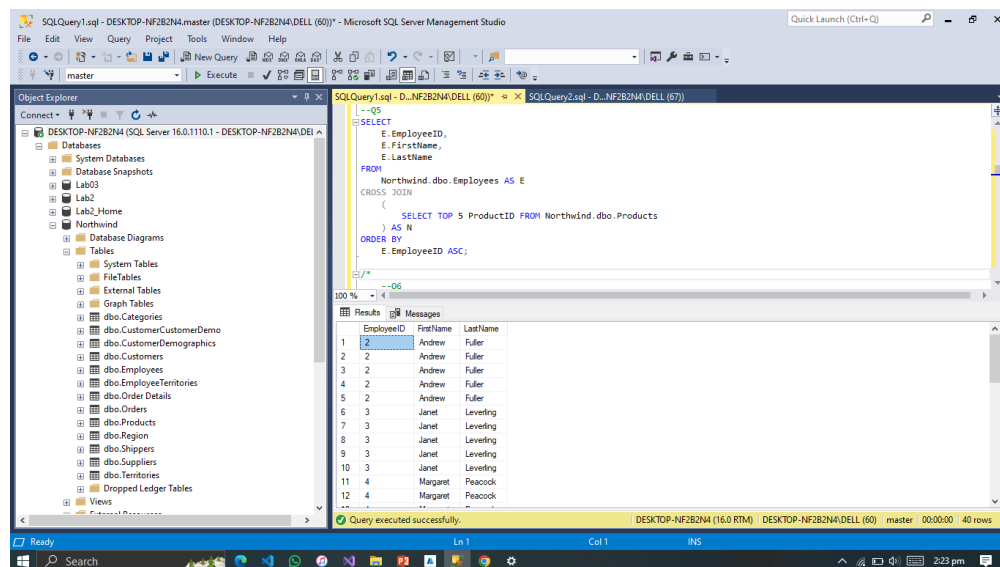


Figure 5: Result of the query 5

6 Question 6

6.1 Question Statement

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

6.2 Query:

```

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

```

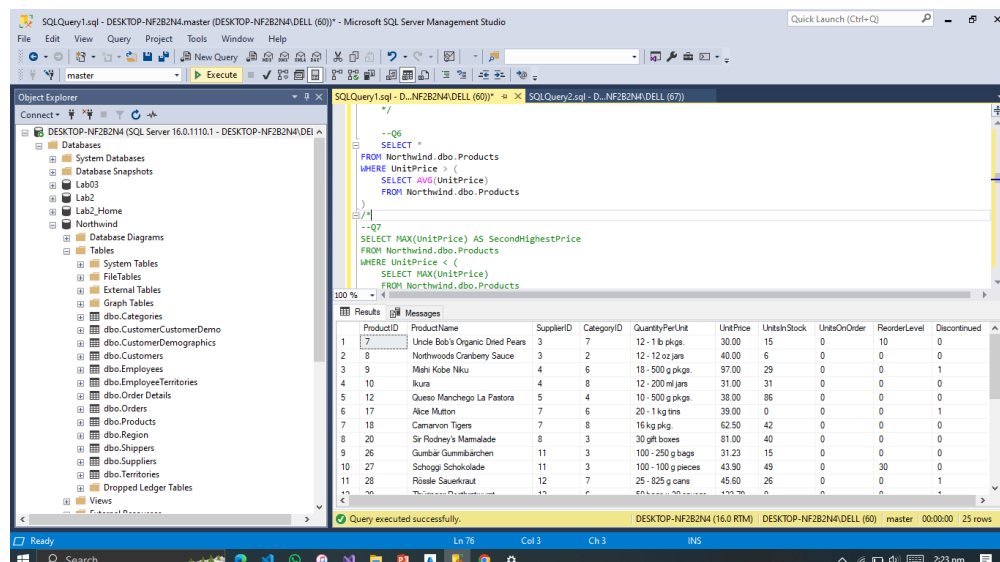


Figure 6: Result of the query 6

7 Question 7

7.1 Question Statement

Find the second highest price of product.

