NEPAL COLLEGE OF INFORMATION AND TECHNOLOGY

BALKUMARI, LALITPUR

DBMS

Assignment -5

BCA

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Year: 2022

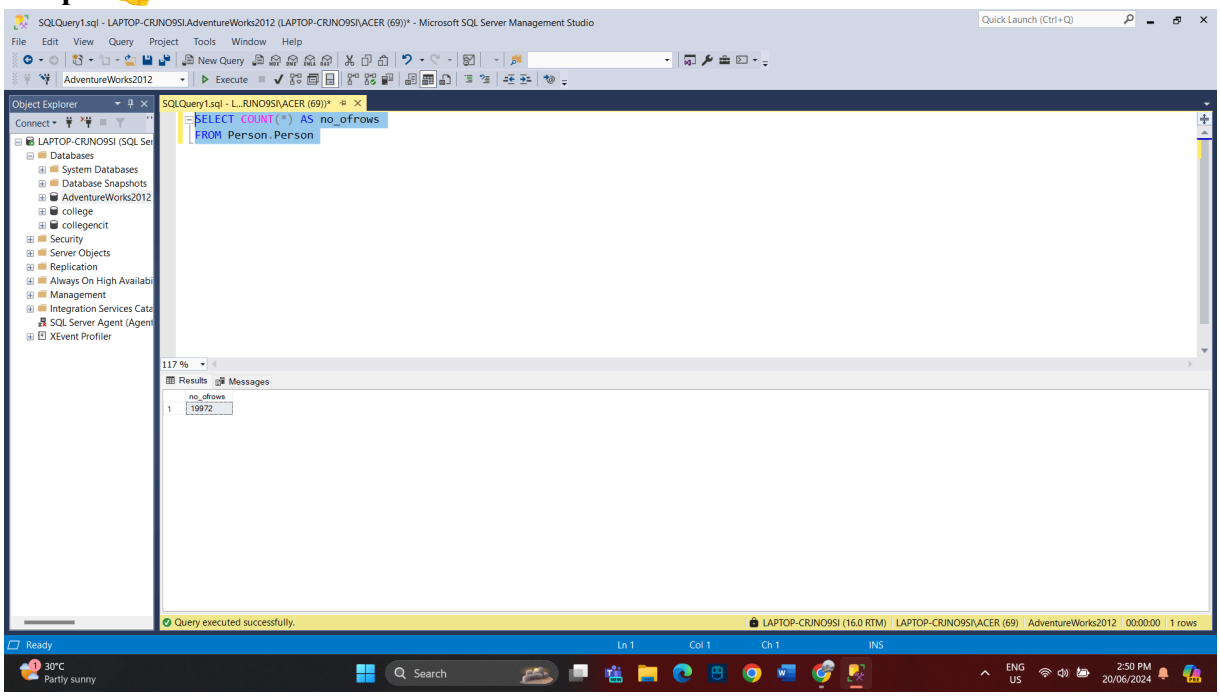
Aggregate Function Practice Problems

1) How many rows are in the Person.Person table? Use an aggregate function NOT "SELECT *".

SOURCE CODE:

```
SELECT COUNT(*) AS no_ofrows
FROM Person.Person
```

Out put 👍

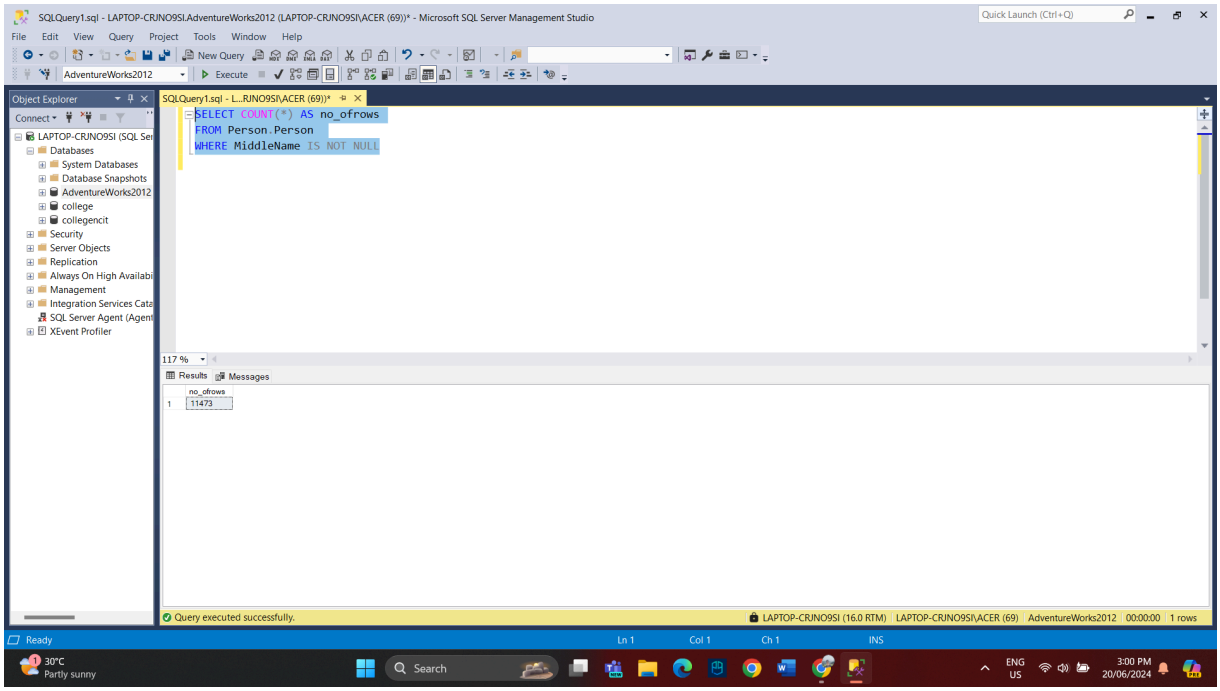


2) How many rows in the Person.Person table do not have a NULL value in the MiddleName column?

