DATABASE SYSTEMS
LAB 6

Session 2022 - 2026

Submitted By

Muhammad Jilani 2022-CS-192

Submitted To

Sir Nazeef Ul Haq
Sir Nauman Babar

Contents

1 Task 01

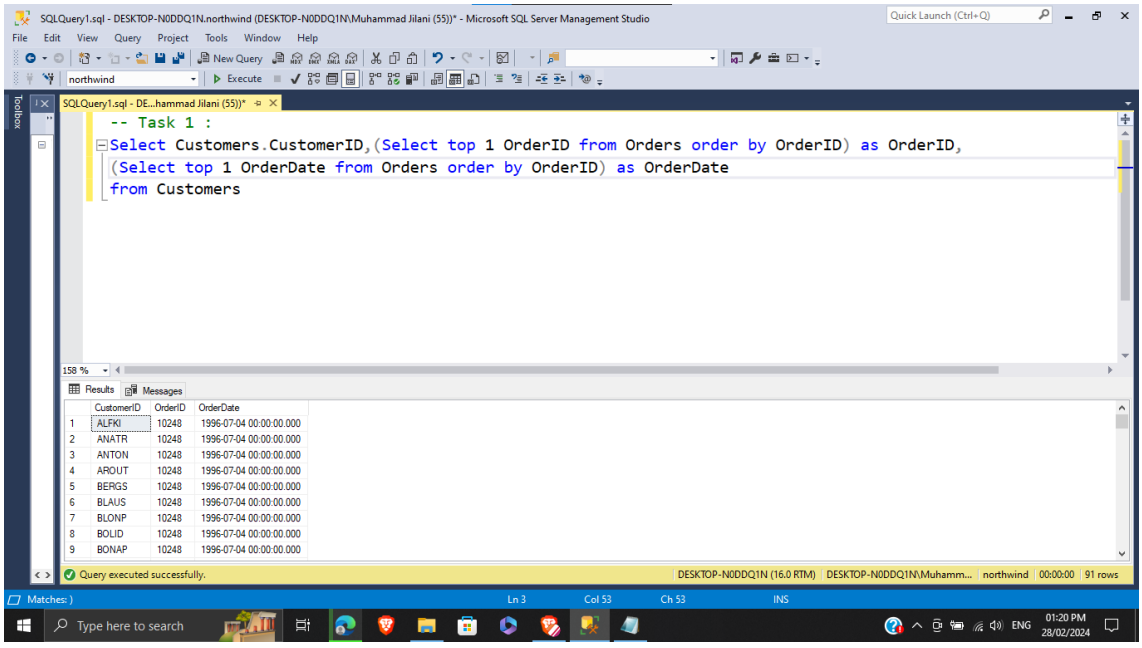
1.1 Question :

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

1.2 Query :

```
Select Customers.CustomerID,
(
     Select Top 1 OrderID from Orders Order by OrderID
) as OrderID,
(
     Select top 1 OrderDate from Orders order by OrderID
) as OrderDate
     from Customers
```

1.3 Picture



2 Task 02

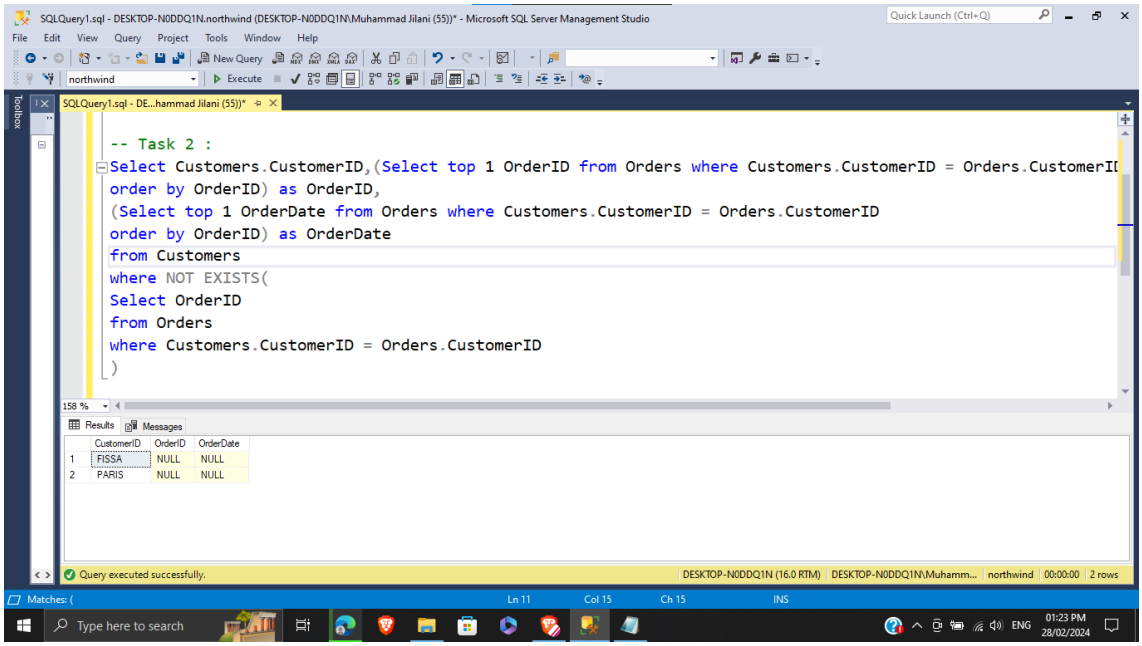
2.1 Question :