7.2 Query:

```

SELECT MAX(UnitPrice) AS SecondHighestPrice
FROM Northwind.dbo.Products

```

```

WHERE UnitPrice < (
    SELECT MAX(UnitPrice)
    FROM Northwind.dbo.Products
)

```

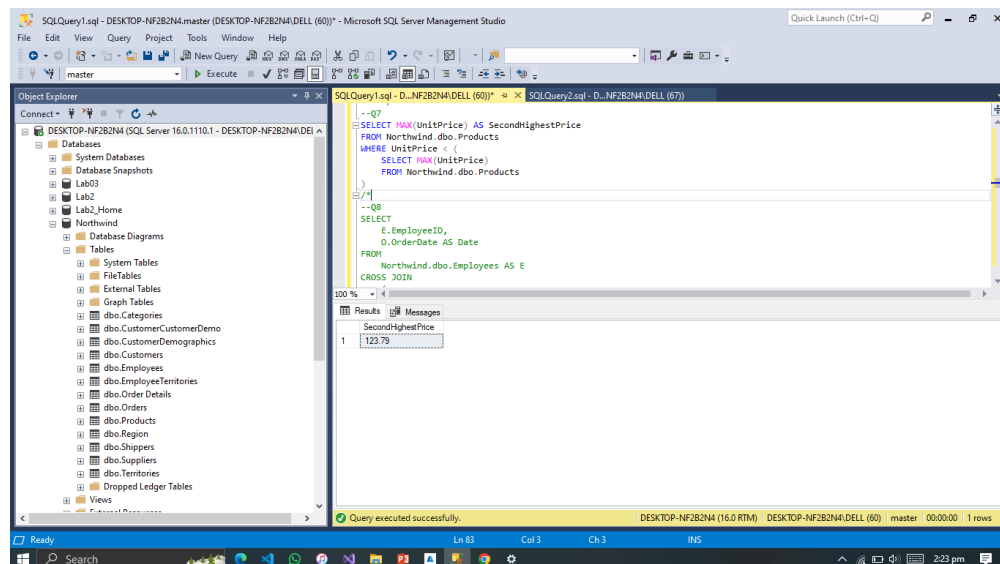


Figure 7: Result of the query 7

8 Question 8

8.1 Question Statement

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

8.2 Query:

```

SELECT
    E.EmployeeID ,
    O.OrderDate AS Date
FROM
    Northwind.dbo.Employees AS E
CROSS JOIN
    (
        SELECT OrderDate
        FROM Northwind.dbo.Orders
        WHERE OrderDate <= '1997-08-04 00:00:00.000'
        AND OrderDate >= '1996-07-04 00:00:00.000'
    )

```

```

) AS O
ORDER BY
    E.EmployeeID,
    O.OrderDate;

```

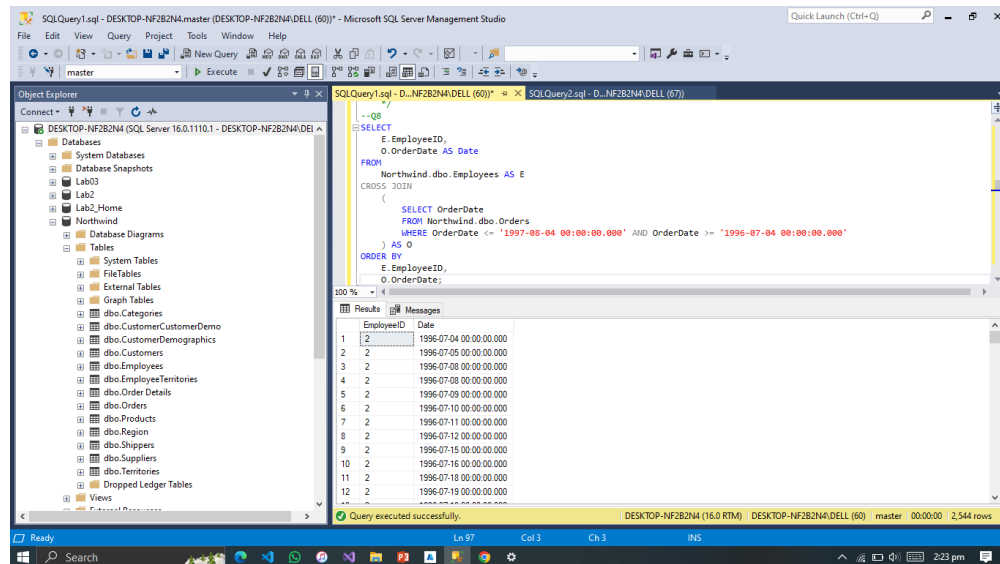


Figure 8: Result of the query 8

9 Question 9

9.1 Question Statement

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

9.2 Query:

```

SELECT
    c.CustomerID,
    (
        SELECT COUNT(o.OrderID)
        FROM Northwind.dbo.Orders o
        WHERE o.CustomerID = c.CustomerID
    ) AS TotalOrders,
    (
        SELECT SUM(od.Quantity)
        FROM Northwind.dbo.Orders o
        JOIN Northwind.dbo.[Order Details] od

