DataBase System LAB5

Session 2022 - 2026

Abdul Rehman 2022-CS-79

Submitted To:

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University of Engineering and Technology Lahore Pakistan

Contents

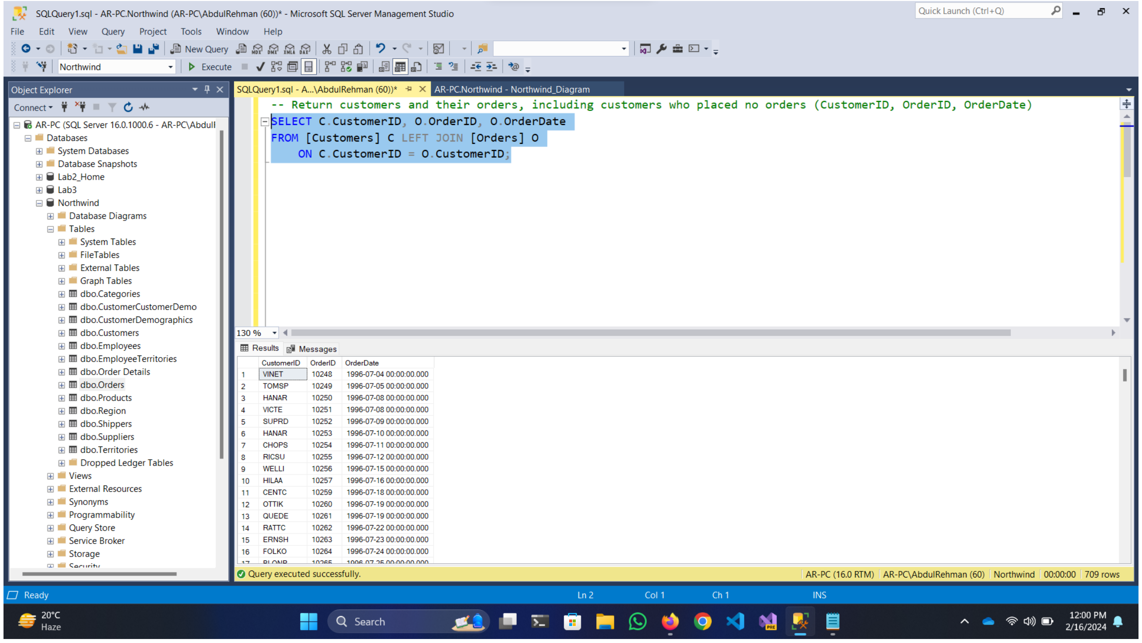
1 Lab-5 Tasks:

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

SQL Query:

```
SELECT C.CustomerID, O.OrderID, O.OrderDate
FROM [Customers] C LEFT JOIN [Orders] O
ON C.CustomerID = O.CustomerID;
```

Result:



```
-- Return customers and their orders, including customers who placed no orders (CustomerID, OrderID, OrderDate)
SELECT C.CustomerID, O.OrderID, O.OrderDate
FROM [Customers] C LEFT JOIN [Orders] O
   ON C.CustomerID = O.CustomerID;
```

	CustomerID	OrderID	OrderDate
1	VINET	10248	1996-07-04 00:00:00.000
2	TOMSP	10249	1996-07-05 00:00:00.000
3	HANAR	10250	1996-07-08 00:00:00.000
4	VICTE	10251	1996-07-08 00:00:00.000
5	SUPRD	10252	1996-07-09 00:00:00.000
6	HANAR	10253	1996-07-10 00:00:00.000
7	CHOPS	10254	1996-07-11 00:00:00.000
8	RICSU	10255	1996-07-12 00:00:00.000
9	WELLI	10256	1996-07-15 00:00:00.000
10	HILAA	10257	1996-07-16 00:00:00.000
11	CENTC	10259	1996-07-18 00:00:00.000
12	OTTIK	10260	1996-07-19 00:00:00.000
13	QUEDE	10261	1996-07-19 00:00:00.000
14	RATTC	10262	1996-07-22 00:00:00.000
15	ERNSH	10263	1996-07-23 00:00:00.000
16	FOLKO	10264	1996-07-24 00:00:00.000
17	BLONP	10265	1996-07-25 00:00:00.000

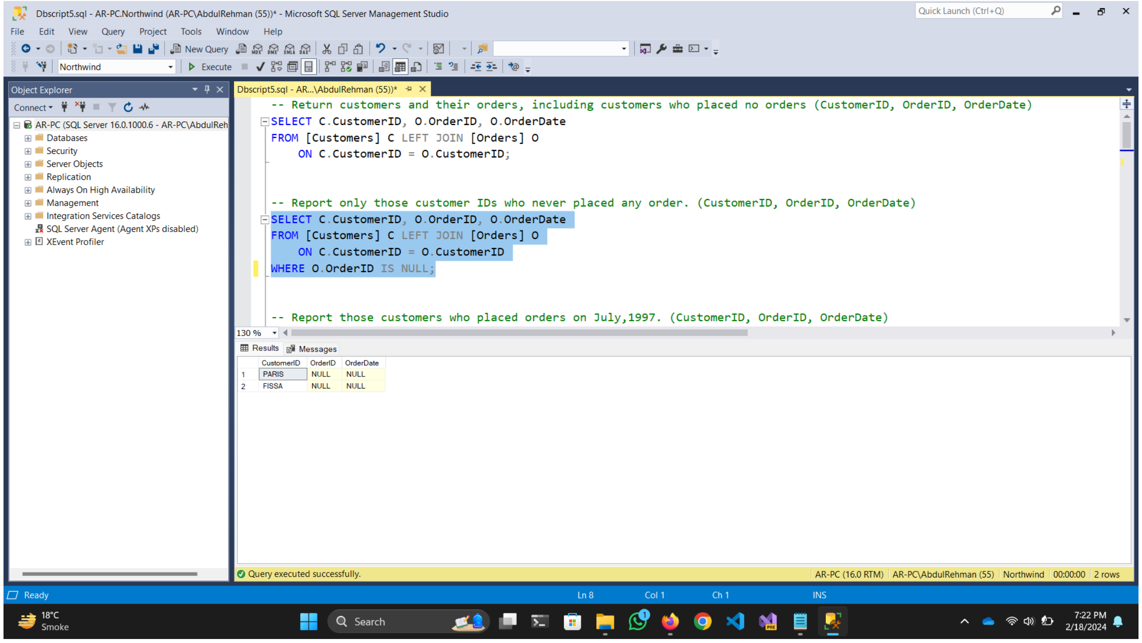
Query executed successfully. AR-PC (16.0 RTM) | AR-PC\AbdulRehman (60) | Northwind | 00:00:00 | 709 rows