Source code:

```
SELECT COUNT(*) AS no_ofrows
FROM Person.Person
WHERE MiddleName IS NOT NULL
```

output:

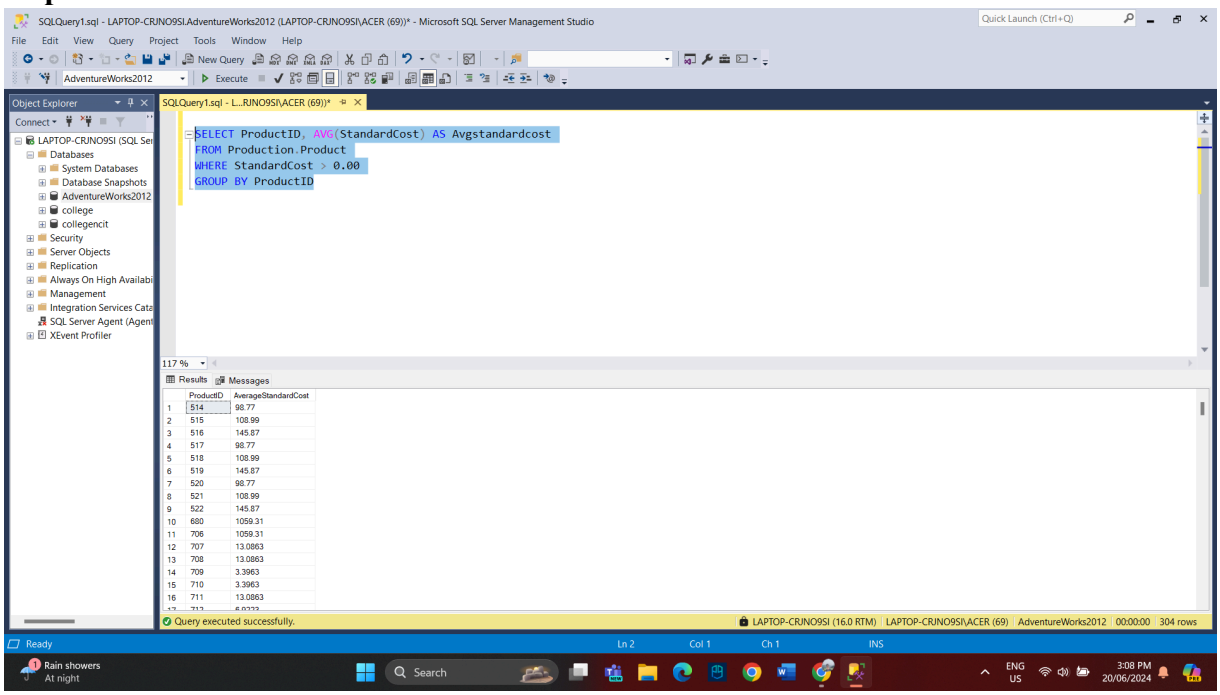


3) What is the average StandardCost (located in Production.Product) for each product where the StandardCost is greater than $0.00?

Source code:

```
SELECT ProductID, AVG(StandardCost) AS Avgstandardcost
FROM Production.Product
WHERE StandardCost > 0.00
GROUP BY ProductID
```

output:

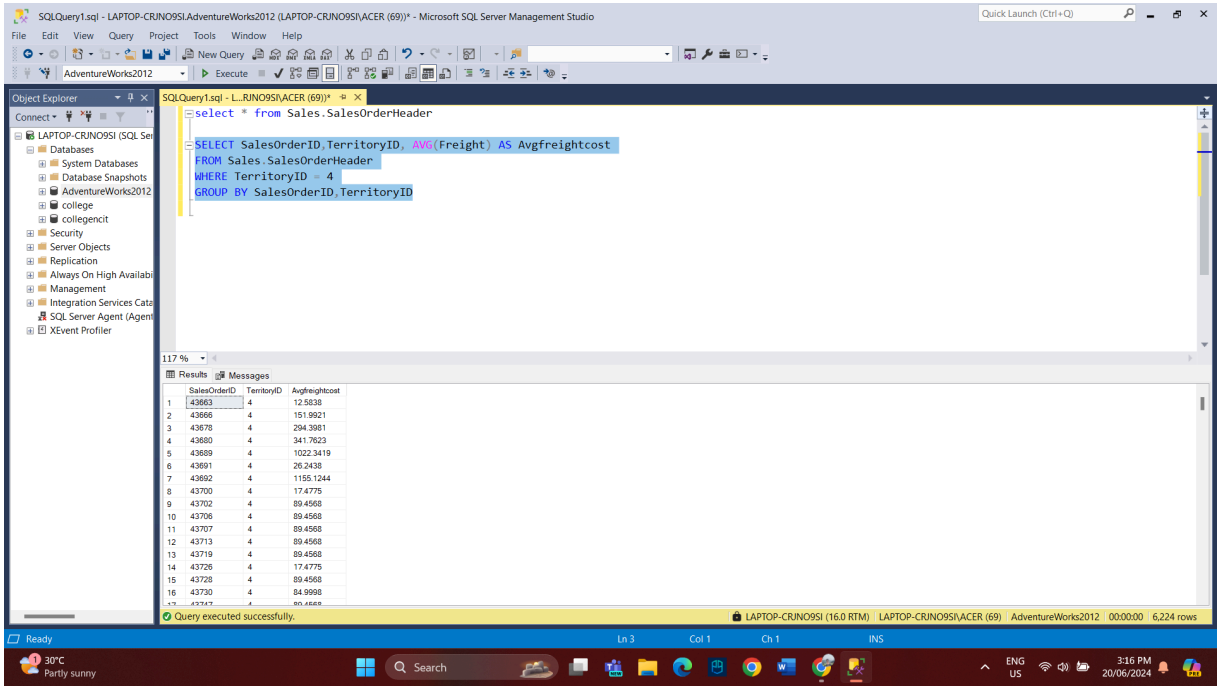


4) What is the average Freight amount for each sale (found in Sales.Sales OrderHeader) where the sale took place in TerritoryID 4?