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

2.2 Query :

```
 Select Customers.CustomerID,
(
     Select Top 1 OrderID from Orders where Customers.CustomerID = Orders.CustomerID
     order by OrderID
) as OrderID,
(
     Select top 1 OrderDate
 from Orders
 where Customers.CustomerID = Orders.CustomerID
 order by OrderID
) as OrderDate
     from Customers
 where NOT EXISTS(
 Select OrderID
 from Orders
 where Customers.CustomerID = Orders.CustomerID
 )
```

2.3 Picture



3 Task 03

3.1 Question :

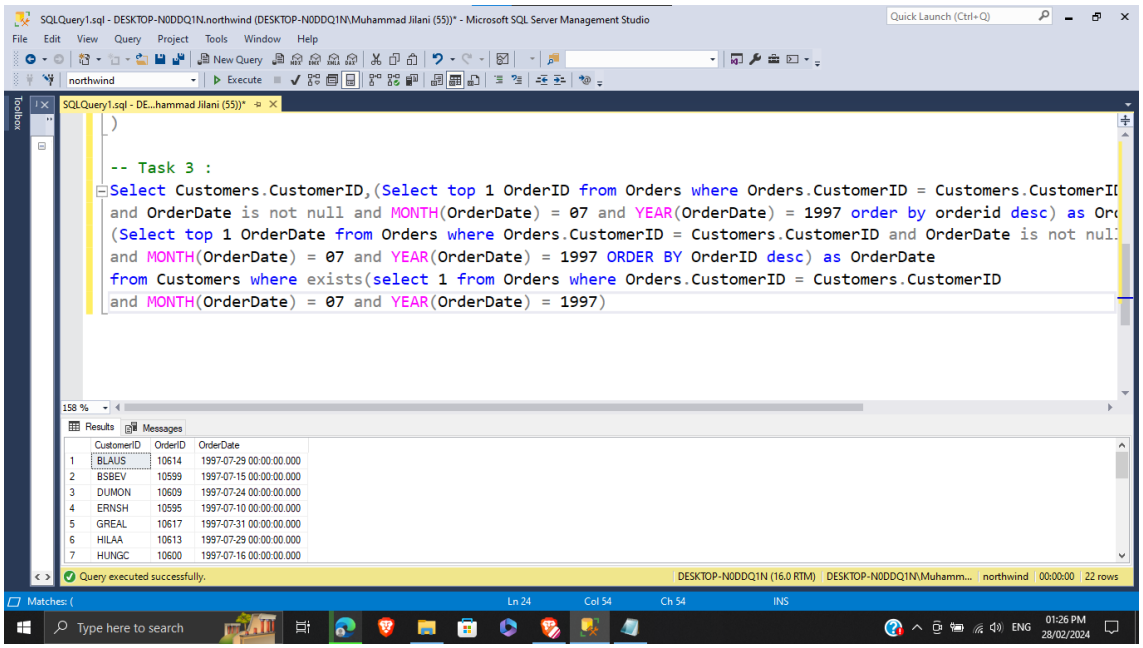
Report those customers who placed orders on July,1997. (CustomerID, OrderID, OrderDate)

3.2 Query :

```
 Select Customers.CustomerID,
(
   Select top 1 OrderID
   from Orders
   where Orders.CustomerID = Customers.CustomerID
   and OrderDate is not null
   and MONTH(OrderDate) = 07
   and YEAR(OrderDate) = 1997
   order by orderid desc
) as OrderID,
(
   Select top 1 OrderDate
```

```
    from Orders
   where Orders.CustomerID = Customers.CustomerID
   and OrderDate is not null
   and MONTH(OrderDate) = 07
   and YEAR(OrderDate) = 1997
   ORDER BY OrderID desc
) as OrderDate
from Customers
where exists
(
   select 1
   from Orders
   where Orders.CustomerID = Customers.CustomerID
   and MONTH(OrderDate) = 07
   and YEAR(OrderDate) = 1997
)
```

3.3 Picture



4 Task 04

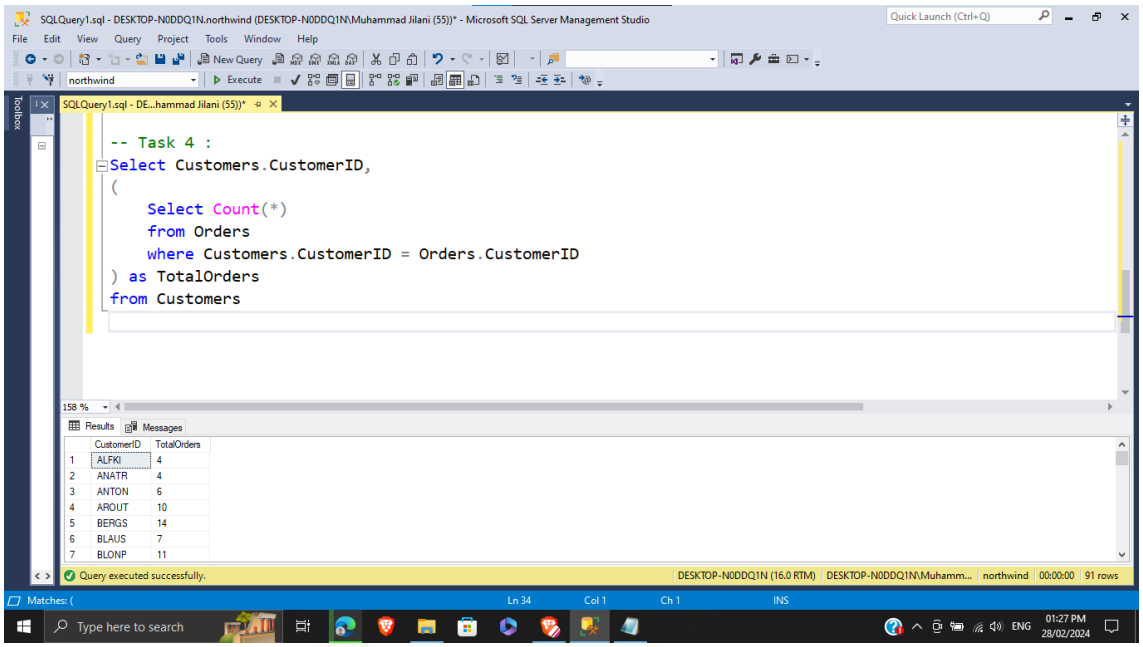
4.1 Question :