```

```

        ON o.OrderID = od.OrderID
        WHERE o.CustomerID = c.CustomerID
    ) AS TotalQuantity
FROM
    Northwind.dbo.Customers c
WHERE
    c.Country = 'USA';

```

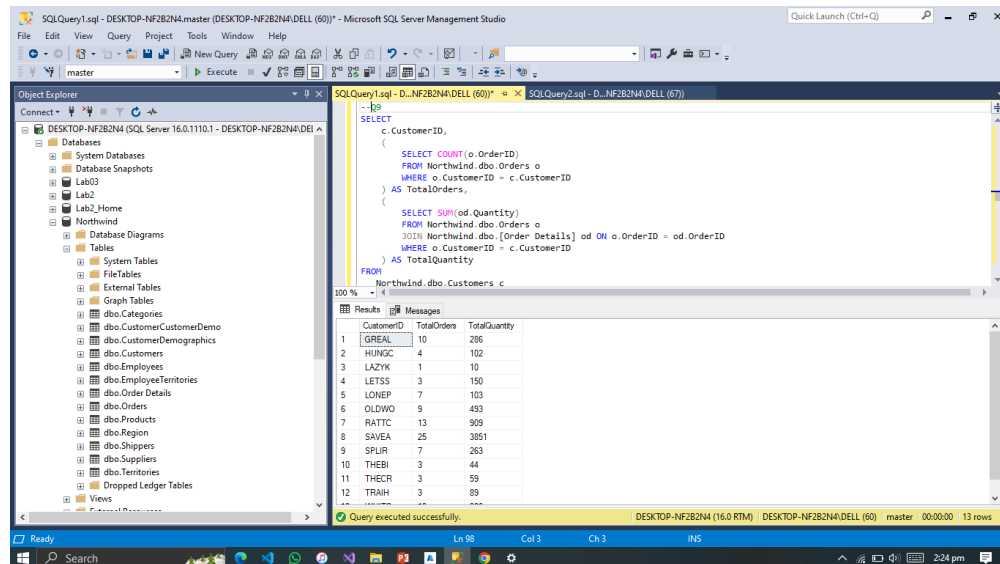


Figure 9: Result of the query 9

10 Question 10

10.1 Question Statement

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)

10.2 Query:

```

SELECT
    c.CustomerID ,
    c.CompanyName ,
    o.OrderID ,
    o.OrderDate
FROM
    Northwind.dbo.Customers c

```

LEFT JOIN

```
(
    SELECT CustomerID , OrderID , OrderDate
    FROM Northwind.dbo.Orders
    WHERE CONVERT(date , OrderDate) = '1997-07-04'
) AS o ON c.CustomerID = o.CustomerID;
```

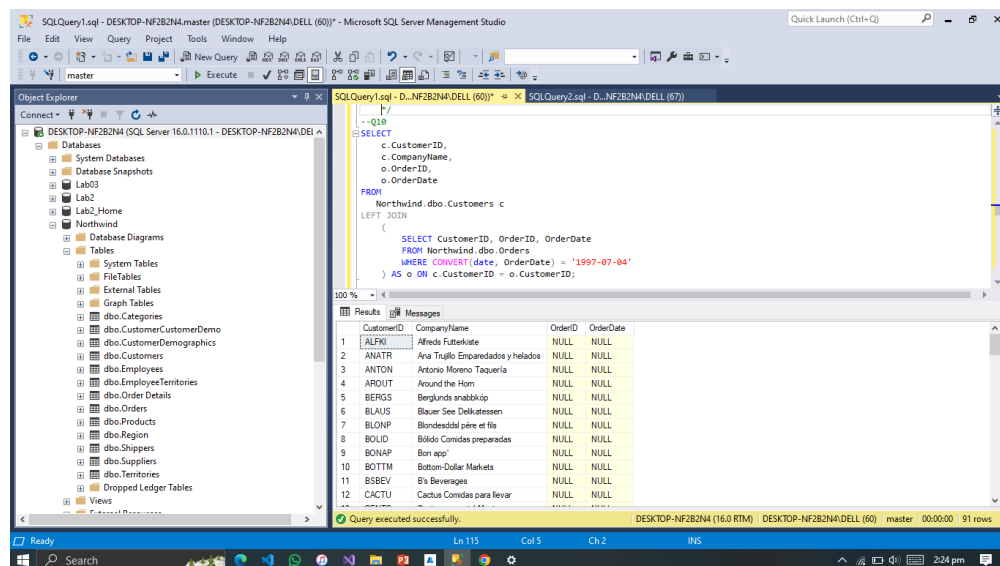


Figure 10: Result of the query 10

11 Question 11

11.1 Question Statement

Are there any employees who are older than their managers?