Source code:

SELECT SalesOrderID,TerritoryID, AVG(Freight) AS Avgfreightcost
FROM Sales.SalesOrderHeader
WHERE TerritoryID = 4
GROUP BY SalesOrderID,TerritoryID

output:

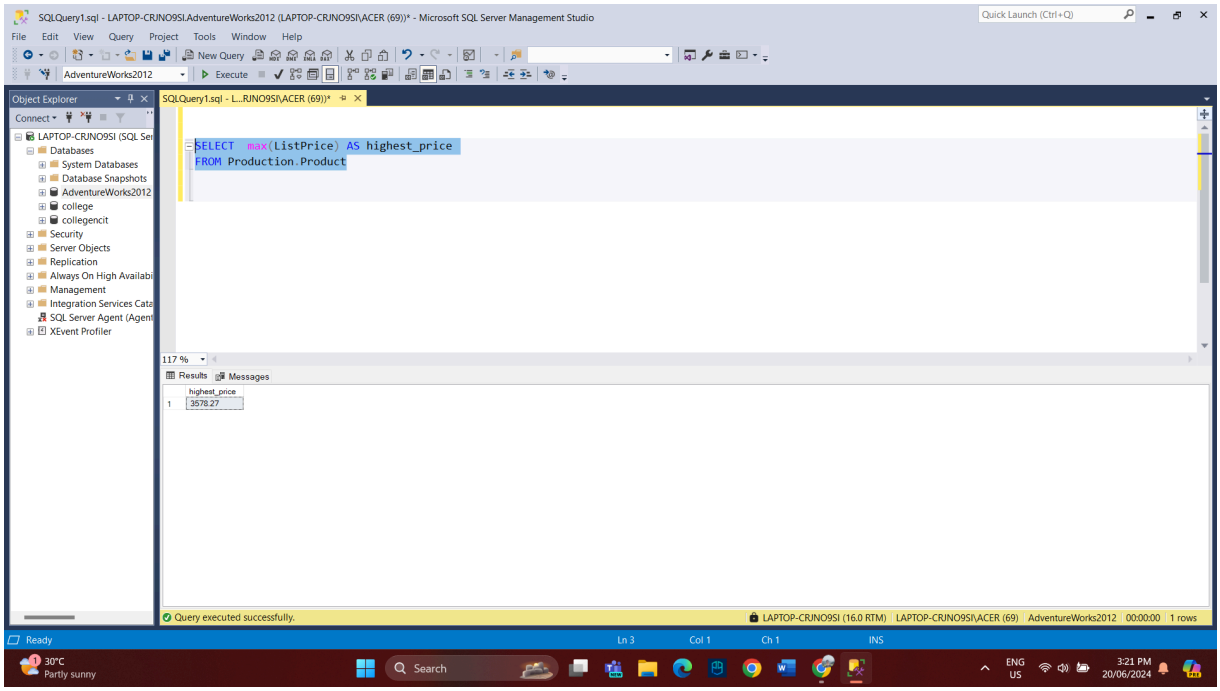


5) How expensive is the most expensive product, by ListPrice, in the table Production.Product?

Source code:

SELECT max(ListPrice) AS highest_price
FROM Production.Product

output:

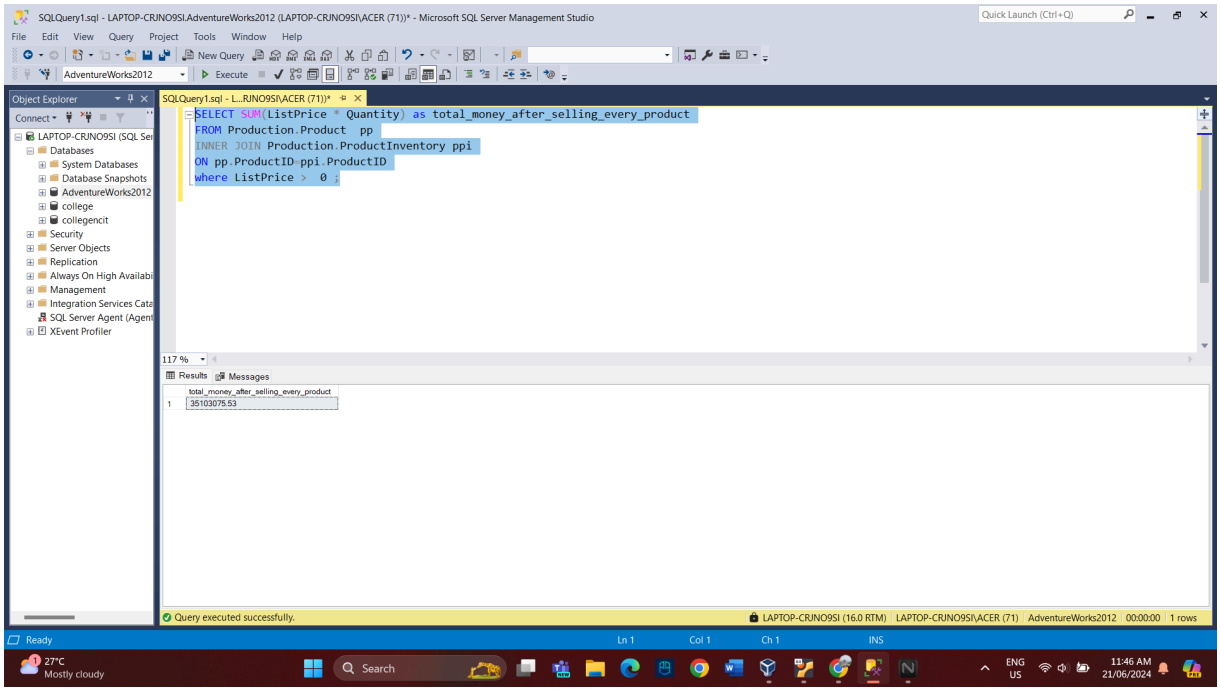


6) Join the Production.Product table and the Production.ProductInventory table for only the products that appear in both table. Use the ProductID as the joining column. Production.ProductInventory contains the quantity of each product (several rows can appear for each product to indicate the product appears in multiple locations). Your goal is to determine how much money we would earn if we sold every product for its list price for each product with a ListPrice greater than $0. That is, if you summed the product of each product's inventory by its list price, what would that value be? (Hint: This is intentionally challenging. You must use an aggregate function with a mathematical expression to accomplish your goal)