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

4.2 Query :

```
Select Customers.CustomerID,
(
Select Count(*)
  from Orders
where Customers.CustomerID = Orders.CustomerID
) as TotalOrders
from Customers
```

4.3 Picture



5 Task 05

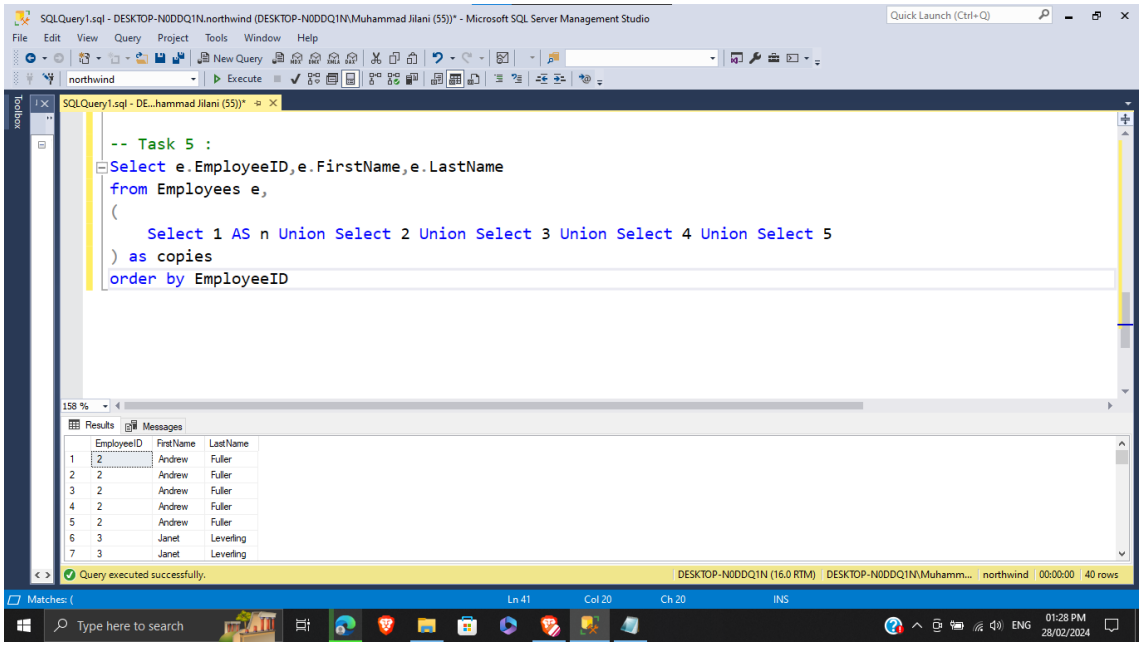
5.1 Question :

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 Employees e,
(
Select 1 AS n Union Select 2 Union Select 3 Union Select 4 Union Select 5
) as copies
order by EmployeeID
```

5.3 Picture



6 Task 06

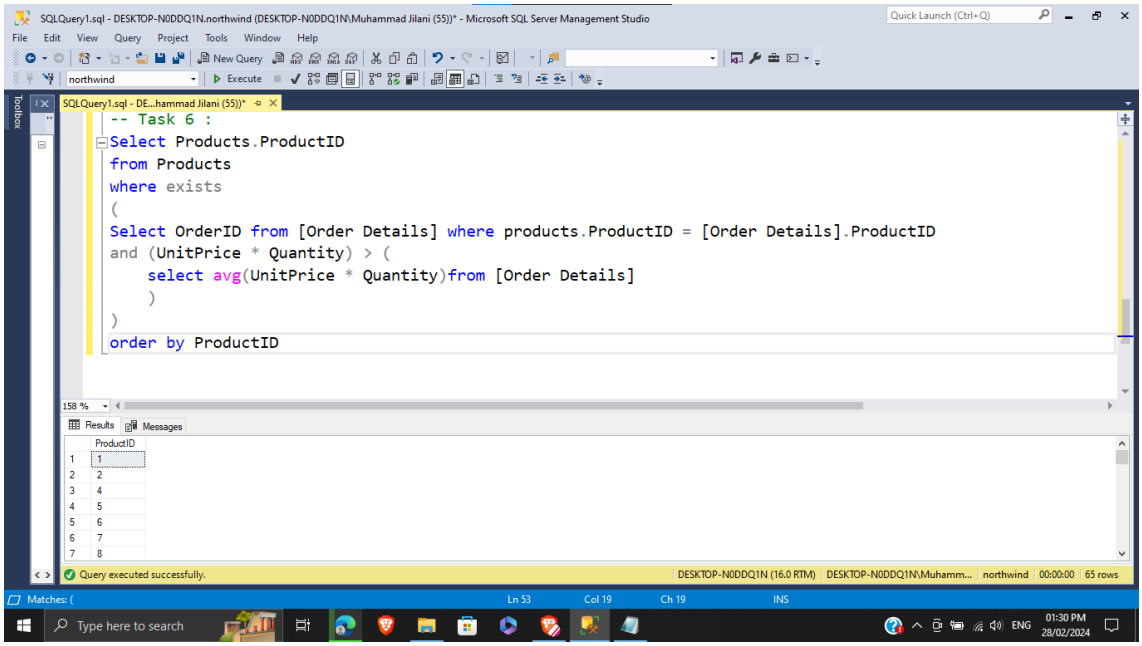
6.1 Question :

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

6.2 Query :