11.2 Answer

Yes.

12 Question 12

12.1 Question Statement

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

12.2 Query:

```

SELECT
    EmployeeName ,
    EmployeeAge ,
    ManagerAge
FROM (
    SELECT
        e.FirstName + ' ' + e.LastName AS EmployeeName ,
        DATEDIFF(hour , e.BirthDate , GETDATE()) / 8766
        AS EmployeeAge ,
        (
            SELECT DATEDIFF(hour , e1.BirthDate , GETDATE()) / 8766
            FROM Northwind.dbo.Employees AS e1
            WHERE e.ReportsTo = e1.EmployeeID
        ) AS ManagerAge
    FROM
        Northwind.dbo.Employees AS e
) AS Subquery
WHERE
    EmployeeAge > 60
    AND ManagerAge >= 70
    AND EmployeeAge < ManagerAge ;

```

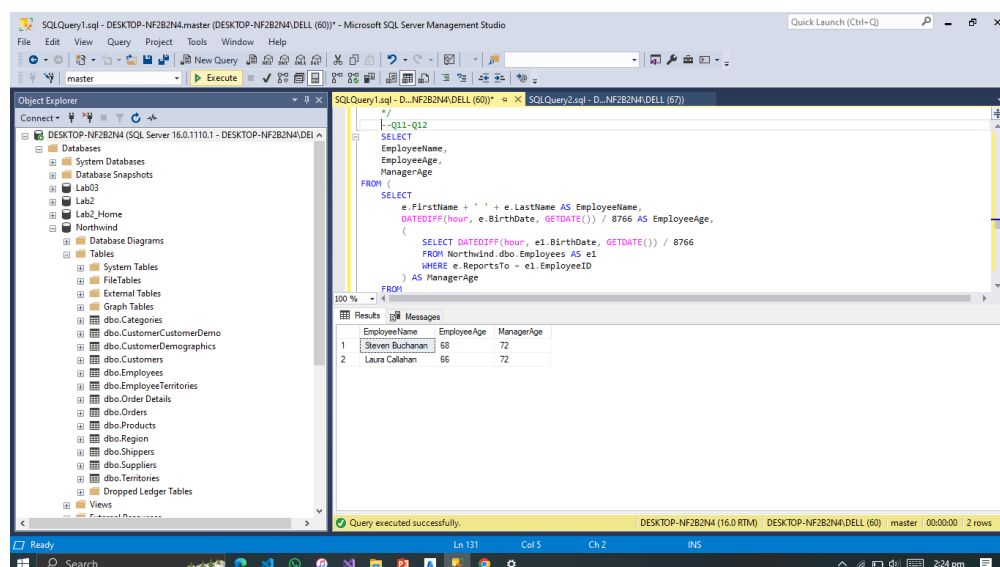


Figure 11: Result of the query 12

13 Question 13

13.1 Question Statement

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

13.2 Query:

```

SELECT
    p.ProductName ,
    o.OrderDate
FROM
    Northwind.dbo.Products p
JOIN
    (
        SELECT OrderID , ProductID
        FROM Northwind.dbo.[Order Details]
        WHERE OrderID IN (
            SELECT OrderID
            FROM Northwind.dbo.Orders
            WHERE CONVERT(date , OrderDate) = '1997-08-08'
        )
    ) od ON p.ProductID = od.ProductID
JOIN
    Northwind.dbo.Orders o ON od.OrderID = o.OrderID ;

```

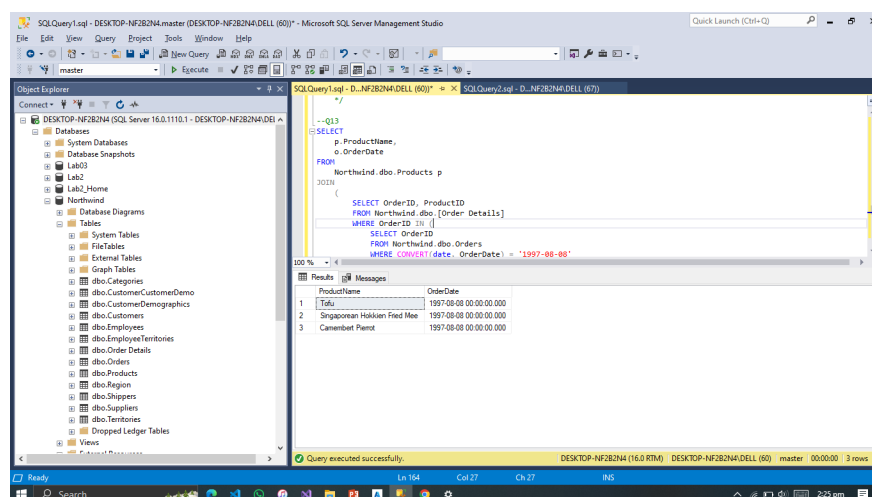


Figure 12: Result of the query 13

14 Question 14

14.1 Question Statement

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

14.2 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;

```

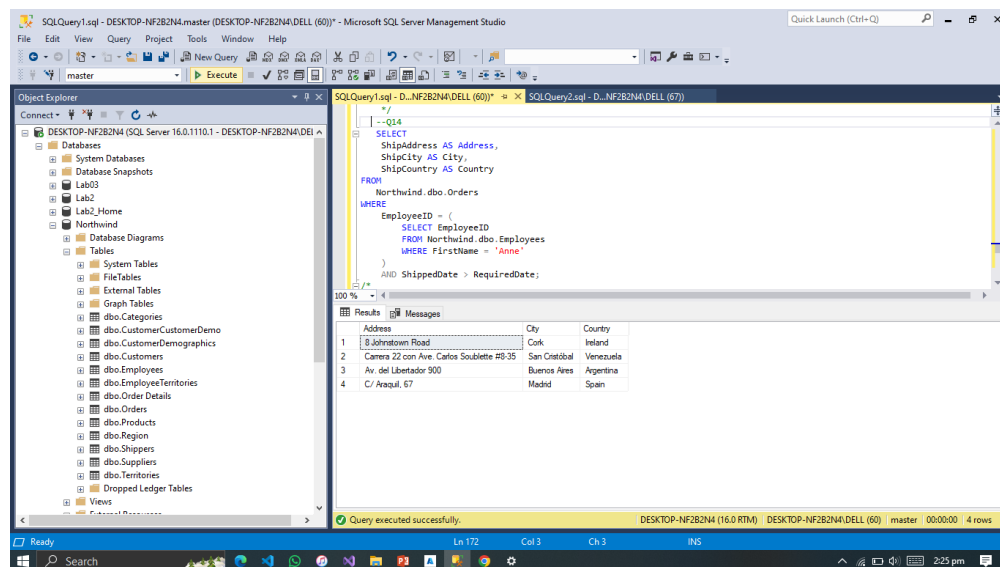


Figure 13: Result of the query 14

15 Question 15

15.1 Question Statement

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

15.2 Query:

```

SELECT DISTINCT
    Country
FROM
    Northwind.dbo.Customers
WHERE
    CustomerID IN (
        SELECT DISTINCT
            o.CustomerID
        FROM
            Northwind.dbo.Orders o
        JOIN
            Northwind.dbo.[Order Details] od
            ON o.OrderID = od.OrderID
        JOIN
            Northwind.dbo.Products p
            ON od.ProductID = p.ProductID
        WHERE
            p.CategoryID = 1
    );

```

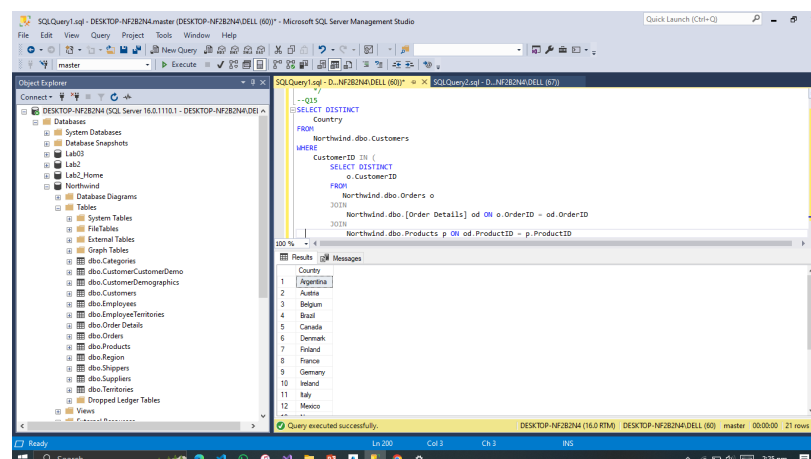


Figure 14: Result of the query 15