Source code:

```
SELECT SUM(ListPrice * Quantity) as total_money_after_selling_every_product
FROM Production.Product  pp
INNER JOIN Production.ProductInventory ppi
ON pp.ProductID=ppi.ProductID
where ListPrice >  0 ;
```

Output:



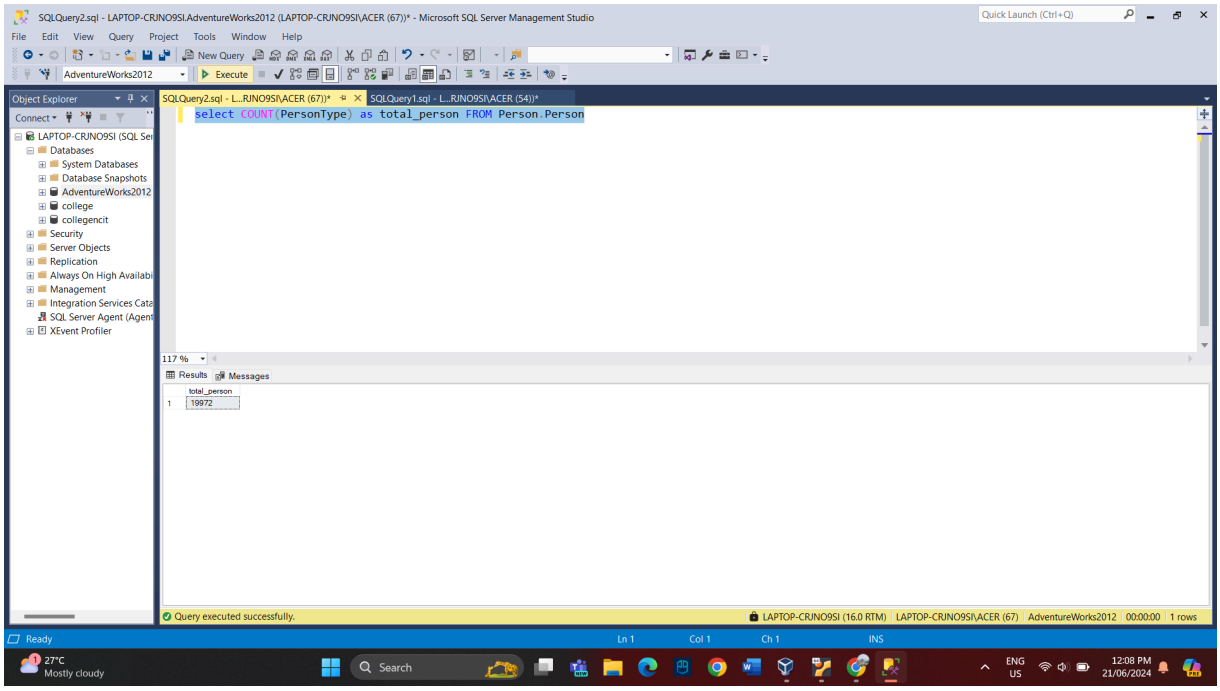
GROUP BY Clause Practice Problems

1) In the Person. Person table, how many people are associated with each PersonType?

Source code:

```
select COUNT(PersonType) as total_person FROM Person.Person
```

Output:

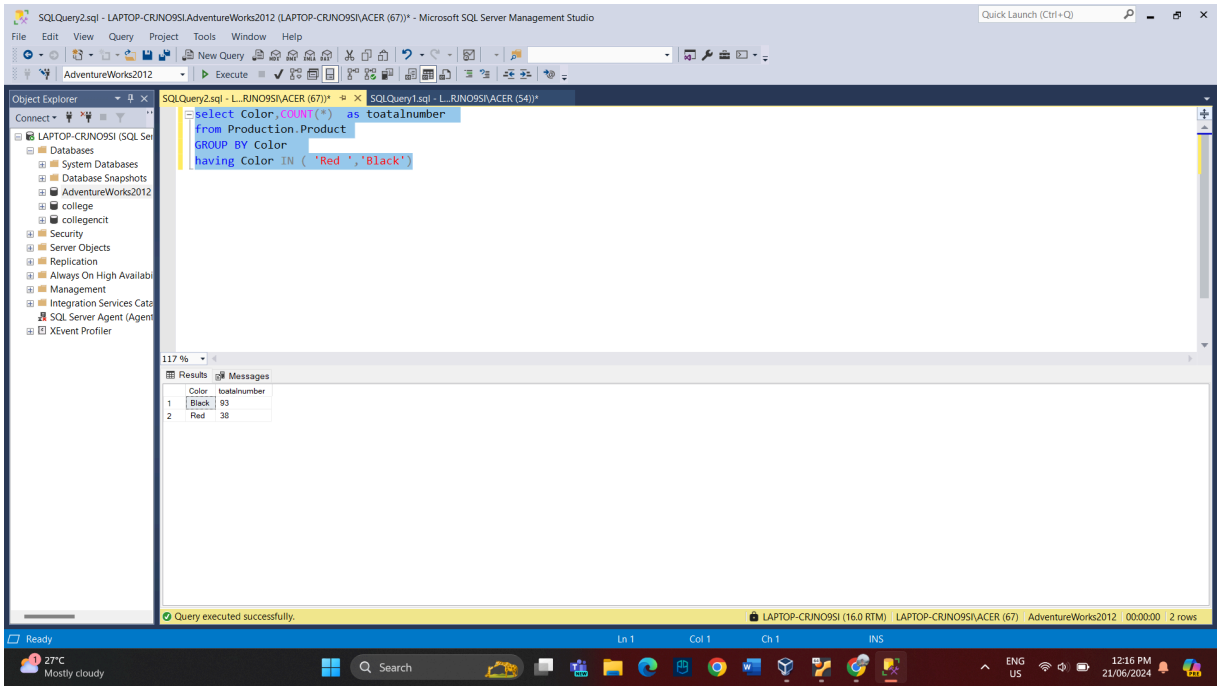


2) Using only one query, find out how many products in Production.Product are the color "red" and how many are "black".