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

SQL Query:

```
SELECT C.CustomerID, O.OrderID, O.OrderDate
FROM [Customers] C LEFT JOIN [Orders] O
 ON C.CustomerID = O.CustomerID
WHERE O.OrderID IS NULL;
```

Result:



Dbscript5.sql - AR-PC.Northwind (AR-PC\AbdulRehman (55))* - Microsoft SQL Server Management Studio
Quick Launch (Ctrl+Q)
File Edit View Query Project Tools Window Help
New Query
Northwind
Execute
Object Explorer
Connect
AR-PC (SQL Server 16.0.1000.6 - AR-PC\AbdulReh
Databases
Security
Server Objects
Replication
Always On High Availability
Management
Integration Services Catalogs
SQL Server Agent (Agent XPs disabled)
XEvent Profiler
Dbscript5.sql - AR...\AbdulRehman (55))*
130 %
Results
Messages

```
-- Return customers and their orders, including customers who placed no orders (CustomerID, OrderID, OrderDate)
SELECT C.CustomerID, O.OrderID, O.OrderDate
FROM [Customers] C LEFT JOIN [Orders] O
    ON C.CustomerID = O.CustomerID;


-- Report only those customer IDs who never placed any order. (CustomerID, OrderID, OrderDate)
SELECT C.CustomerID, O.OrderID, O.OrderDate
FROM [Customers] C LEFT JOIN [Orders] O
    ON C.CustomerID = O.CustomerID
WHERE O.OrderID IS NULL;


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

	CustomerID	OrderID	OrderDate
1	PARIS	NULL	NULL
2	FISSA	NULL	NULL

Query executed successfully.

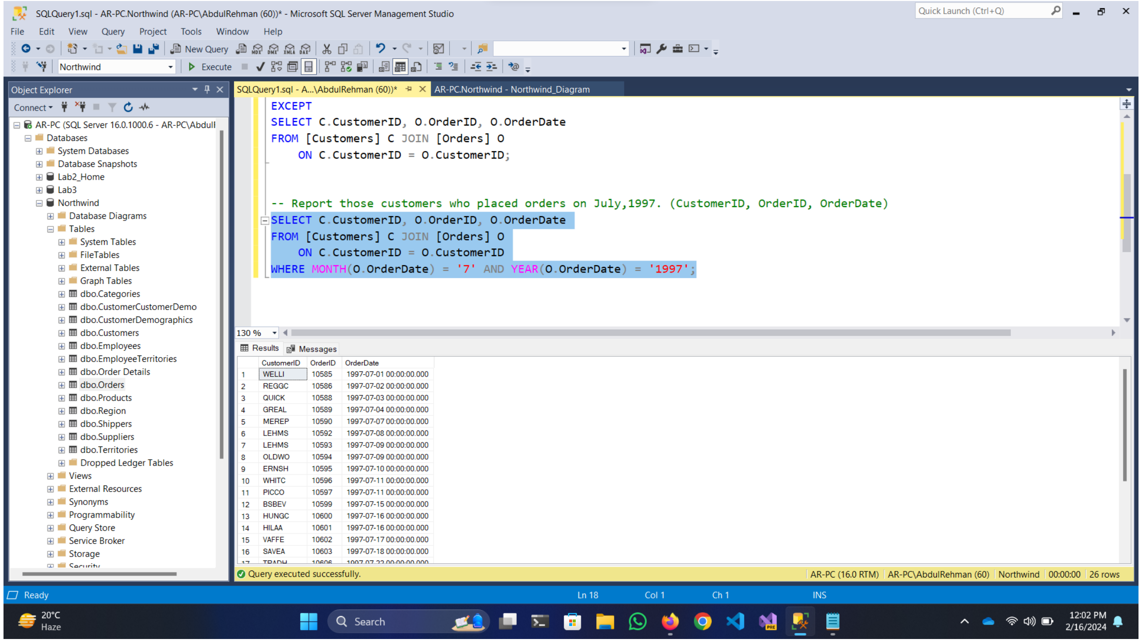
AR-PC (16.0 RTM) | AR-PC\AbdulRehman (55) | Northwind | 00:00:00 | 2 rows
Ready
Ln 8
Col 1
Ch 1
INS
18°C
Smoke
Search
7:22 PM
2/18/2024

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

SQL Query:

```
SELECT C.CustomerID, O.OrderID, O.OrderDate
FROM [Customers] C JOIN [Orders] O
 ON C.CustomerID = O.CustomerID
WHERE MONTH(O.OrderDate) = ’7’ AND YEAR(O.OrderDate) = ’1997’;
```

Result:



SQLQuery1.sql - AR-PC.Northwind (AR-PC\AbdulRehman (60))* - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
New Query
Execute
Northwind
Object Explorer
SQLQuery1.sql - A...\AbdulRehman (60))*
AR-PC.Northwind - Northwind_Diagram
130 %
Results
Messages
Ready
Ln 18
Col 1
Ch 1
INS

```
EXCEPT
SELECT C.CustomerID, O.OrderID, O.OrderDate
FROM [Customers] C JOIN [Orders] O
    ON C.CustomerID = O.CustomerID;