```
 Select Products.ProductID
 from Products
 where exists
 (
Select orderid
from [Order Details]
where products.ProductID = [Order Details].ProductID
and (UnitPrice * Quantity) >
(
select avg(UnitPrice * Quantity)
from [Order Details]
)
 )
 order by ProductID
```

6.3 Picture



7 Task 07

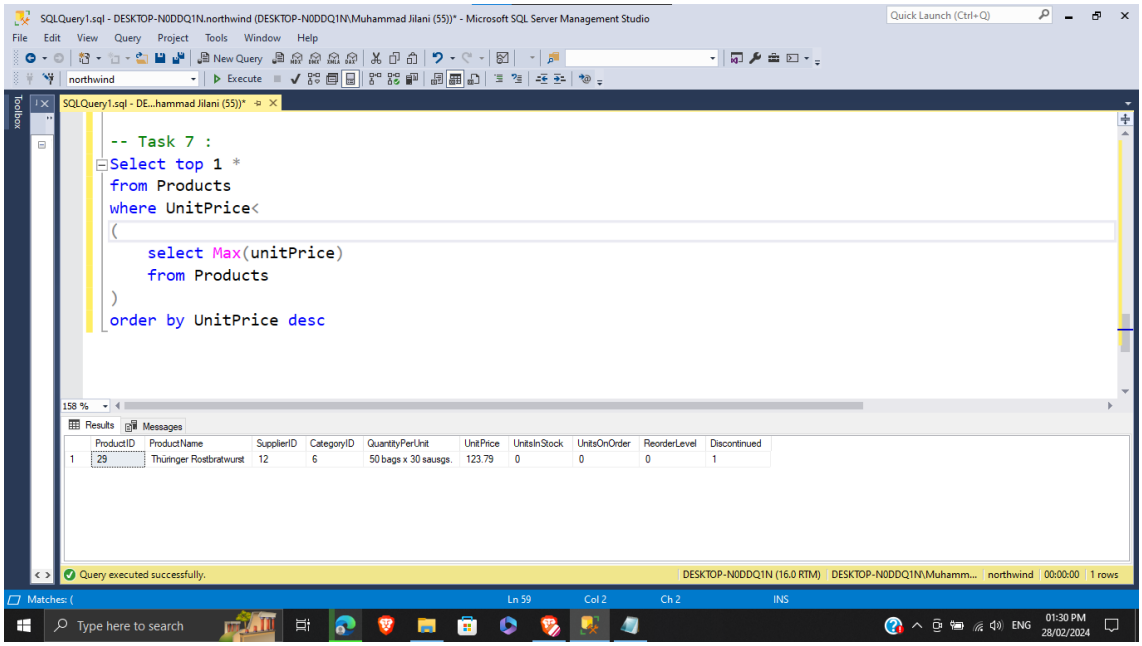
7.1 Question :

Find the second highest price of product.

7.2 Query :

```
Select top 1 *
from Products
where UnitPrice<
(
select Max(unitPrice)
from Products
)
order by unitPrice desc
```

7.3 Picture



8 Task 08

8.1 Question :

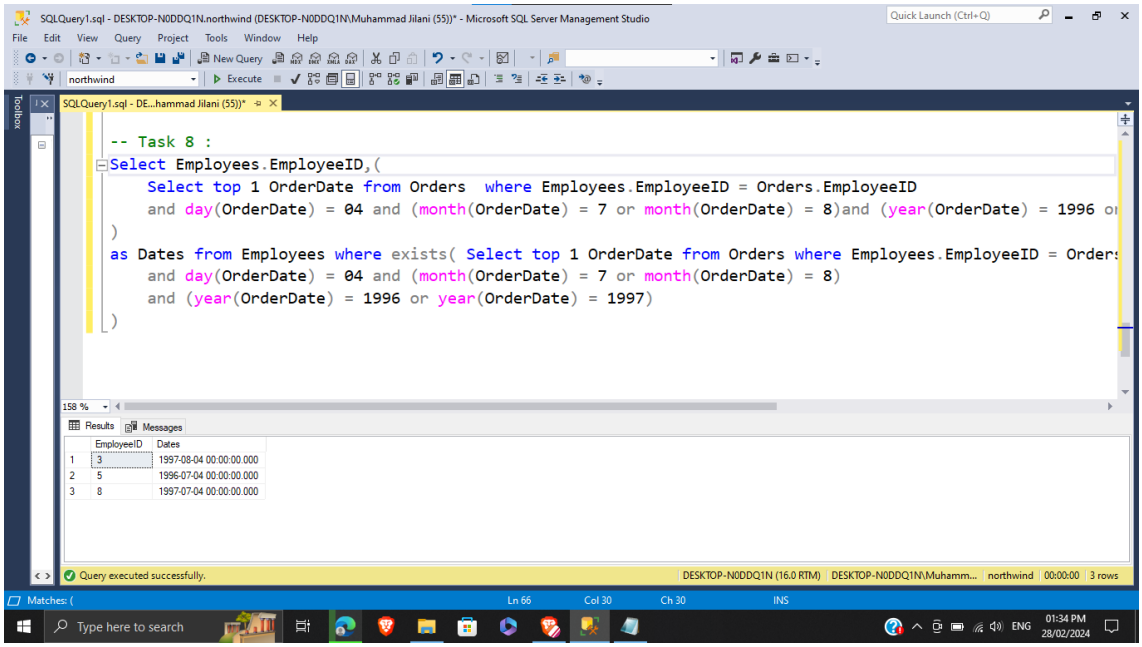
Write a query that returns a row for each employee and day in the range 04-07-1996 through 04-08-1997. (EmployeeID, Date)

8.2 Query :

```
Select Employees.EmployeeID,
(
Select top 1 OrderDate
from Orders
where Employees.EmployeeID = Orders.EmployeeID
and day(OrderDate) = 04
and (month(OrderDate) = 7 or month(OrderDate) = 8)
and (year(OrderDate) = 1996 or year(OrderDate) = 1997)
) as Dates
from Employees
where exists
(
```

```
Select top 1 OrderDate
from Orders
where Employees.EmployeeID = Orders.EmployeeID
and day(OrderDate) = 04
and (month(OrderDate) = 7 or month(OrderDate) = 8)
and (year(OrderDate) = 1996 or year(OrderDate) = 1997)
)
```

8.3 Picture



9 Task 09

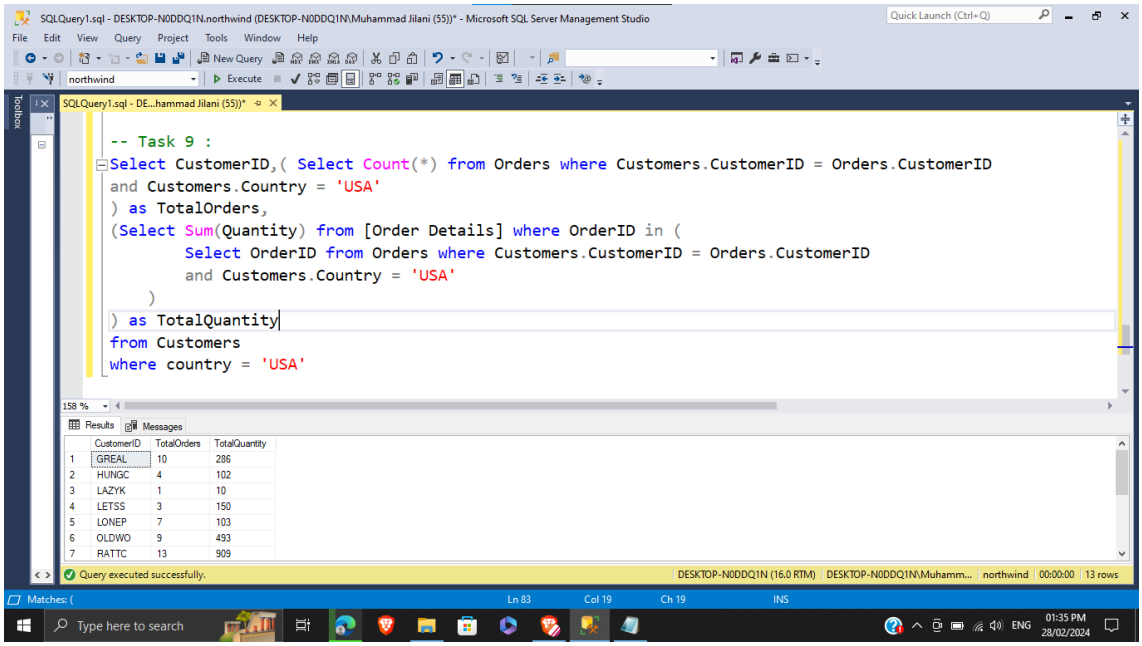
9.1 Question :

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

9.2 Query :

```
Select CustomerID,
(
Select Count(*)
from Orders
where Customers.CustomerID = Orders.CustomerID
and Customers.Country = 'USA'
) as TotalOrders,
(
Select Sum(Quantity)
from [Order Details]
where OrderID in
(
   Select OrderID
   from Orders
   where Customers.CustomerID = Orders.CustomerID
   and Customers.Country = 'USA'
)
) as TotalQuantity
from Customers
where country = 'USA'
```

9.3 Picture



10 Task 10

10.1 Question :

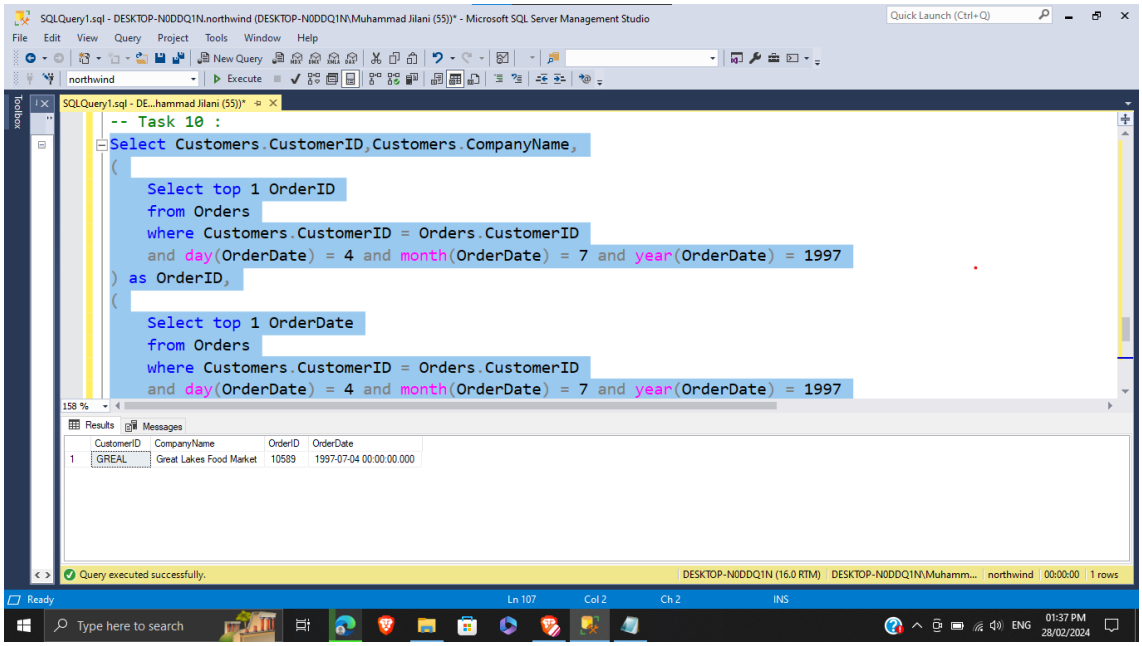
Write a query that returns all customers in the output, but matches them with their respective orders only if they were placed on July 04,1997.(CustomerID, CompanyName, OrderID, Orderdate)

10.2 Query :

```
Select Customers.CustomerID,Customers.CompanyName,
(
Select top 1 OrderID
from Orders
where Customers.CustomerID = Orders.CustomerID
and day(OrderDate) = 4 and month(OrderDate) = 7 and year(OrderDate) = 1997
) as OrderID,
(
Select top 1 OrderDate
from Orders
where Customers.CustomerID = Orders.CustomerID
```

```
and day(OrderDate) = 4 and month(OrderDate) = 7 and year(OrderDate) = 1997
) as OrderDate
from Customers
where CustomerID in
(
Select CustomerID
from Orders
where Customers.CustomerID = Orders.CustomerID
and day(OrderDate) = 4 and month(OrderDate) = 7 and year(OrderDate) = 1997
)
```

10.3 Picture



11 Task 11

11.1 Question :

Are there any employees who are older than their managers?

11.2 Query :

```
Yes, there are two employees who are older than their managers.
```

12 Task 12

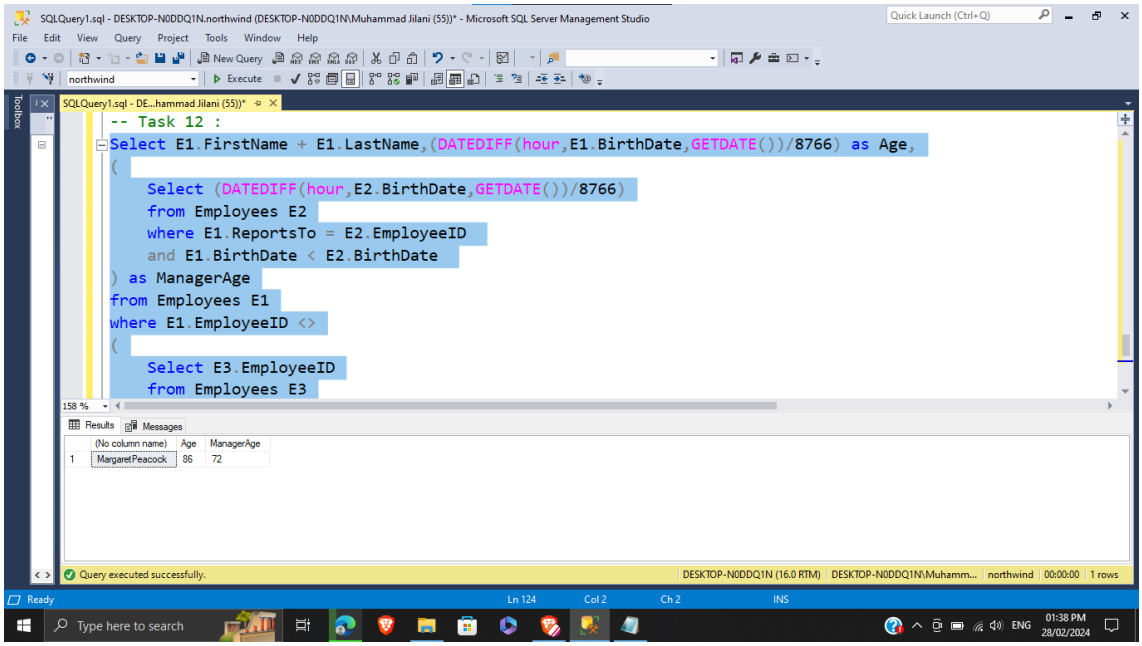
12.1 Question :

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

12.2 Query :

```
Select E1.FirstName + E1.LastName,(DATEDIFF(hour,E1.BirthDate,GETDATE())/8766) as Ag
(
Select (DATEDIFF(hour,E2.BirthDate,GETDATE())/8766)
from Employees E2
where E1.ReportsTo = E2.EmployeeID
and E1.BirthDate < E2.BirthDate
) as ManagerAge
from Employees E1
where E1.EmployeeID <>
(
Select E3.EmployeeID
from Employees E3
where E1.ReportsTo = E3.EmployeeID
and E1.BirthDate < E3.BirthDate
)
```

12.3 Picture



13 Task 13

13.1 Question :

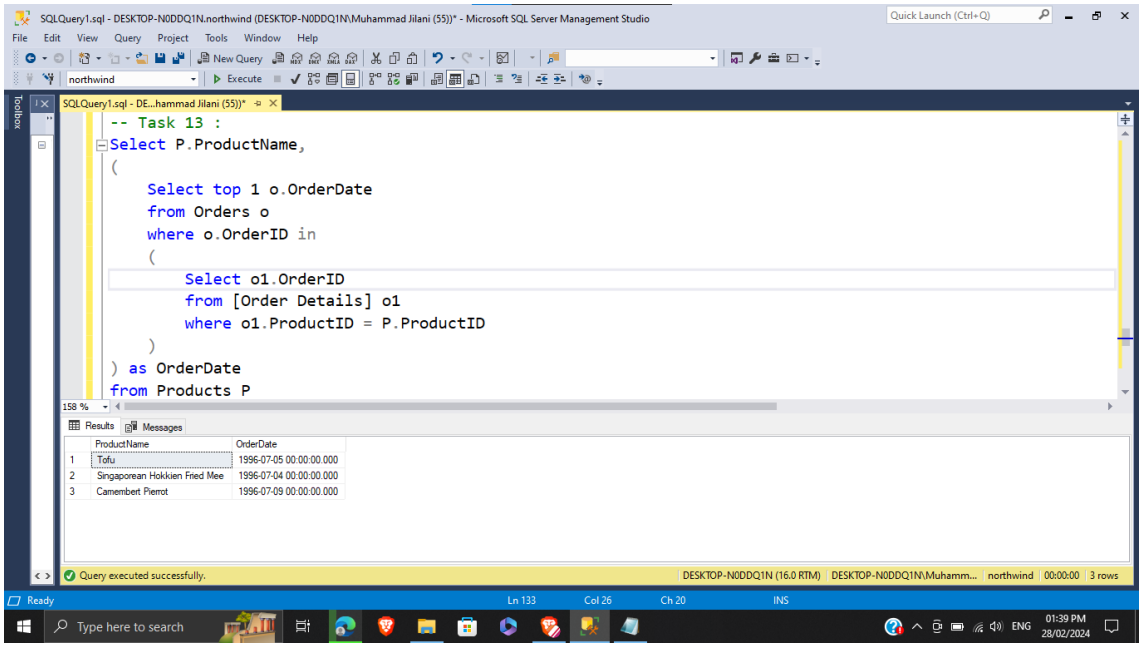
List the names of products which were ordered on 8th August 1997. (ProductName, OrderDate)

13.2 Query :

```
Select P.ProductName,
(
Select top 1 o.OrderDate
from Orders o
where o.OrderID in
(
Select o1.OrderID
  from [Order Details] o1
  where o1.ProductID = P.ProductID
  )
) as OrderDate
from Products P
```

```
where ProductID in
(
Select ProductID
from [Order Details]
where [Order Details].OrderID in
(
  Select Orders.OrderID
  from Orders
  where year(OrderDate) = 1997
  and month(OrderDate) = 8
  and day(OrderDate) = 8
  )
)
```

13.3 Picture



14 Task 14

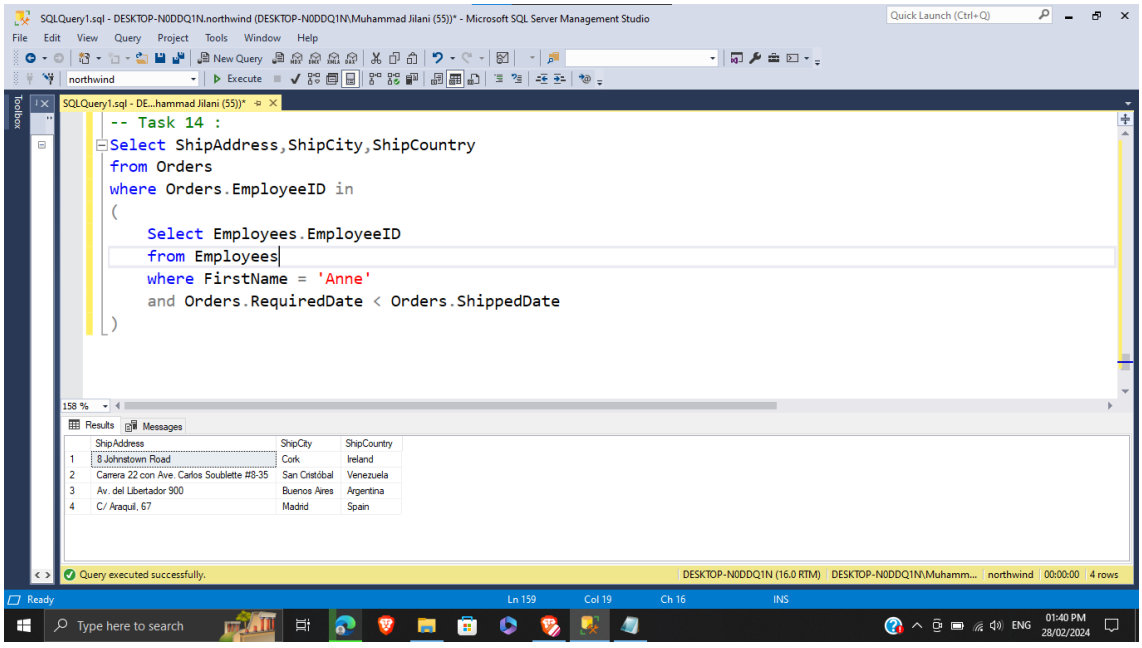
14.1 Question :

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,ShipCity,ShipCountry
from Orders
where Orders.EmployeeID in
(
Select Employees.EmployeeID
    from Employees
    where FirstName = 'Anne'
and Orders.RequiredDate < Orders.ShippedDate
)
```

14.3 Picture



15 Task 15

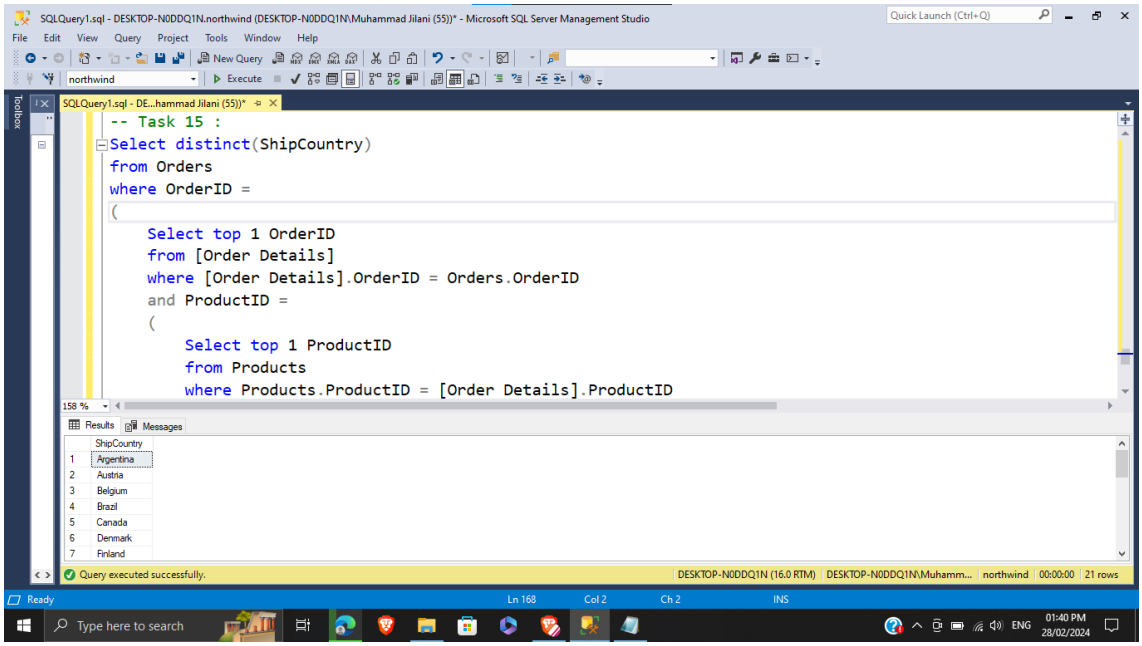
15.1 Question :

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

15.2 Query :

```
Select distinct(ShipCountry)
from Orders
where OrderID =
(
Select top 1 OrderID
from [Order Details]
where [Order Details].OrderID = Orders.OrderID
and ProductID =
(
  Select top 1 ProductID
  from Products
  where Products.ProductID = [Order Details].ProductID
  and CategoryID = 1
)
)
```

15.3 Picture


SQLQuery1.sql - DESKTOP-N0DDQ1N.northwind (DESKTOP-N0DDQ1N\Muhammad Jilani (55))* - Microsoft SQL Server Management Studio
File Edit View Query Project Tools Window Help
New Query
northwind
Execute
SQLQuery1.sql - DE...hammad Jilani (55))*
-- Task 15 :
Select distinct(ShipCountry)
from Orders
where OrderID =
(
Select top 1 OrderID
from [Order Details]
where [Order Details].OrderID = Orders.OrderID
and ProductID =
(
Select top 1 ProductID
from Products
where Products.ProductID = [Order Details].ProductID
158 %
Results
Messages
ShipCountry
1 Argentina
2 Austria
3 Belgium
4 Brazil
5 Canada
6 Denmark
7 Finland
Query executed successfully.
DESKTOP-N0DDQ1N (16.0 RTM)
DESKTOP-N0DDQ1N\Muhamm...
northwind
00:00:00
21 rows
Ready
Ln 168
Col 2
Ch 2
INS
Type here to search
ENG
01:40 PM
28/02/2024