Source code:

```
select Color,COUNT(*)  as toatalnumber
from Production.Product
GROUP BY Color
having Color IN ( 'Red ','Black')
```

Output:

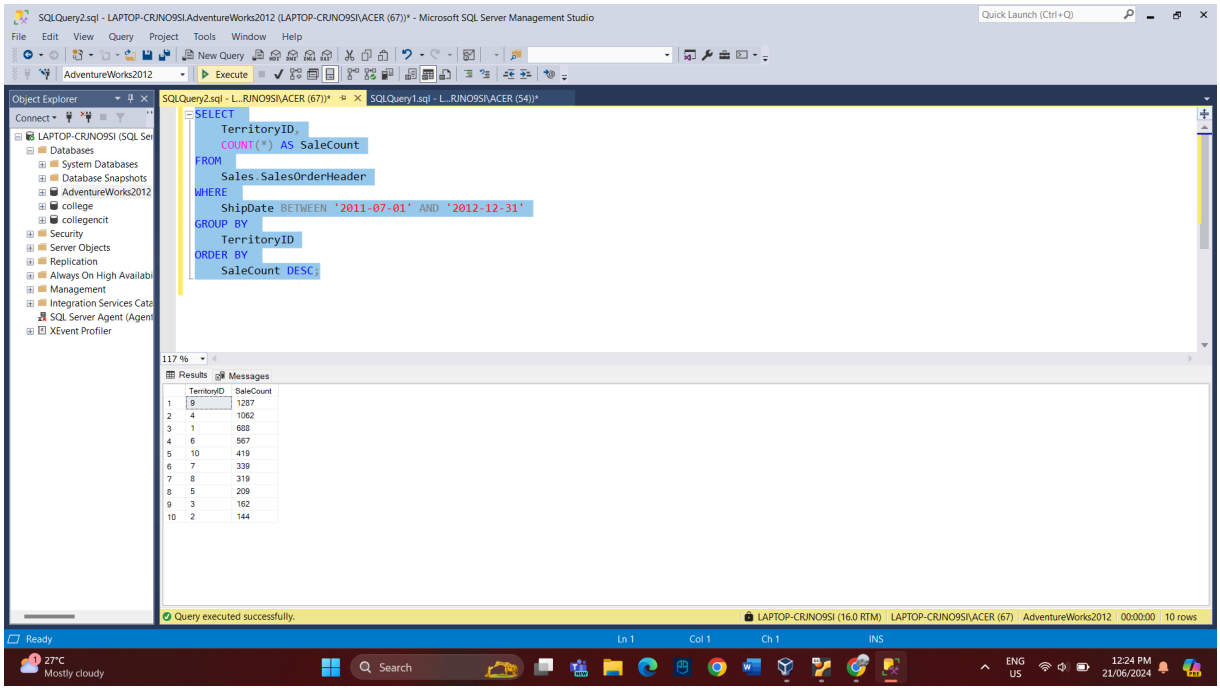


3) Using Sales. Sales OrderHeader, how many sales occurred in each territory between July 1, 2005 and December 31, 2006? Order the results by the sale count in descending order.

Source code:

```
SELECT
   TerritoryID,
   COUNT(*) AS SaleCount
FROM
   Sales.SalesOrderHeader
WHERE
   ShipDate BETWEEN '2011-07-01' AND '2012-12-31'
GROUP BY
   TerritoryID
ORDER BY
   SaleCount DESC;
```

Output:



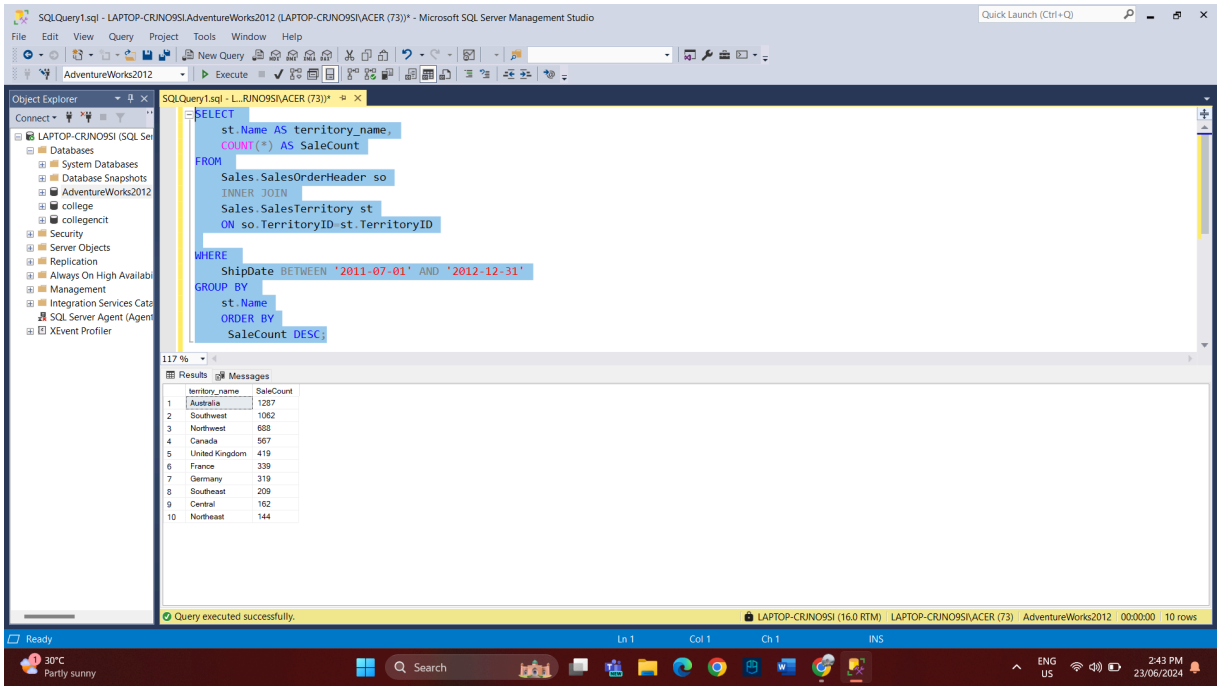
4) Expanding on the previous example, group the results not by the TerritoryID but by the name of the territory (found in the Sales.Sales Territory table).