-- Report those customers who placed orders on July,1997. (CustomerID, OrderID, OrderDate)
SELECT C.CustomerID, O.OrderID, O.OrderDate
FROM [Customers] C JOIN [Orders] O
    ON C.CustomerID = O.CustomerID
WHERE MONTH(O.OrderDate) = '7' AND YEAR(O.OrderDate) = '1997';
```

	CustomerID	OrderID	OrderDate
1	WELLI	10585	1997-07-01 00:00:00.000
2	REGGC	10586	1997-07-02 00:00:00.000
3	QUICK	10588	1997-07-03 00:00:00.000
4	GREAL	10589	1997-07-04 00:00:00.000
5	MEREP	10590	1997-07-07 00:00:00.000
6	LEHMS	10592	1997-07-08 00:00:00.000
7	LEHMS	10593	1997-07-09 00:00:00.000
8	OLDWO	10594	1997-07-09 00:00:00.000
9	ERNSH	10595	1997-07-10 00:00:00.000
10	WHITC	10596	1997-07-11 00:00:00.000
11	PICCO	10597	1997-07-11 00:00:00.000
12	BSBEV	10599	1997-07-15 00:00:00.000
13	HUNGC	10600	1997-07-16 00:00:00.000
14	HILAA	10601	1997-07-16 00:00:00.000
15	VAFFE	10602	1997-07-17 00:00:00.000
16	SAVEA	10603	1997-07-18 00:00:00.000
17	TRADH	10606	1997-07-22 00:00:00.000

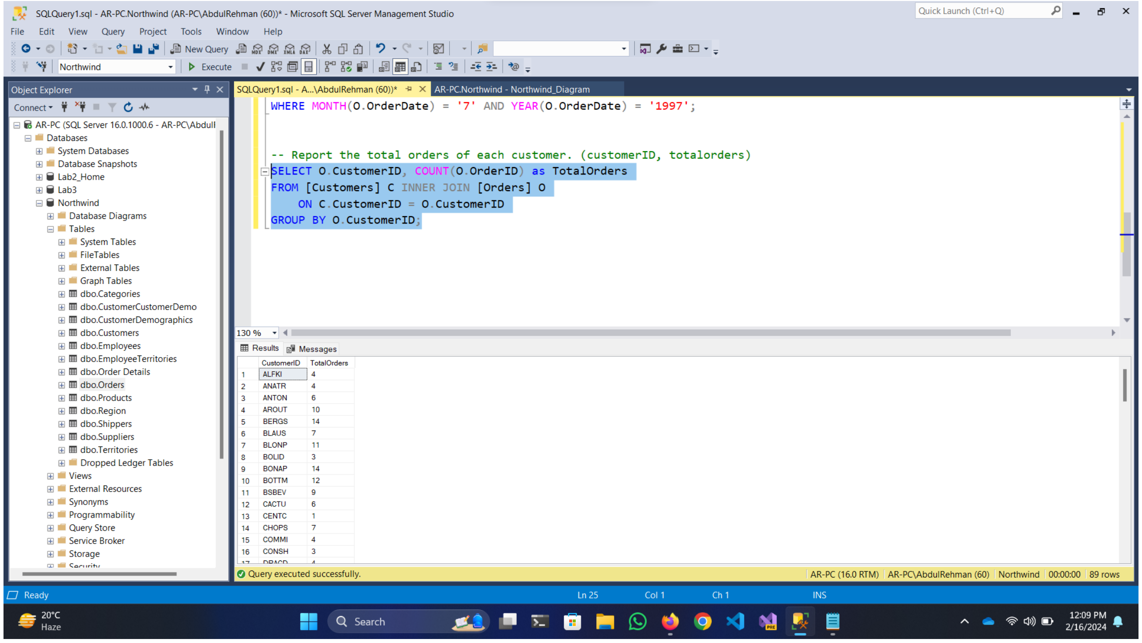
Query executed successfully. AR-PC (16.0 RTM) AR-PC\AbdulRehman (60) Northwind 00:00:00 26 rows

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

SQL Query:

```
SELECT O.CustomerID, COUNT(O.OrderID) as TotalOrders
FROM [Customers] C INNER JOIN [Orders] O
 ON C.CustomerID = O.CustomerID
GROUP BY O.CustomerID;
```

Result:



```
WHERE MONTH(O.OrderDate) = '7' AND YEAR(O.OrderDate) = '1997';


-- Report the total orders of each customer. (customerID, totalorders)
SELECT O.CustomerID, COUNT(O.OrderID) as TotalOrders
FROM [Customers] C INNER JOIN [Orders] O
    ON C.CustomerID = O.CustomerID
GROUP BY O.CustomerID;
```

	CustomerID	TotalOrders
1	ALFKI	4
2	ANATR	4
3	ANTON	6
4	AROUT	10
5	BERGS	14
6	BLAUS	7
7	BLONP	11
8	BOLID	3
9	BONAP	14
10	BOTTM	12
11	BSBEV	9
12	CACTU	6
13	CENTC	1
14	CHOPS	7
15	COMMI	4
16	CONSH	3
17	DRACD	4

Query executed successfully.

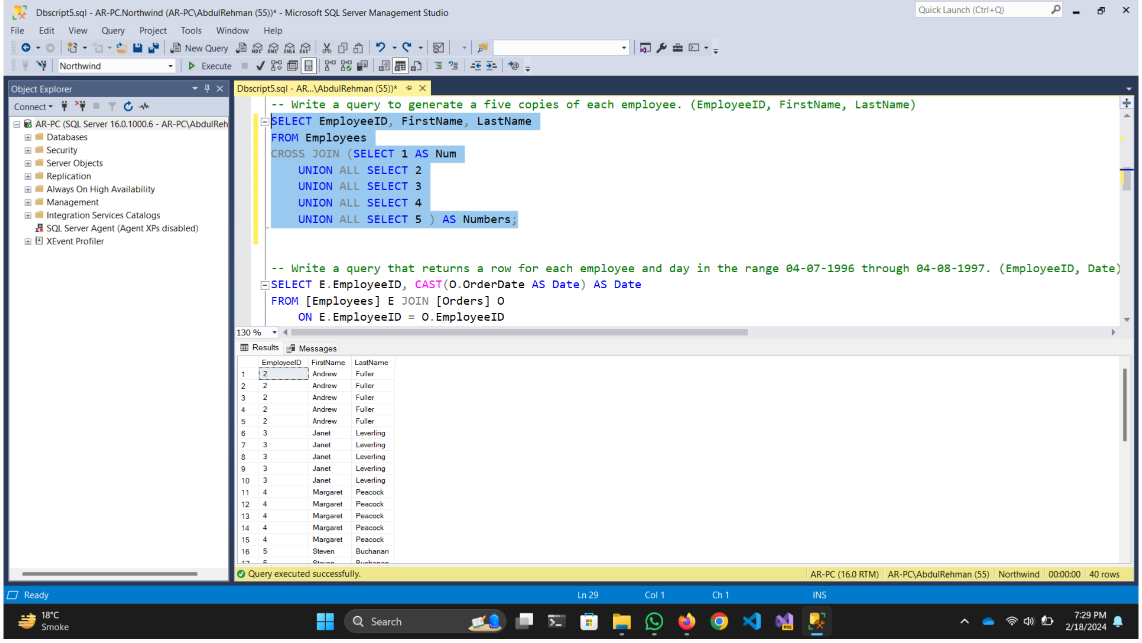
AR-PC (16.0 RTM) | AR-PC\AbdulRehman (60) | Northwind | 00:00:00 | 89 rows

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

SQL Query:

```
SELECT EmployeeID, FirstName, LastName
FROM Employees
CROSS JOIN (SELECT 1 AS Num
    UNION ALL SELECT 2
    UNION ALL SELECT 3
    UNION ALL SELECT 4
    UNION ALL SELECT 5) AS Numbers;
```

Result:



Dbscript5.sql - AR-PC.Northwind (AR-PC\AbdulRehman (55))* - Microsoft SQL Server Management Studio

```
-- Write a query to generate a five copies of each employee. (EmployeeID, FirstName, LastName)
SELECT EmployeeID, FirstName, LastName
FROM Employees
CROSS JOIN (SELECT 1 AS Num
    UNION ALL SELECT 2
    UNION ALL SELECT 3
    UNION ALL SELECT 4
    UNION ALL SELECT 5 ) AS Numbers;


-- Write a query that returns a row for each employee and day in the range 04-07-1996 through 04-08-1997. (EmployeeID, Date)
SELECT E.EmployeeID, CAST(O.OrderDate AS Date) AS Date
FROM [Employees] E JOIN [Orders] O
    ON E.EmployeeID = O.EmployeeID
```

	EmployeeID	FirstName	LastName
1	2	Andrew	Fuller
2	2	Andrew	Fuller
3	2	Andrew	Fuller
4	2	Andrew	Fuller
5	2	Andrew	Fuller
6	3	Janet	Leverling
7	3	Janet	Leverling
8	3	Janet	Leverling
9	3	Janet	Leverling
10	3	Janet	Leverling
11	4	Margaret	Peacock
12	4	Margaret	Peacock
13	4	Margaret	Peacock
14	4	Margaret	Peacock
15	4	Margaret	Peacock
16	5	Steven	Buchanan

Query executed successfully.

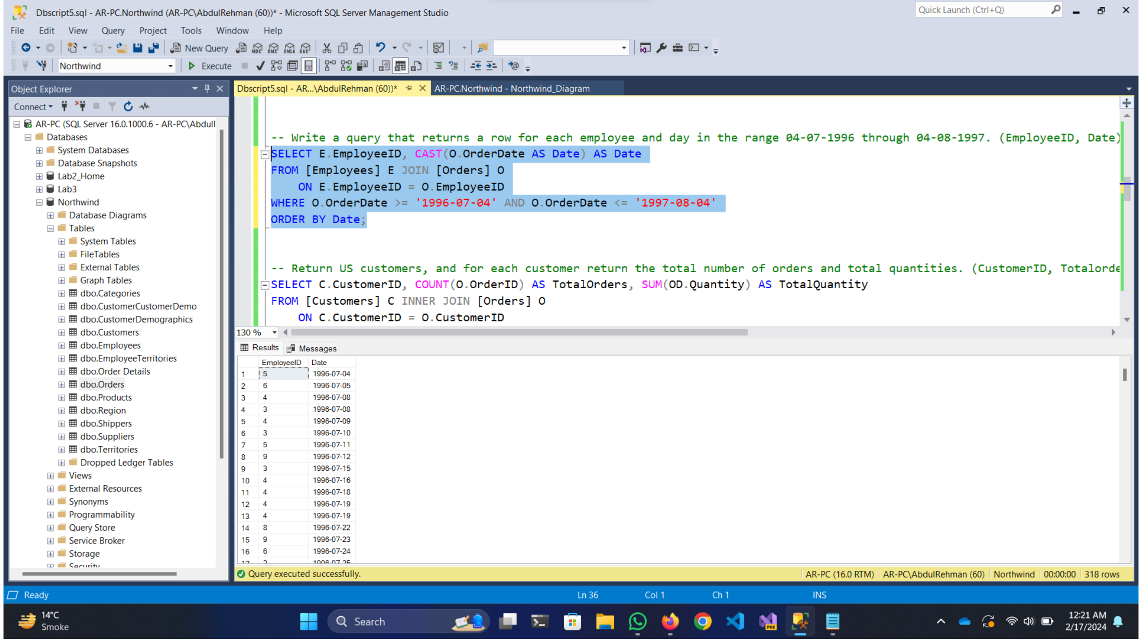
AR-PC (16.0 RTM) | AR-PC\AbdulRehman (55) | Northwind | 00:00:00 | 40 rows

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

SQL Query:

```
SELECT E.EmployeeID, CAST(O.OrderDate AS Date) AS Date
FROM [Employees] E JOIN [Orders] O
 ON E.EmployeeID = O.EmployeeID
WHERE O.OrderDate >= ’1996-07-04’ AND O.OrderDate <= ’1997-08-04’
ORDER BY Date;
```

Result:


Dbscript5.sql - AR-PC.Northwind (AR-PC\AbdulRehman (60))* - Microsoft SQL Server Management Studio
File
Edit
View
Query
Project
Tools
Window
Help
New Query
Execute
Northwind
Object Explorer
Dbscript5.sql - AR...\AbdulRehman (60))*
AR-PC.Northwind - Northwind_Diagram
Results
Messages
Ready
Ln 36
Col 1
Ch 1
INS

```
-- Write a query that returns a row for each employee and day in the range 04-07-1996 through 04-08-1997. (EmployeeID, Date)
SELECT E.EmployeeID, CAST(O.OrderDate AS Date) AS Date
FROM [Employees] E JOIN [Orders] O
    ON E.EmployeeID = O.EmployeeID
WHERE O.OrderDate >= '1996-07-04' AND O.OrderDate <= '1997-08-04'
ORDER BY Date;


-- Return US customers, and for each customer return the total number of orders and total quantities. (CustomerID, Totalorde
SELECT C.CustomerID, COUNT(O.OrderID) AS TotalOrders, SUM(OD.Quantity) AS TotalQuantity
FROM [Customers] C INNER JOIN [Orders] O
    ON C.CustomerID = O.CustomerID
```

	EmployeeID	Date
1	5	1996-07-04
2	6	1996-07-05
3	4	1996-07-08
4	3	1996-07-08
5	4	1996-07-09
6	3	1996-07-10
7	5	1996-07-11
8	9	1996-07-12
9	3	1996-07-15
10	4	1996-07-16
11	4	1996-07-18
12	4	1996-07-19
13	4	1996-07-19
14	8	1996-07-22
15	9	1996-07-23
16	6	1996-07-24

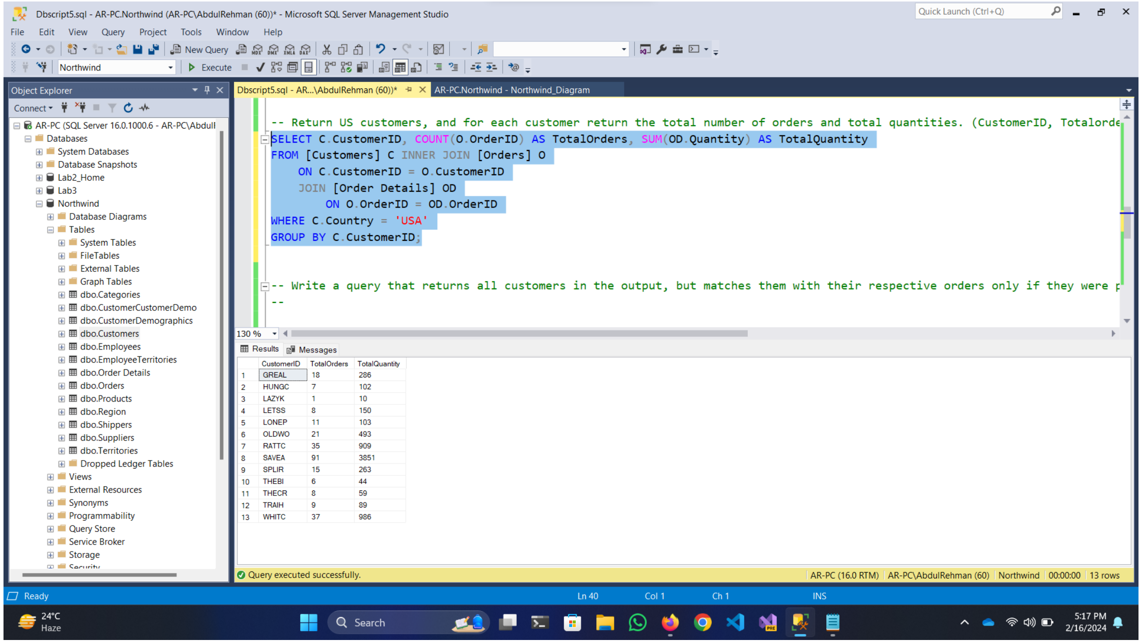
```
Query executed successfully.    AR-PC (16.0 RTM) | AR-PC\AbdulRehman (60) | Northwind | 00:00:00 | 318 rows
```

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

SQL Query:

```
SELECT C.CustomerID, COUNT(O.OrderID) AS TotalOrders, SUM(OD.Quantity)
FROM [Customers] C INNER JOIN [Orders] O
 ON C.CustomerID = O.CustomerID
 JOIN [Order Details] OD
 ON O.OrderID = OD.OrderID
WHERE C.Country = ’USA’
GROUP BY C.CustomerID;
```

Result:



```
-- Return US customers, and for each customer return the total number of orders and total quantities. (CustomerID, Totalorde
SELECT C.CustomerID, COUNT(O.OrderID) AS TotalOrders, SUM(OD.Quantity) AS TotalQuantity
FROM [Customers] C INNER JOIN [Orders] O
    ON C.CustomerID = O.CustomerID
    JOIN [Order Details] OD
        ON O.OrderID = OD.OrderID
WHERE C.Country = 'USA'
GROUP BY C.CustomerID;


-- Write a query that returns all customers in the output, but matches them with their respective orders only if they were p
--
```

	CustomerID	TotalOrders	TotalQuantity
1	GREAL	18	286
2	HUNGC	7	102
3	LAZYK	1	10
4	LETSS	8	150
5	LONEP	11	103
6	OLDWO	21	493
7	RATTC	35	909
8	SAVEA	91	3851
9	SPLIR	15	263
10	THEBI	6	44
11	THECR	8	59
12	TRAIH	9	89
13	WHITC	37	986

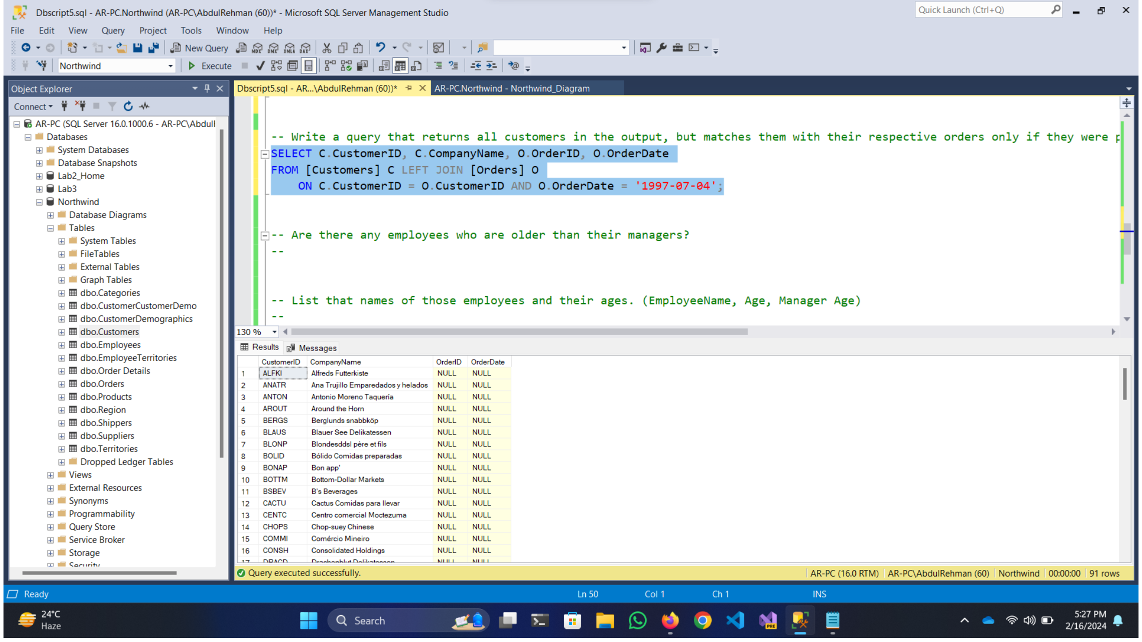
Query executed successfully.

1.8 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)

SQL Query:

```
SELECT C.CustomerID, C.CompanyName, O.OrderID, O.OrderDate
FROM [Customers] C LEFT JOIN [Orders] O
 ON C.CustomerID = O.CustomerID AND O.OrderDate = ’1997-07-04’;
```

Result:


Dbscript5.sql - AR-PC.Northwind (AR-PC\AbdulRehman (60))* - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
Object Explorer
Dbscript5.sql - AR...\AbdulRehman (60))*
AR-PC.Northwind - Northwind_Diagram
Results
Messages

```
-- Write a query that returns all customers in the output, but matches them with their respective orders only if they were p
SELECT C.CustomerID, C.CompanyName, O.OrderID, O.OrderDate
FROM [Customers] C LEFT JOIN [Orders] O
    ON C.CustomerID = O.CustomerID AND O.OrderDate = '1997-07-04';


-- Are there any employees who are older than their managers?
--


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

	CustomerID	CompanyName	OrderID	OrderDate
1	ALFKI	Alfreds Futterkiste	NULL	NULL
2	ANATR	Ana Trujillo Emparedados y helados	NULL	NULL
3	ANTON	Antonio Moreno Taquería	NULL	NULL
4	AROUT	Around the Horn	NULL	NULL
5	BERGS	Berglunds snabbköp	NULL	NULL
6	BLAUS	Blauer See Delikatessen	NULL	NULL
7	BLONP	Blondesddsl père et fils	NULL	NULL
8	BOLID	Bólido Comidas preparadas	NULL	NULL
9	BONAP	Bon app'	NULL	NULL
10	BOTTM	Bottom-Dollar Markets	NULL	NULL
11	BSBEV	B's Beverages	NULL	NULL
12	CACTU	Cactus Comidas para llevar	NULL	NULL
13	CENTC	Centro comercial Moctezuma	NULL	NULL
14	CHOPS	Chop-suey Chinese	NULL	NULL
15	COMMI	Comércio Mineiro	NULL	NULL
16	CONSH	Consolidated Holdings	NULL	NULL
17	DRACD	Drachenblut Delikatessen	NULL	NULL

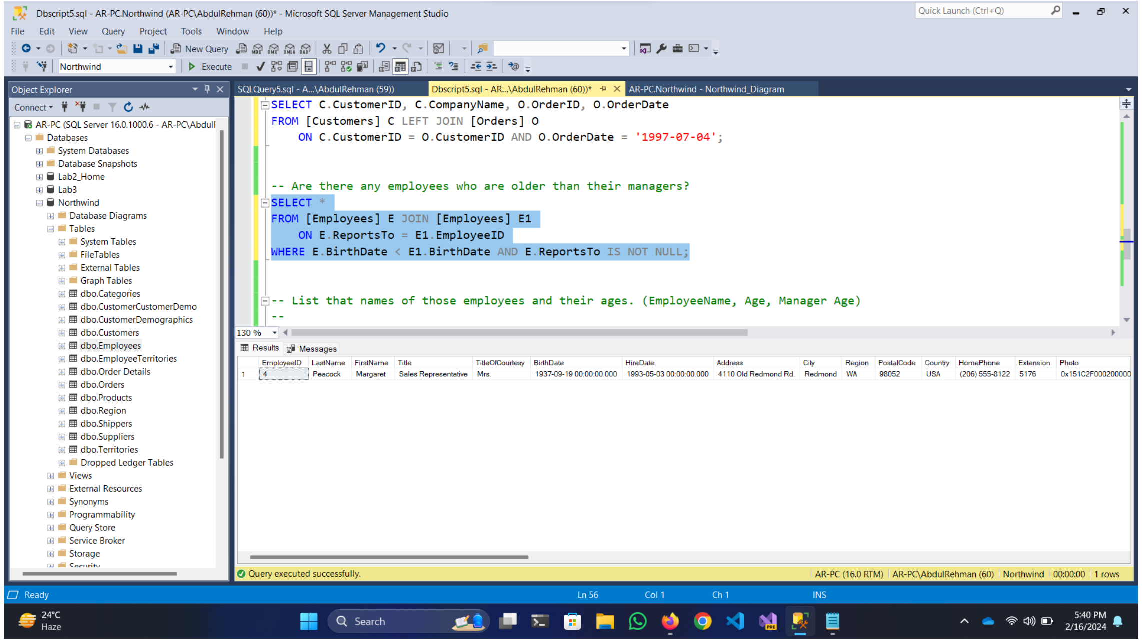
Query executed successfully. AR-PC (16.0 RTM) AR-PC\AbdulRehman (60) Northwind 00:00:00 91 rows

1.9 Are there any employees who are older than their managers?

SQL Query:

```
SELECT *
FROM [Employees] E JOIN [Employees] E1
 ON E.ReportsTo = E1.EmployeeID
WHERE E.BirthDate < E1.BirthDate AND E.ReportsTo IS NOT NULL;
```

Result:



Dbscript5.sql - AR-PC.Northwind (AR-PC\AbdulRehman (60))* - Microsoft SQL Server Management Studio

```
SELECT C.CustomerID, C.CompanyName, O.OrderID, O.OrderDate
FROM [Customers] C LEFT JOIN [Orders] O
    ON C.CustomerID = O.CustomerID AND O.OrderDate = '1997-07-04';


-- Are there any employees who are older than their managers?
SELECT *
FROM [Employees] E JOIN [Employees] E1
    ON E.ReportsTo = E1.EmployeeID
WHERE E.BirthDate < E1.BirthDate AND E.ReportsTo IS NOT NULL;


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

	EmployeeID	LastName	FirstName	Title	TitleOfCourtesy	BirthDate	HireDate	Address	City	Region	PostalCode	Country	HomePhone	Extension	Photo
1	4	Peacock	Margaret	Sales Representative	Mrs.	1937-09-19 00:00:00.000	1993-05-03 00:00:00.000	4110 Old Redmond Rd.	Redmond	WA	98052	USA	(206) 555-8122	5176	0x151C2F000200000

Query executed successfully.

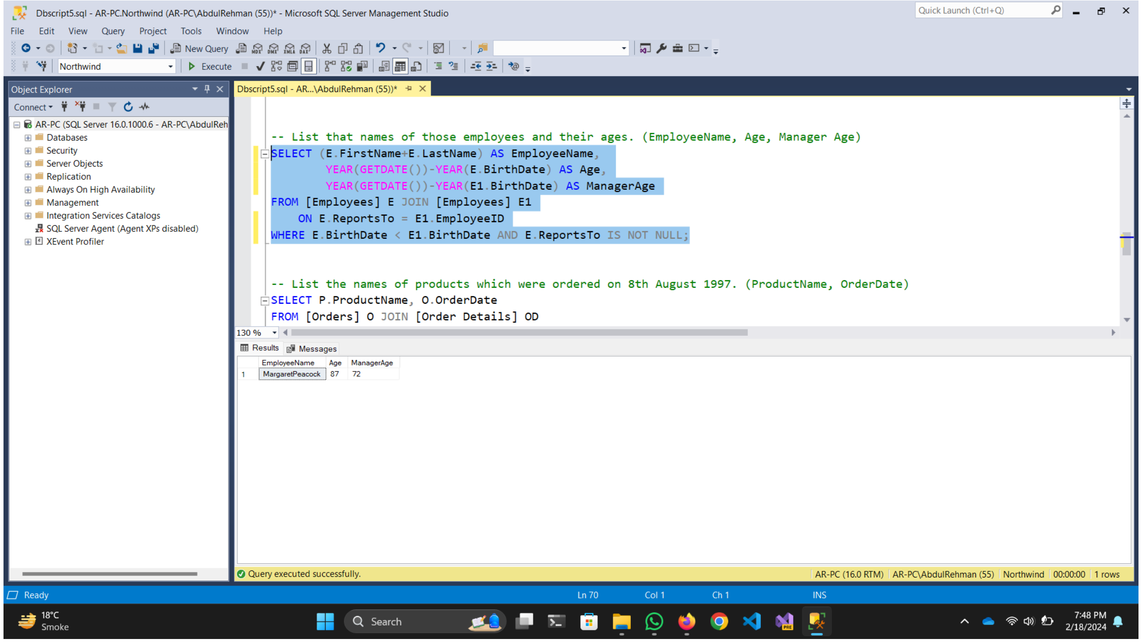
AR-PC (16.0 RTM) | AR-PC\AbdulRehman (60) | Northwind | 00:00:00 | 1 rows

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

SQL Query:

```
SELECT (E.FirstName+E.LastName) AS EmployeeName,
    YEAR(GETDATE())-YEAR(E.BirthDate) AS Age,
    YEAR(GETDATE())-YEAR(E1.BirthDate) AS ManagerAge
FROM [Employees] E JOIN [Employees] E1
 ON E.ReportsTo = E1.EmployeeID
WHERE E.BirthDate < E1.BirthDate AND E.ReportsTo IS NOT NULL;
```

Result:



```
-- List that names of those employees and their ages. (EmployeeName, Age, Manager Age)
SELECT (E.FirstName+E.LastName) AS EmployeeName,
        YEAR(GETDATE())-YEAR(E.BirthDate) AS Age,
        YEAR(GETDATE())-YEAR(E1.BirthDate) AS ManagerAge
FROM [Employees] E JOIN [Employees] E1
    ON E.ReportsTo = E1.EmployeeID
WHERE E.BirthDate < E1.BirthDate AND E.ReportsTo IS NOT NULL;


-- List the names of products which were ordered on 8th August 1997. (ProductName, OrderDate)
SELECT P.ProductName, O.OrderDate
FROM [Orders] O JOIN [Order Details] OD
```

	EmployeeName	Age	ManagerAge
1	MargaretPeacock	87	72

Query executed successfully.

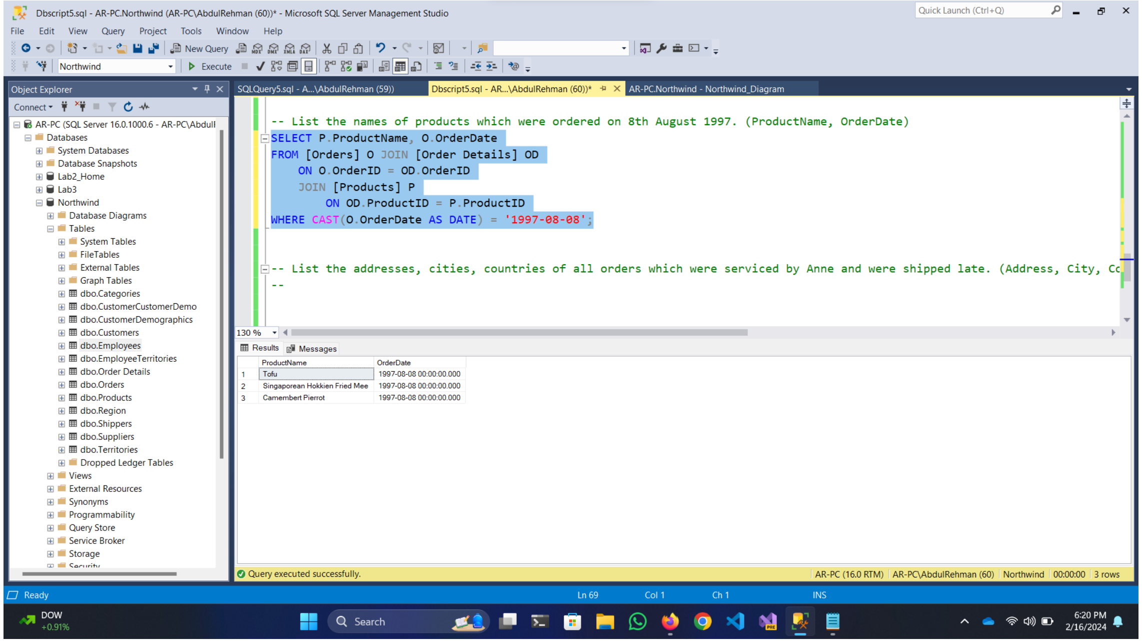
Dbscript5.sql - AR-PC.Northwind (AR-PC\AbdulRehman (55))* - Microsoft SQL Server Management Studio
Quick Launch (Ctrl+Q)
File Edit View Query Project Tools Window Help
New Query
Execute
Northwind
Object Explorer
Connect
AR-PC (SQL Server 16.0.1000.6 - AR-PC\AbdulReh
Databases
Security
Server Objects
Replication
Always On High Availability
Management
Integration Services Catalogs
SQL Server Agent (Agent XPs disabled)
XEvent Profiler
Dbscript5.sql - AR...\AbdulRehman (55))*
130 %
Results
Messages
AR-PC (16.0 RTM) AR-PC\AbdulRehman (55) Northwind 00:00:00 1 rows
Ready
Ln 70 Col 1 Ch 1 INS
18°C Smoke
Search
7:48 PM 2/18/2024

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

SQL Query:

```
SELECT P.ProductName, O.OrderDate
FROM [Orders] O JOIN [Order Details] OD
 ON O.OrderID = OD.OrderID
 JOIN [Products] P
 ON OD.ProductID = P.ProductID
WHERE CAST(O.OrderDate AS DATE) = '1997-08-08';
```

Result:



Dbscript5.sql - AR-PC.Northwind (AR-PC\AbdulRehman (60))* - Microsoft SQL Server Management Studio
SQLQuery5.sql - A...\AbdulRehman (59))
Dbscript5.sql - AR...\AbdulRehman (60))*
AR-PC.Northwind - Northwind_Diagram
Object Explorer
Northwind
Execute

```
-- List the names of products which were ordered on 8th August 1997. (ProductName, OrderDate)
SELECT P.ProductName, O.OrderDate
FROM [Orders] O JOIN [Order Details] OD
    ON O.OrderID = OD.OrderID
    JOIN [Products] P
        ON OD.ProductID = P.ProductID
WHERE CAST(O.OrderDate AS DATE) = '1997-08-08';


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

	ProductName	OrderDate
1	Tofu	1997-08-08 00:00:00.000
2	Singaporean Hokkien Fried Mee	1997-08-08 00:00:00.000
3	Camembert Pierrot	1997-08-08 00:00:00.000

Query executed successfully.

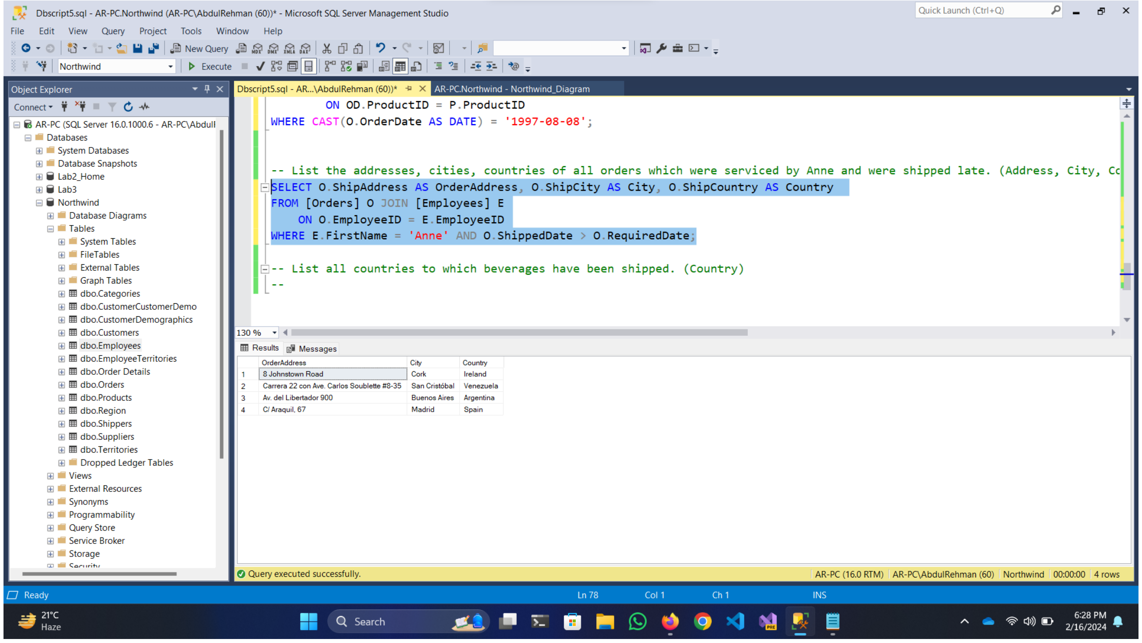
AR-PC (16.0 RTM) | AR-PC\AbdulRehman (60) | Northwind | 00:00:00 | 3 rows
Ready
Ln 69
Col 1
Ch 1
INS

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

SQL Query:

```
SELECT O.ShipAddress AS OrderAddress, O.ShipCity AS City, O.ShipCountry
FROM [Orders] O JOIN [Employees] E
 ON O.EmployeeID = E.EmployeeID
WHERE E.FirstName = ’Anne’ AND O.ShippedDate > O.RequiredDate;
```

Result:



```
        ON OD.ProductID = P.ProductID
WHERE CAST(O.OrderDate AS DATE) = '1997-08-08';


-- List the addresses, cities, countries of all orders which were serviced by Anne and were shipped late. (Address, City, Cc
SELECT O.ShipAddress AS OrderAddress, O.ShipCity AS City, O.ShipCountry AS Country
FROM [Orders] O JOIN [Employees] E
    ON O.EmployeeID = E.EmployeeID
WHERE E.FirstName = 'Anne' AND O.ShippedDate > O.RequiredDate;

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

	OrderAddress	City	Country
1	8 Johnstown Road	Cork	Ireland
2	Carrera 22 con Ave. Carlos Soublette #8-35	San Cristóbal	Venezuela
3	Av. del Libertador 900	Buenos Aires	Argentina
4	C/ Araquil, 67	Madrid	Spain

Query executed successfully.

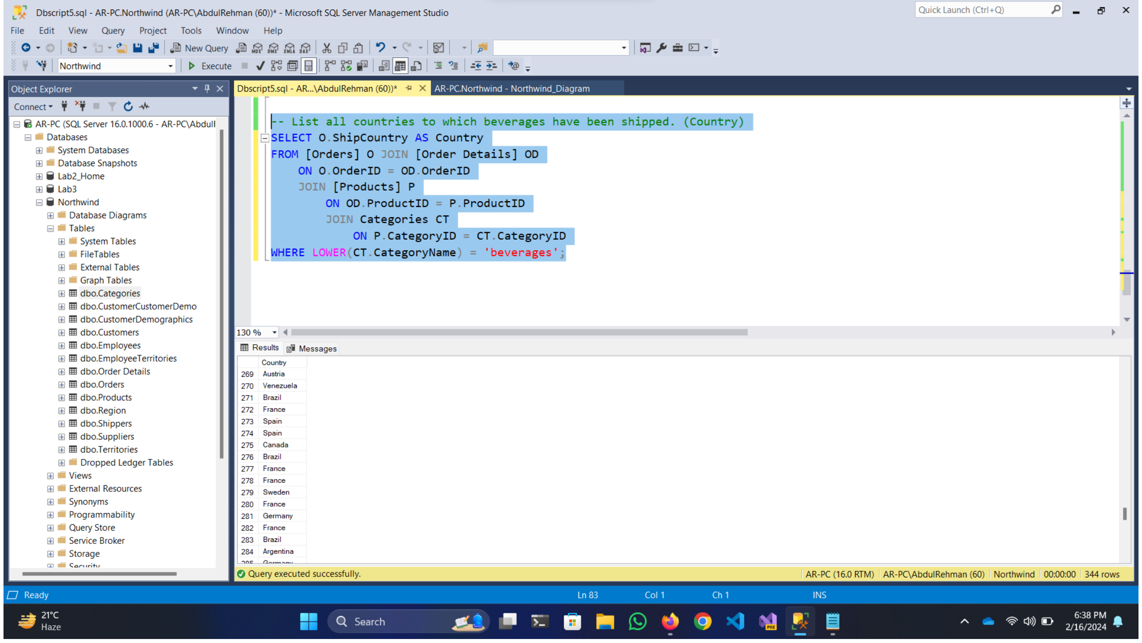
AR-PC (16.0 RTM) | AR-PC\AbdulRehman (60) | Northwind | 00:00:00 | 4 rows

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

SQL Query:

```
SELECT O.ShipCountry AS Country
FROM [Orders] O JOIN [Order Details] OD
 ON O.OrderID = OD.OrderID
 JOIN [Products] P
 ON OD.ProductID = P.ProductID
 JOIN Categories CT
 ON P.CategoryID = CT.CategoryID
WHERE LOWER(CT.CategoryName) = 'beverages';
```

Result:



```
-- List all countries to which beverages have been shipped. (Country)
SELECT O.ShipCountry AS Country
FROM [Orders] O JOIN [Order Details] OD
    ON O.OrderID = OD.OrderID
    JOIN [Products] P
        ON OD.ProductID = P.ProductID
        JOIN Categories CT
            ON P.CategoryID = CT.CategoryID
WHERE LOWER(CT.CategoryName) = 'beverages';
```

	Country
269	Austria
270	Venezuela
271	Brazil
272	France
273	Spain
274	Spain
275	Canada
276	Brazil
277	France
278	France
279	Sweden
280	France
281	Germany
282	France
283	Brazil
284	Argentina
285	Germany

Query executed successfully. AR-PC (16.0 RTM) AR-PC\AbdulRehman (60) Northwind 00:00:00 344 rows