Source code:

```
SELECT
   st.Name AS territory_name,
   COUNT(*) AS SaleCount
FROM
   Sales.SalesOrderHeader so
                                                INNER JOIN
                                                Sales.SalesTerritory st
                                                ON
so.TerritoryID=st.TerritoryID

WHERE
   ShipDate BETWEEN '2011-07-01' AND '2012-12-31'
GROUP BY
   st.Name
                                                ORDER BY
    SaleCount DESC;
```

Output:

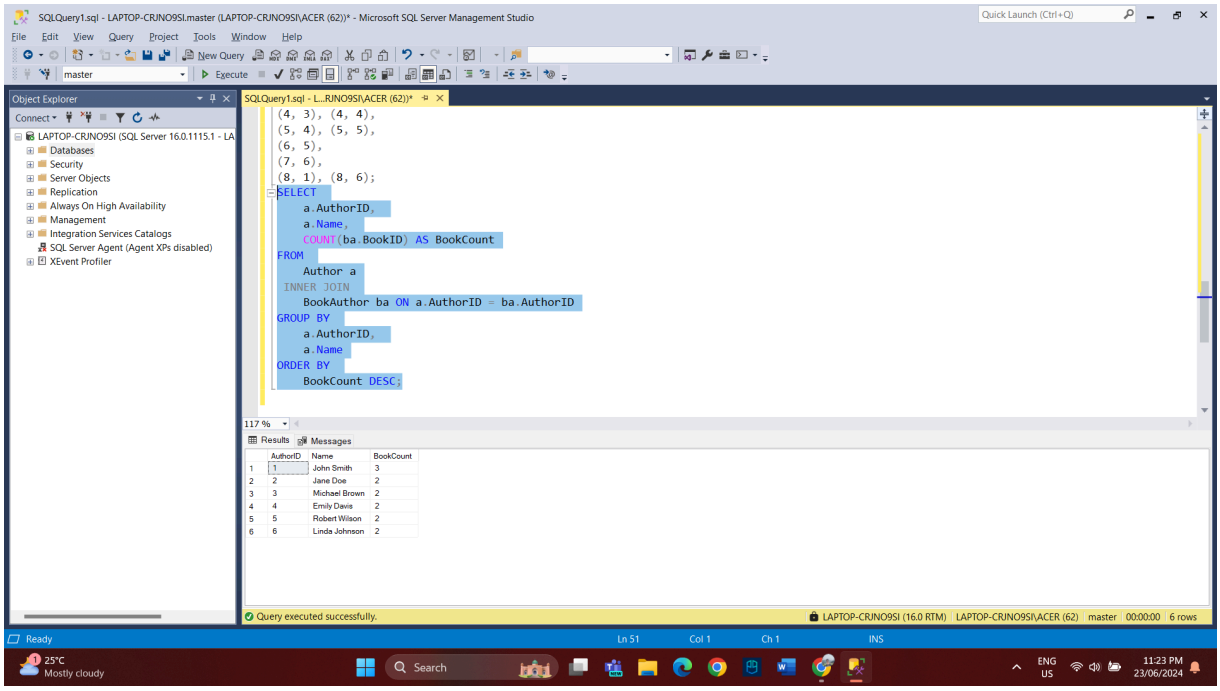


5) Using the Book, BookAuthor, Author and/or Publisher tables, identify how many books each author either wrote or co-authored.

Source code:

```
SELECT
   a.AuthorID,
   a.Name,
   COUNT(ba.BookID) AS BookCount
FROM
   Author a
 INNER JOIN
   BookAuthor ba ON a.AuthorID = ba.AuthorID
GROUP BY
   a.AuthorID,
   a.Name
ORDER BY
   BookCount DESC;
```

Output:



HAVING Clause Practice Problems

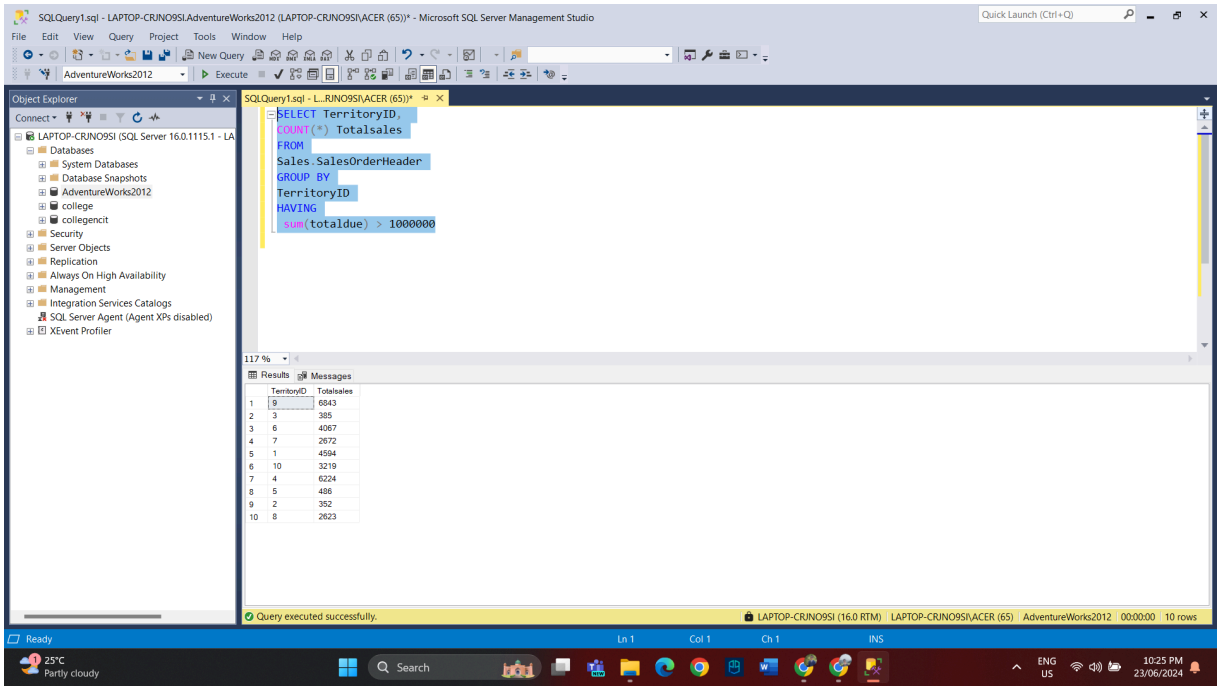
1

) Find the total sales by territory for all rows in the Sales.Sales OrderHeader table. Return only those territories that have exceeded $10 million in historical sales. Return the total sales and the TerritoryID column.

Source code:

```
SELECT TerritoryID,
COUNT(*) Totalsales
FROM
Sales.SalesOrderHeader
GROUP BY
TerritoryID
HAVING
 sum(totaldue) > 1000000
```

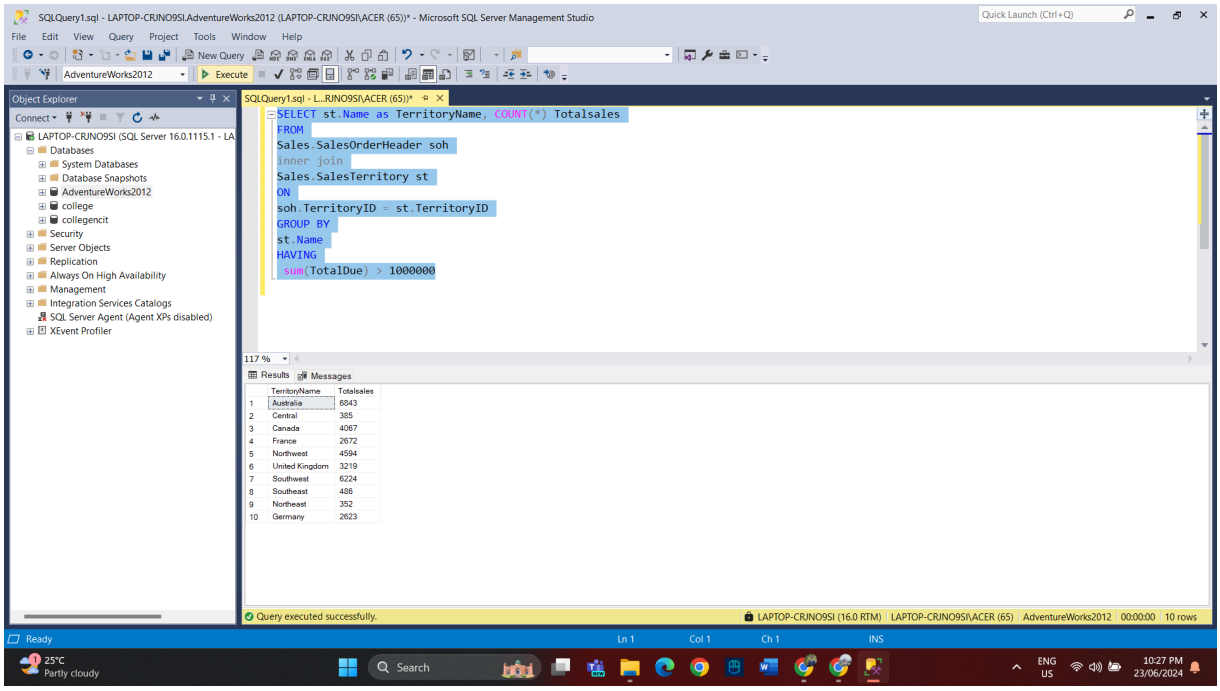
Output:



2) Using the query from the previous question, join to the Sales. Sales Territory table and replace the TerritoryID column with the territory's name.

Source code:SELECT st.Name as TerritoryName, COUNT(*) Totalsales
FROM
Sales.SalesOrderHeader soh
inner join
Sales.SalesTerritory st
ON
soh.TerritoryID = st.TerritoryID
GROUP BY
st.Name
HAVING
sum(TotalDue) > 1000000

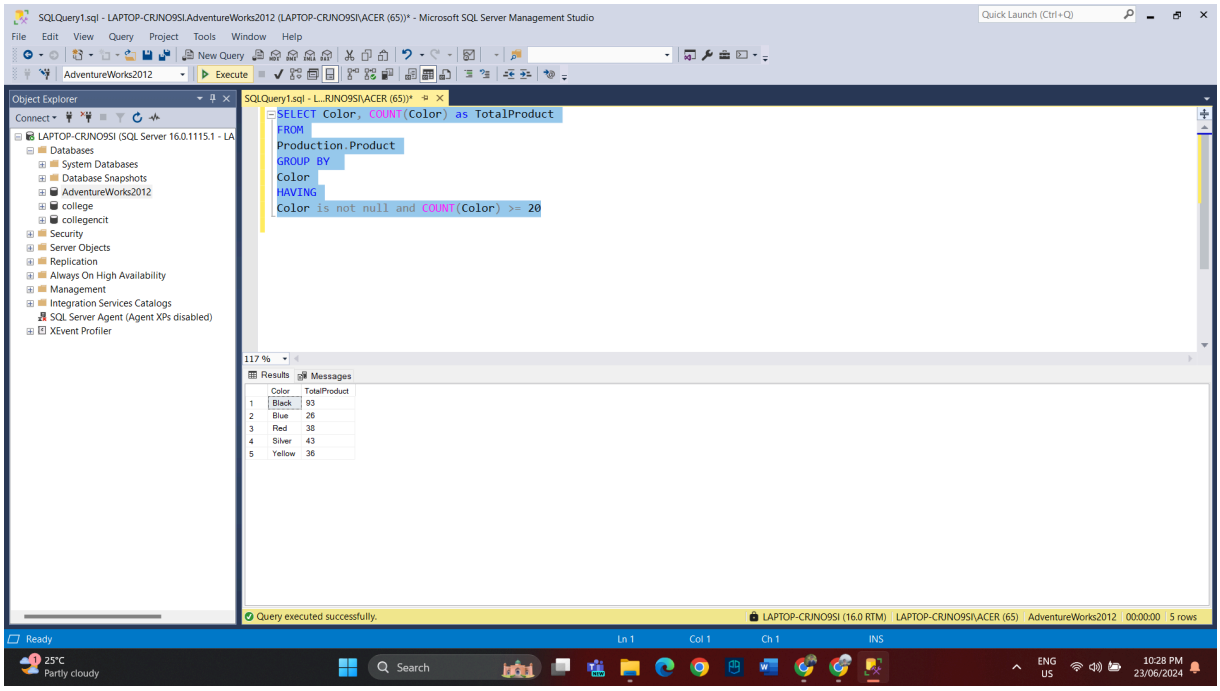
Output:



3) Using the Production.Product table, find how many products are associated with each color. Ignore all rows where the color has a NULL value. Once grouped, return to the results only those colors that had at least 20 products with that color.

Source code:SELECT Color, COUNT(Color) as TotalProduct
FROM
Production.Product
GROUP BY
Color
HAVING
Color is not null and COUNT(Color) >= 20

Output:

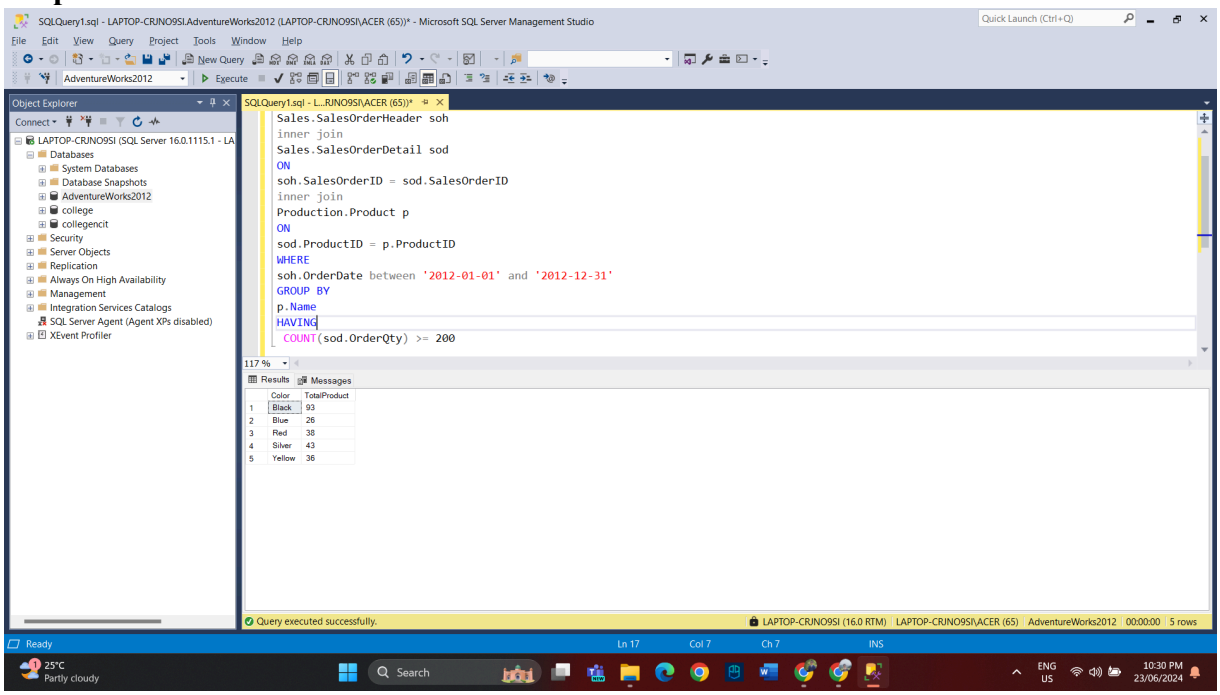


4) Starting with the Sales.SalesOrderHeader table, join to the Sales.SalesOrderDetail table. This table contains the line item details associated with each sale. From Sales.Sales OrderDetail, join to the Production.Product table. Return the Name column from Production.Product and assign it the column alias "Product Name". For each product, find out how many of each product was ordered for all orders that occurred in 2006. Only output those products where at least 200 were ordered.

Source code:

```
SELECT
p.Name 'Product Name', COUNT(sod.OrderQty) TotalOrder
FROM
Sales.SalesOrderHeader soh
inner join
Sales.SalesOrderDetail sod
ON
soh.SalesOrderID = sod.SalesOrderID
inner join
Production.Product p
ON
sod.ProductID = p.ProductID
WHERE
soh.OrderDate between '2012-01-01' and '2012-12-31'
GROUP BY
p.Name
HAVING
 COUNT(sod.OrderQty) >= 200
```

Output:



5) Find the first and last name of each customer who has placed at least 6 orders between July 1, 2005 and December 31, 2006. Order your results by the number of orders placed in descending order. (Hint: You will need to join to three tables Sales.Sales OrderHeader, Sales. Customer, and Person.Person. You will use every clause to complete this query).

Source code:

```
SELECT
 p.FirstName,
 p.LastName,
 COUNT(soh.SalesOrderID) TotalOrder
FROM
 Sales.SalesOrderHeader soh
inner join
 Sales.Customer
ON
soh.CustomerID = c.CustomerID
inner join
 Person.Person p
ON
c.PersonID = p.BusinessEntityID
WHERE
 soh.OrderDate between '2012-07-01' and '2013-12-31'
GROUP BY
 p.FirstName,
 p.LastName
HAVING
 COUNT(soh.SalesOrderID) >= 6
ORDER BY
```

TotalOrder DESC

Output: