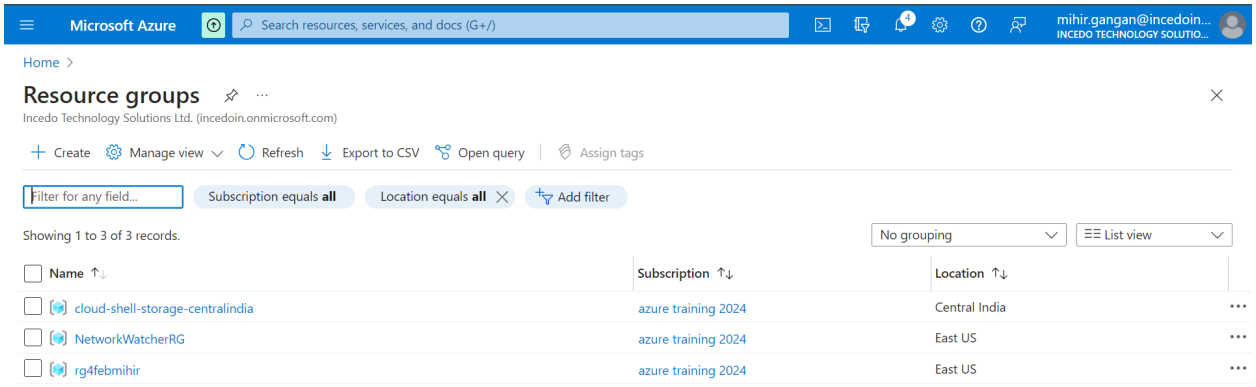
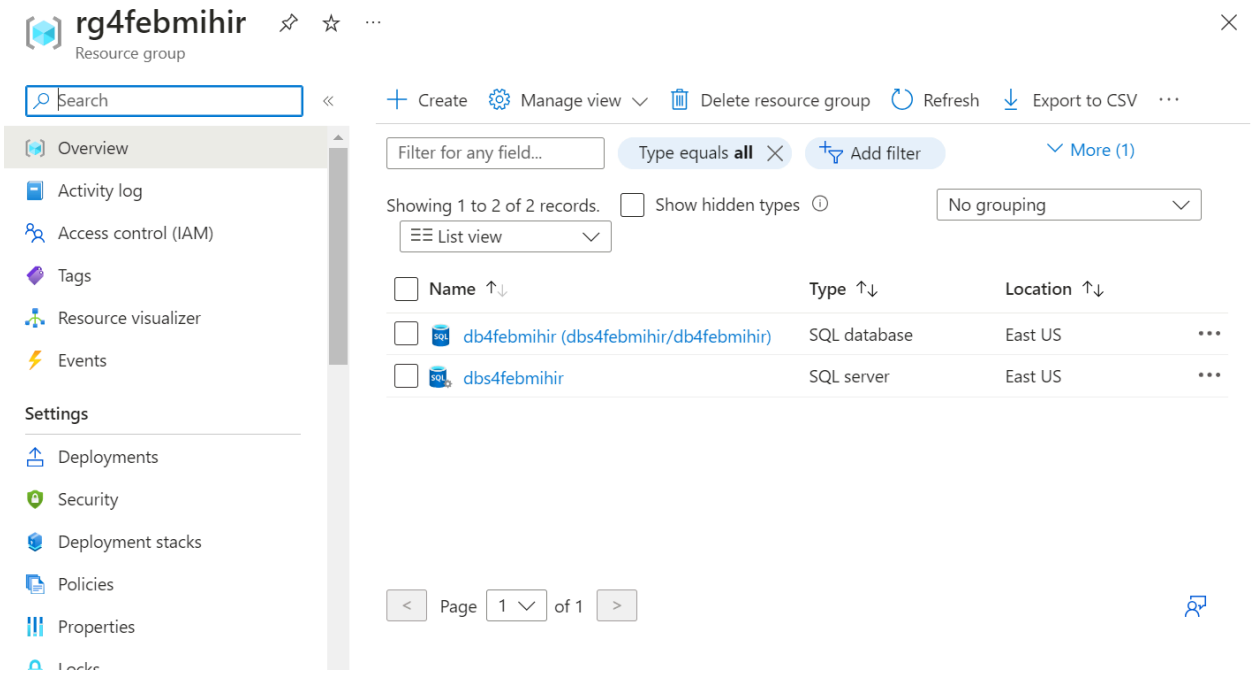
# Module 1:

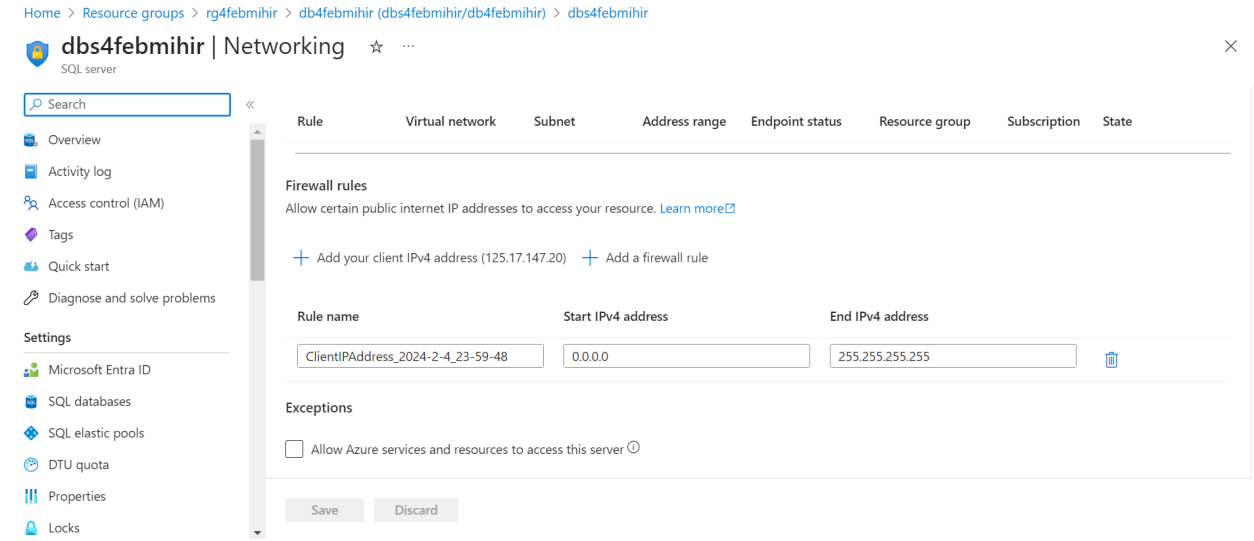
## Create resource group



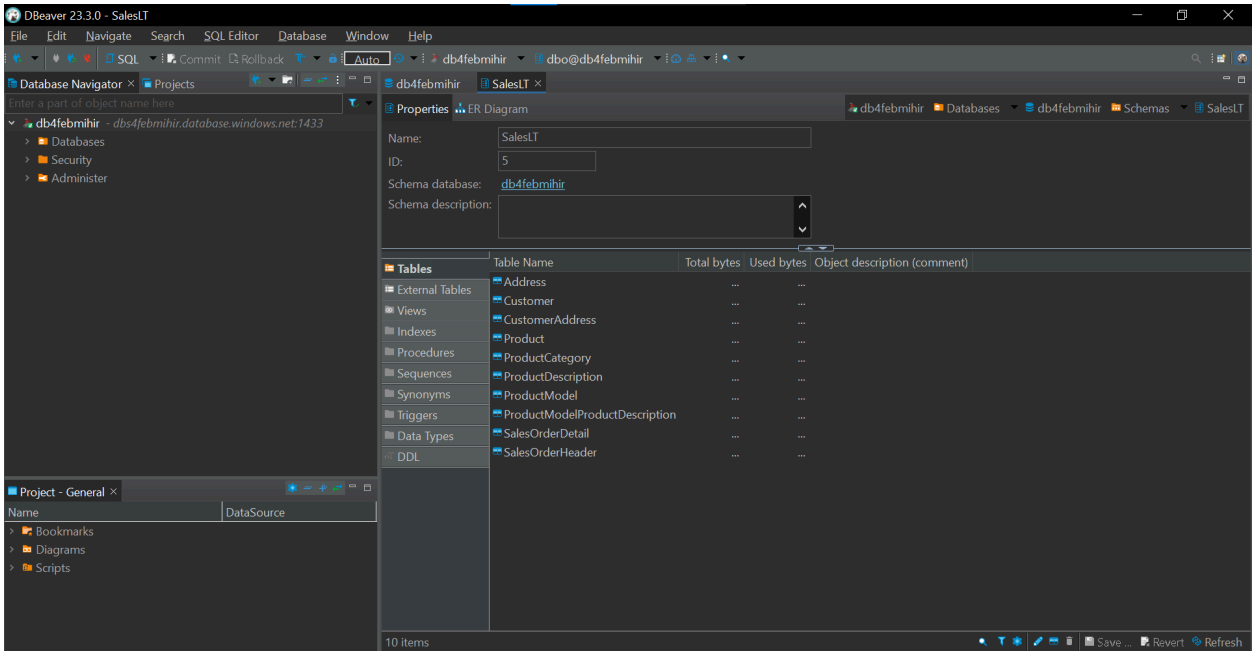

## Create sql server and sql database (sample adventureworks)



## Change firewall settings to allow access to database from dbeaver



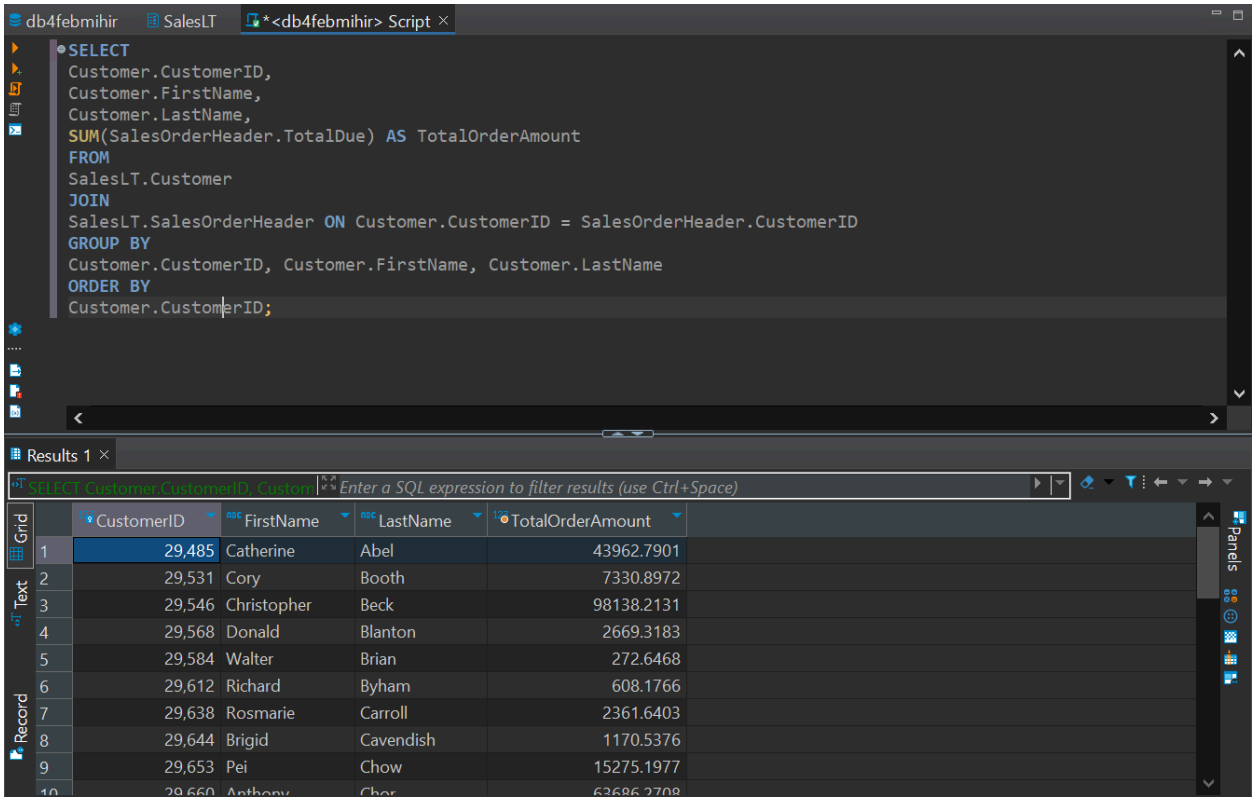

## Open dbeaver and connect database



# Module 2 :

**1. Retrieve a list of customers along with their total order amounts**

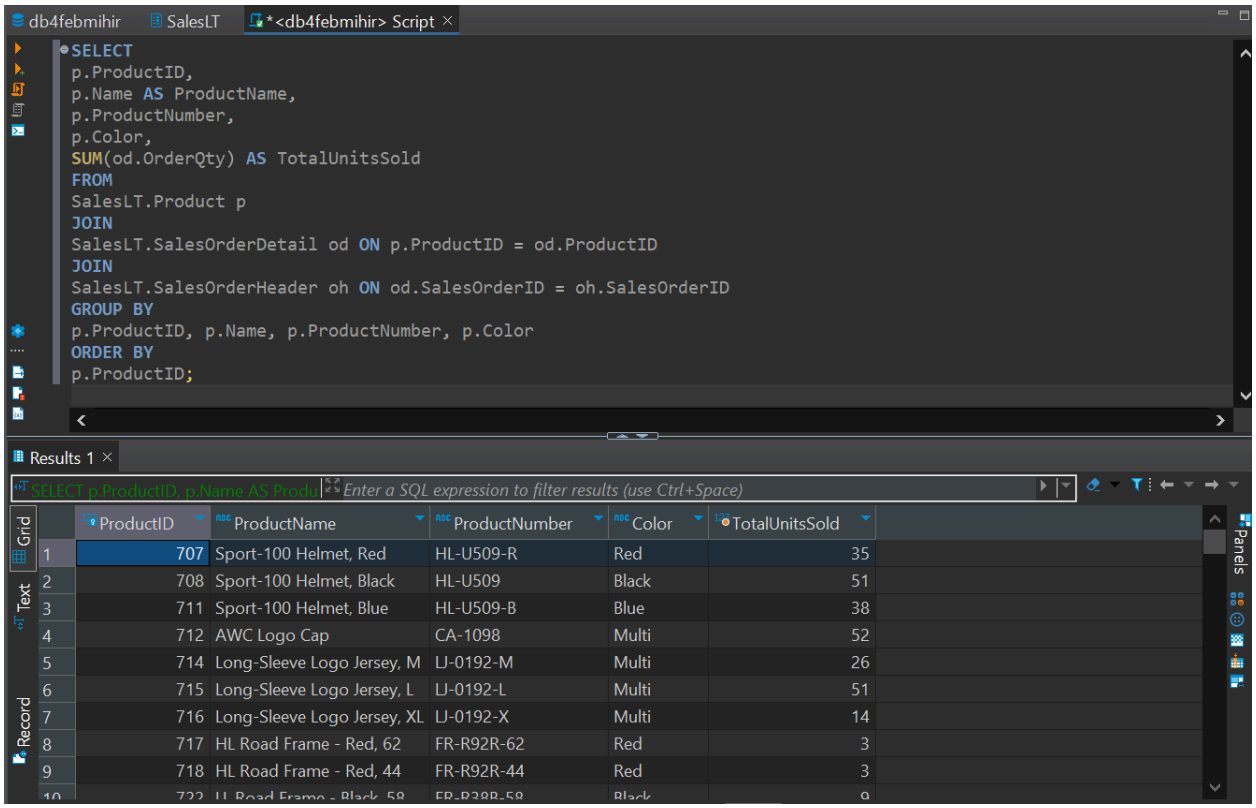
```
SELECT
	Customer.CustomerID,
	Customer.FirstName,
	Customer.LastName,
	SUM(SalesOrderHeader.TotalDue) AS TotalOrderAmount
FROM
	SalesLT.Customer
JOIN
	SalesLT.SalesOrderHeader ON Customer.CustomerID = SalesOrderHeader.CustomerID
GROUP BY
	Customer.CustomerID, Customer.FirstName, Customer.LastName
ORDER BY
	Customer.CustomerID;
```




**2. Display product information along with the number of units sold for each product.**

```
SELECT
```

```
        p.ProductID,
        p.Name AS ProductName,
        p.ProductNumber,
        p.Color,
        SUM(od.OrderQty) AS TotalUnitsSold
FROM
        SalesLT.Product p
JOIN
        SalesLT.SalesOrderDetail od ON p.ProductID = od.ProductID
JOIN
        SalesLT.SalesOrderHeader oh ON od.SalesOrderID = oh.SalesOrderID
GROUP BY
        p.ProductID, p.Name, p.ProductNumber, p.Color
ORDER BY
        p.ProductID;
```



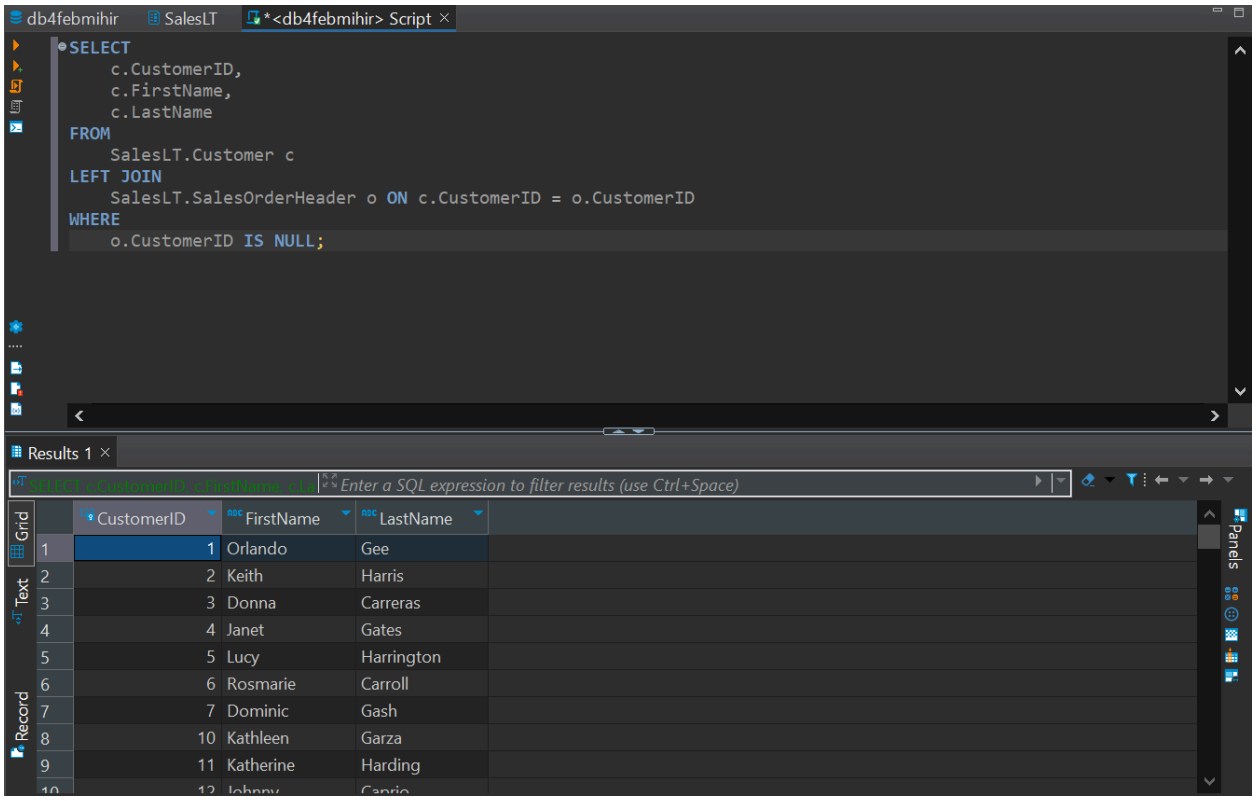

| | ProductID | ProductName | ProductNumber | Color | TotalUnitsSold |
|---|---|---|---|---|---|
| 1 | 707 | Sport-100 Helmet, Red | HL-U509-R | Red | 35 |
| 2 | 708 | Sport-100 Helmet, Black | HL-U509 | Black | 51 |
| 3 | 711 | Sport-100 Helmet, Blue | HL-U509-B | Blue | 38 |
| 4 | 712 | AWC Logo Cap | CA-1098 | Multi | 52 |
| 5 | 714 | Long-Sleeve Logo Jersey, M | LJ-0192-M | Multi | 26 |
| 6 | 715 | Long-Sleeve Logo Jersey, L | LJ-0192-L | Multi | 51 |
| 7 | 716 | Long-Sleeve Logo Jersey, XL | LJ-0192-X | Multi | 14 |
| 8 | 717 | HL Road Frame - Red, 62 | FR-R92R-62 | Red | 3 |
| 9 | 718 | HL Road Frame - Red, 44 | FR-R92R-44 | Red | 3 |

**3. Find employees who have the same manager** - Data insufficient

**4. List all customers who have never placed an order.**

```
SELECT
        c.CustomerID,
        c.FirstName,
```

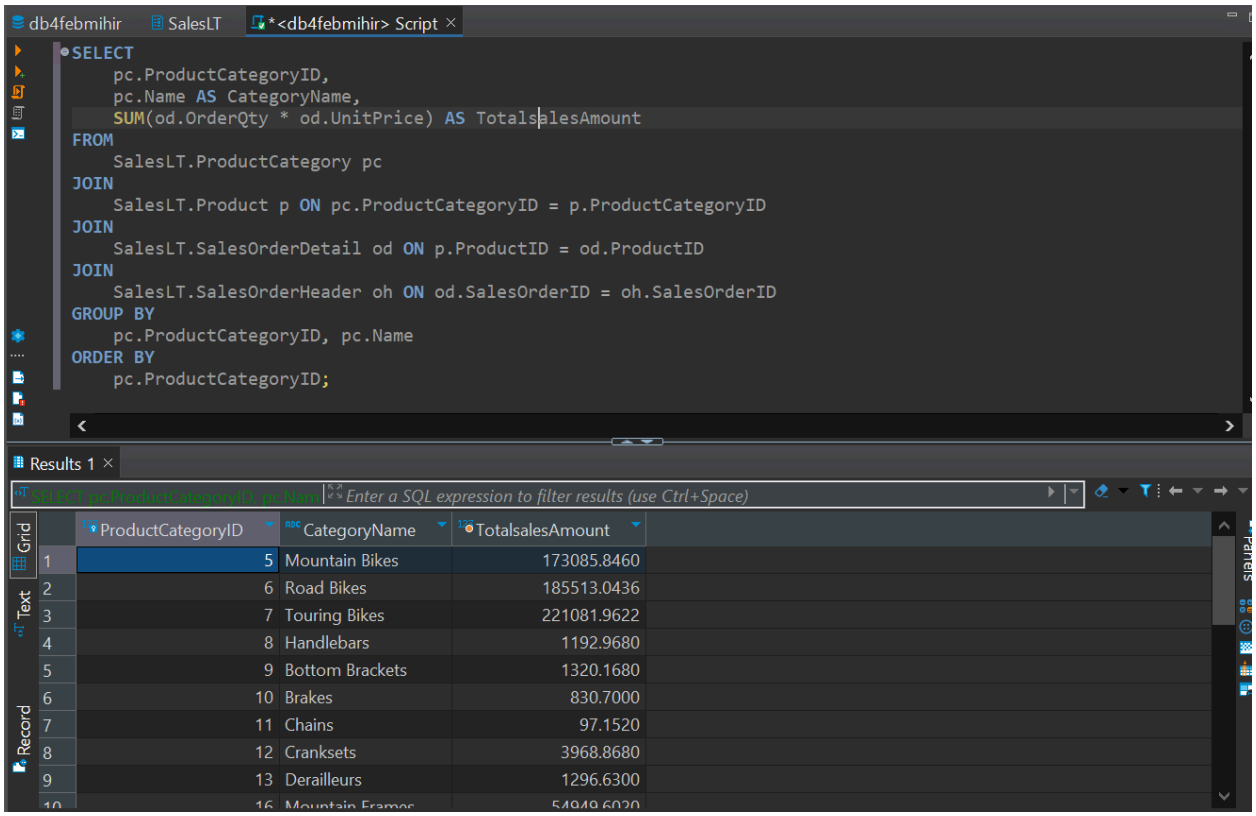
```
    c.LastName
FROM
    SalesLT.Customer c
LEFT JOIN
    SalesLT.SalesOrderHeader o ON c.CustomerID = o.CustomerID
WHERE
    o.CustomerID IS NULL;
```




**5. Retrieve the total sales amount for each product category.**

```
SELECT
    pc.ProductCategoryID,
    pc.Name AS CategoryName,
    SUM(od.OrderQty * od.UnitPrice) AS TotalsalesAmount
FROM
    SalesLT.ProductCategory pc
JOIN
    SalesLT.Product p ON pc.ProductCategoryID = p.ProductCategoryID
JOIN
    SalesLT.SalesOrderDetail od ON p.ProductID = od.ProductID
JOIN
    SalesLT.SalesOrderHeader oh ON od.SalesOrderID = oh.SalesOrderID
GROUP BY
```

```
    pc.ProductCategoryID, pc.Name
ORDER BY
    pc.ProductCategoryID;
```

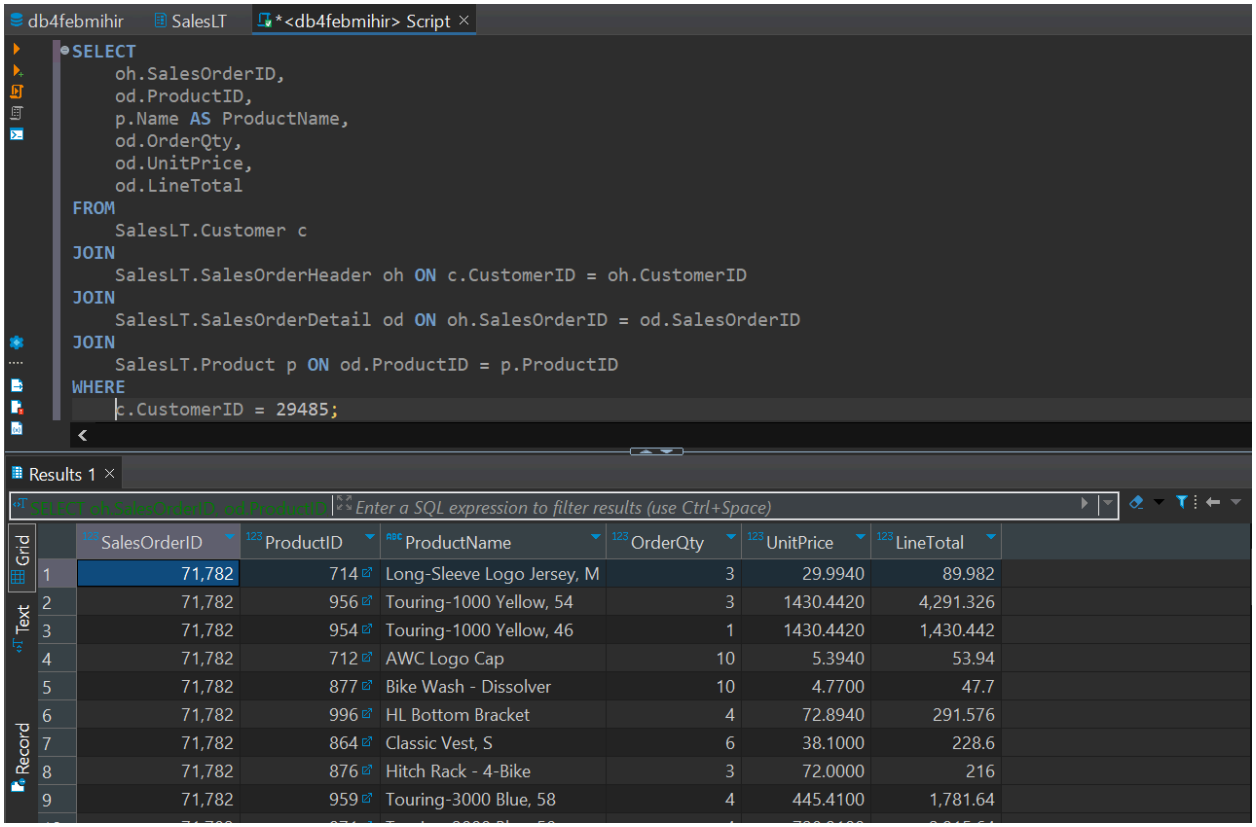



**6. Display the names of employees and their direct managers** - Data insufficient.

**7. Show the order details with product names for a specific customer**

```
SELECT
    oh.SalesOrderID,
    od.ProductID,
    p.Name AS ProductName,
    od.OrderQty,
    od.UnitPrice,
    od.LineTotal
FROM
    SalesLT.Customer c
JOIN
    SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
JOIN
    SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
JOIN
    SalesLT.Product p ON od.ProductID = p.ProductID
```

```
WHERE
        c.CustomerID = 29485;
```




**8. List customers who have made purchases in the last 30 days.**

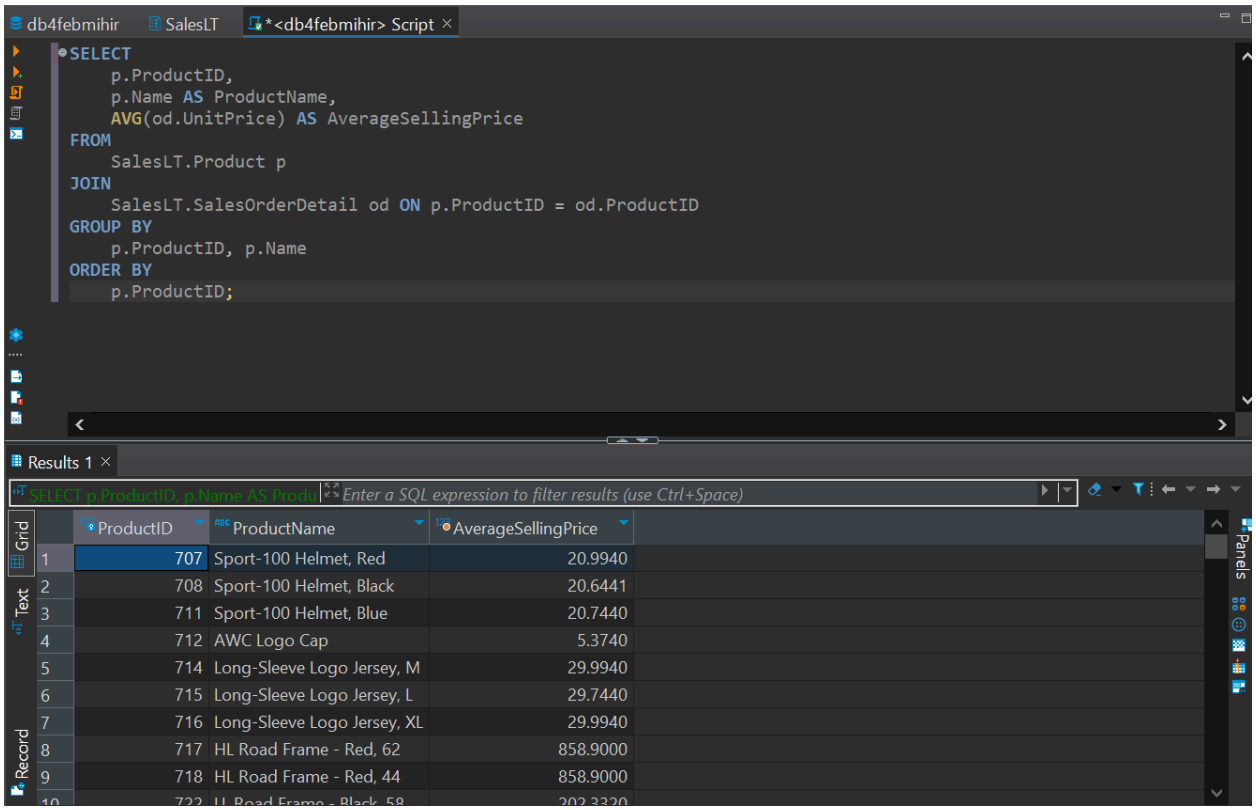
```
SELECT DISTINCT
        c.CustomerID,
        c.FirstName,
        c.LastName
FROM
        SalesLT.Customer c
JOIN
        SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
WHERE
        oh.OrderDate >= DATEADD(day, -30, GETDATE());
```

**9. Find employees who do not have any direct reports** - Data insufficient

**10. Retrieve all products along with their average selling prices**

```
SELECT
        p.ProductID,
        p.Name AS ProductName,
```

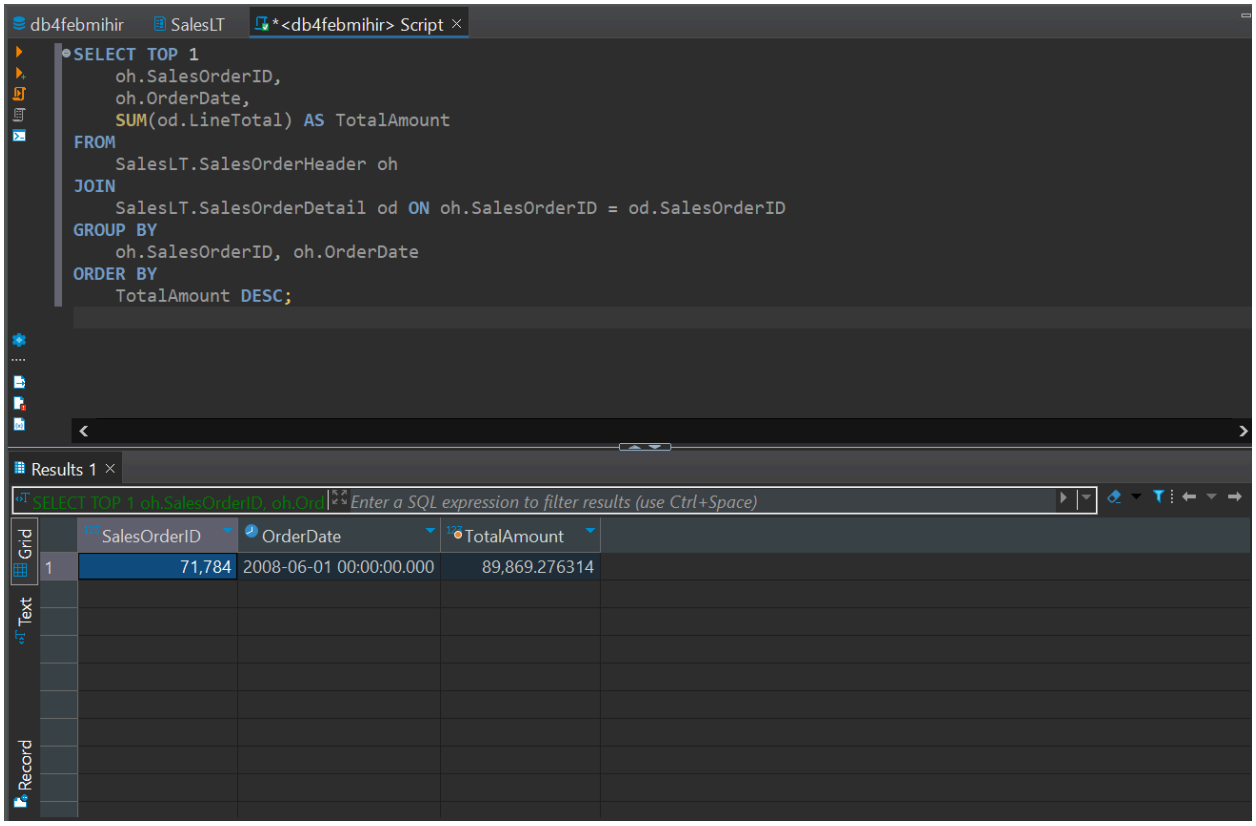
```
    AVG(od.UnitPrice) AS AverageSellingPrice
FROM
    SalesLT.Product p
JOIN
    SalesLT.SalesOrderDetail od ON p.ProductID = od.ProductID
GROUP BY
    p.ProductID, p.Name
ORDER BY
    p.ProductID;
```




| | ProductID | ProductName | AverageSellingPrice |
|---|---|---|---|
| 1 | 707 | Sport-100 Helmet, Red | 20.9940 |
| 2 | 708 | Sport-100 Helmet, Black | 20.6441 |
| 3 | 711 | Sport-100 Helmet, Blue | 20.7440 |
| 4 | 712 | AWC Logo Cap | 5.3740 |
| 5 | 714 | Long-Sleeve Logo Jersey, M | 29.9940 |
| 6 | 715 | Long-Sleeve Logo Jersey, L | 29.7440 |
| 7 | 716 | Long-Sleeve Logo Jersey, XL | 29.9940 |
| 8 | 717 | HL Road Frame - Red, 62 | 858.9000 |
| 9 | 718 | HL Road Frame - Red, 44 | 858.9000 |

**11. Find the order with the highest total amount.**

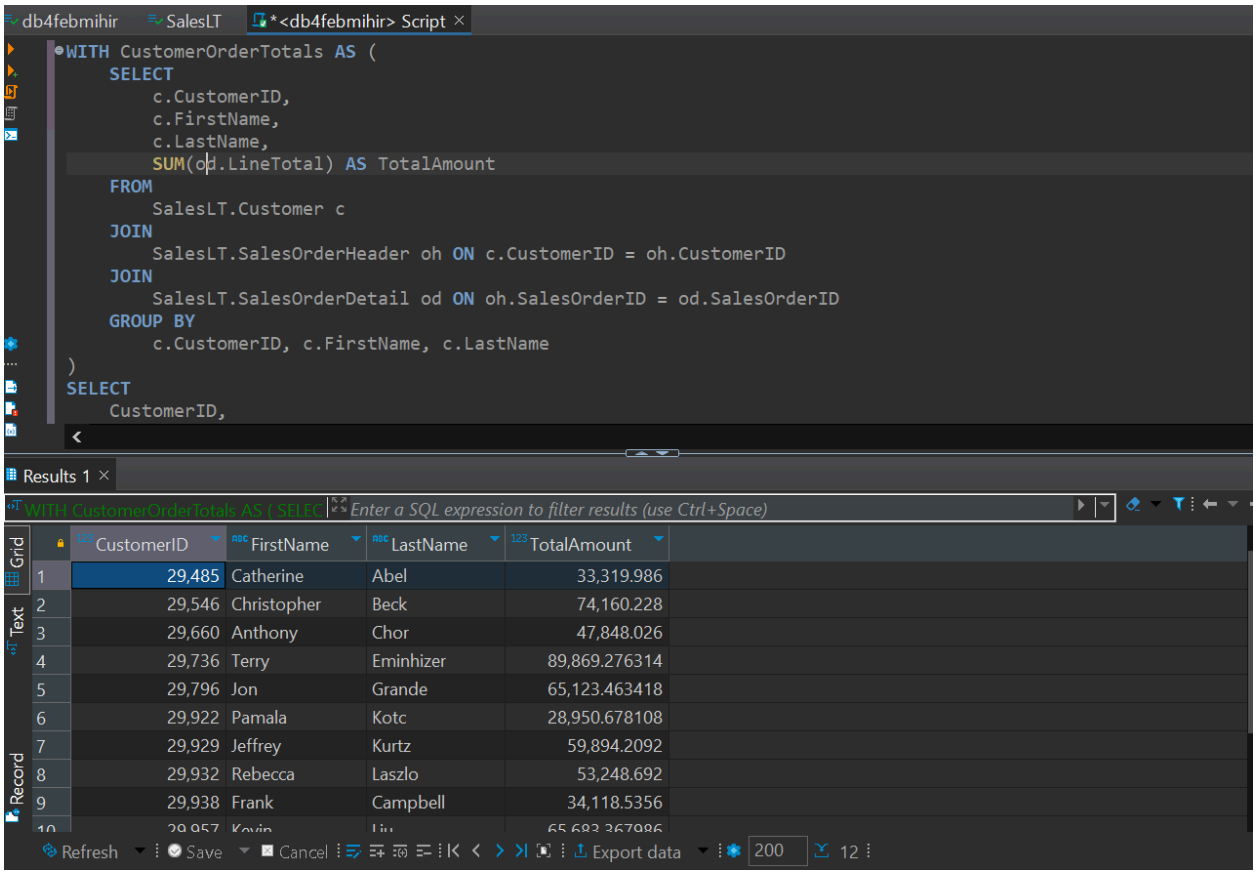
```
SELECT TOP 1
    oh.SalesOrderID,
    oh.OrderDate,
    SUM(od.LineTotal) AS TotalAmount
FROM
    SalesLT.SalesOrderHeader oh
JOIN
    SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
GROUP BY
    oh.SalesOrderID, oh.OrderDate
ORDER BY
    TotalAmount DESC;
```




**12. Display customers who have placed orders with a total amount greater than the average**

```
WITH CustomerOrderTotals AS (
	SELECT
		c.CustomerID,
		c.FirstName,
		c.LastName,
		SUM(od.LineTotal) AS TotalAmount
	FROM
		SalesLT.Customer c
	JOIN
		SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
	JOIN
		SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
	GROUP BY
		c.CustomerID, c.FirstName, c.LastName
)
SELECT
	CustomerID,
	FirstName,
	LastName,
```

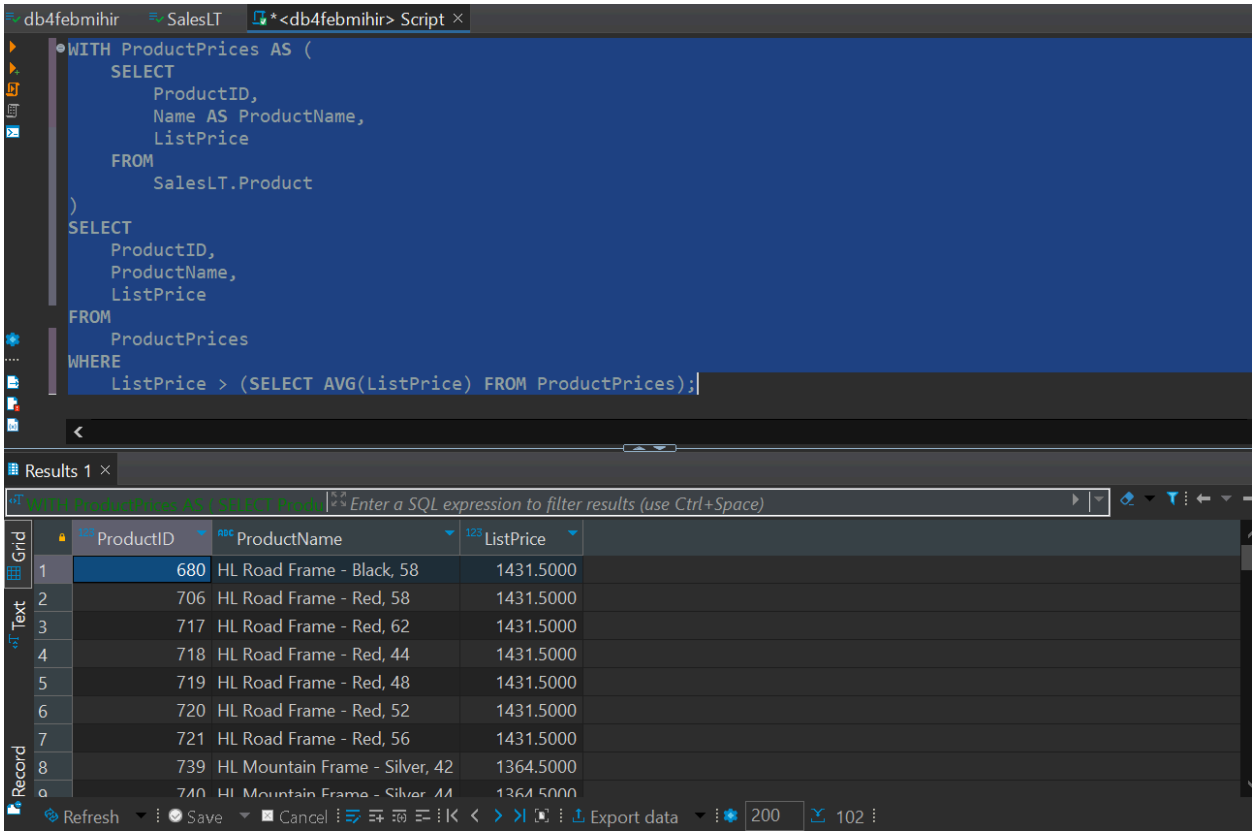
```
        TotalAmount
FROM
        CustomerOrderTotals
WHERE
        TotalAmount > (SELECT AVG(TotalAmount) FROM CustomerOrderTotals);
```




**13. List products with prices higher than the average product price.**

```
WITH ProductPrices AS (
        SELECT
                ProductID,
                Name AS ProductName,
                ListPrice
        FROM
                SalesLT.Product
)
SELECT
        ProductID,
        ProductName,
        ListPrice
FROM
        ProductPrices
WHERE
```

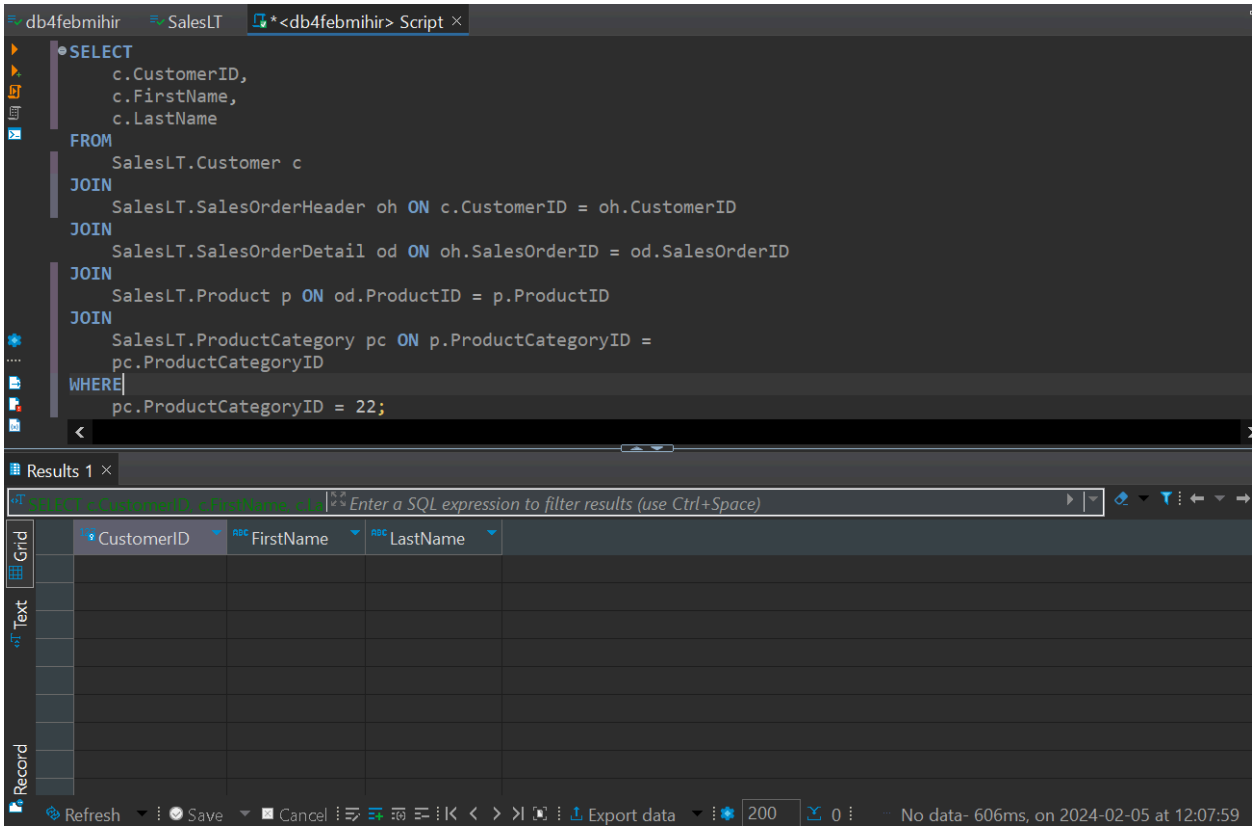
ListPrice > (SELECT AVG(ListPrice) FROM ProductPrices);




**14. Retrieve orders placed by employees who have a specific job title.** - Data insufficient

**15. Display customers who have placed orders for a specific product category**

```
SELECT
        c.CustomerID,
        c.FirstName,
        c.LastName
FROM
        SalesLT.Customer c
JOIN
        SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
JOIN
        SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
JOIN
        SalesLT.Product p ON od.ProductID = p.ProductID
JOIN
        SalesLT.ProductCategory pc ON p.ProductCategoryID =
        pc.ProductCategoryID
WHERE
        pc.ProductCategoryID = 22;
```




**16. Find employees with salaries greater than the average salary in their department** - Data insufficient

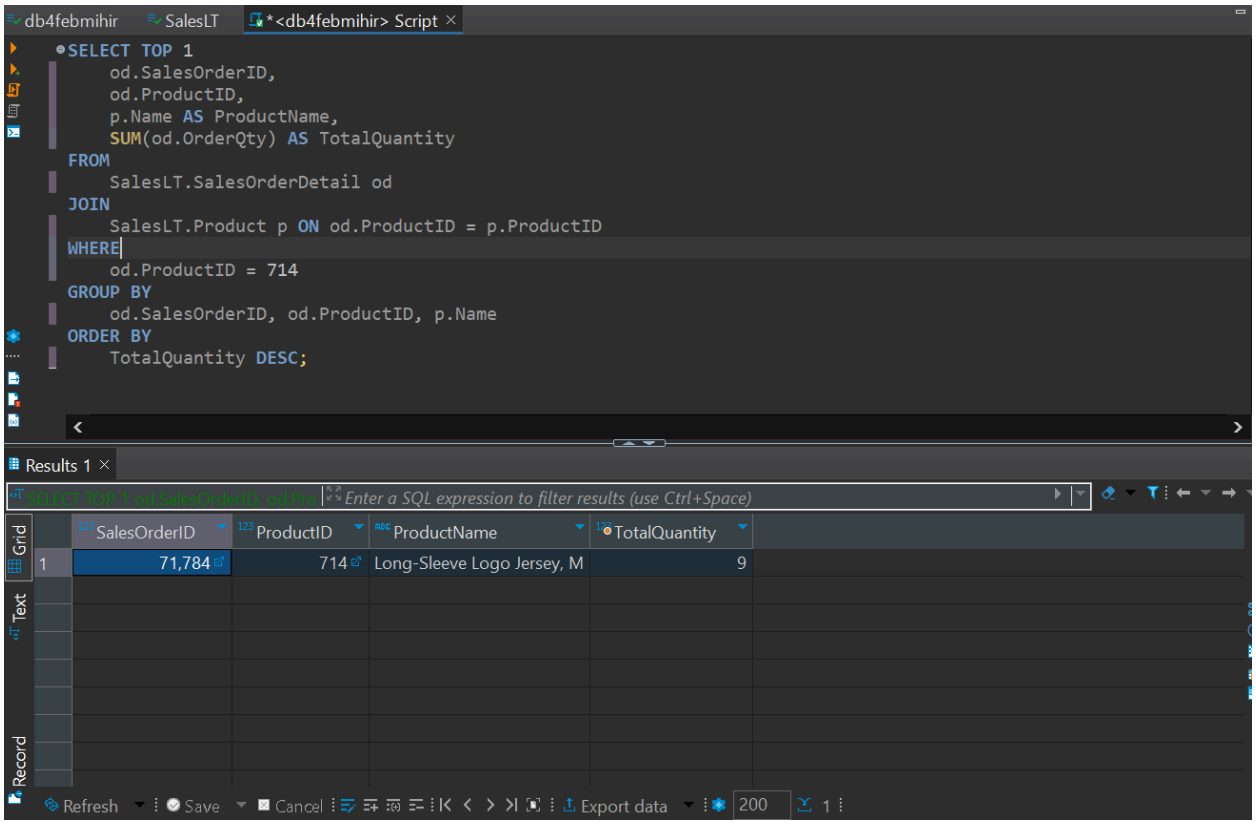
**17. List customers who have placed orders before a specific date.**

```
SELECT DISTINCT
        c.CustomerID,
        c.FirstName,
        c.LastName
FROM
        SalesLT.Customer c
JOIN
        SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
WHERE
        oh.OrderDate < 2008-07-02
```

18.Retrieve the order with the highest quantity of a specific product.

```
SELECT TOP 1
        od.SalesOrderID,
        od.ProductID,
        p.Name AS ProductName,
        SUM(od.OrderQty) AS TotalQuantity
FROM
```

```
        SalesLT.SalesOrderDetail od
JOIN
        SalesLT.Product p ON od.ProductID = p.ProductID
WHERE
        od.ProductID = 714
GROUP BY
        od.SalesOrderID, od.ProductID, p.Name
ORDER BY
        TotalQuantity DESC;
```




**19. Display products with prices lower than the lowest product price in a specific category.**

```
WITH ProductPrices AS (
        SELECT
                p.ProductID,
                p.Name AS ProductName,
                p.ListPrice,
                pc.ProductCategoryID
        FROM
                SalesLT.Product p
        JOIN
                SalesLT.ProductCategory pc ON p.ProductCategoryID =
                pc.ProductCategoryID
```

```
        WHERE
                pc.ProductCategoryID = 11
)
SELECT
        ProductID,
        ProductName,
        ListPrice
FROM
        ProductPrices
WHERE
        ListPrice < (SELECT MIN(ListPrice) FROM ProductPrices);
```

**20. Find employees who have the same job title as their manager** - Data insufficient

**21. Combine results from two queries to get a list of unique customer and employee names** - Data insufficient

**22. Retrieve product names that are common in two different product categories.**

```
SELECT
   p.Name AS ProductName
FROM
   SalesLT.Product p
JOIN
   SalesLT.ProductCategory pc1 ON p.ProductCategoryID = pc1.ProductCategoryID
JOIN
   SalesLT.ProductCategory pc2 ON p.ProductCategoryID = pc2.ProductCategoryID
WHERE
   pc1.ProductCategoryID <> pc2.ProductCategoryID;
```

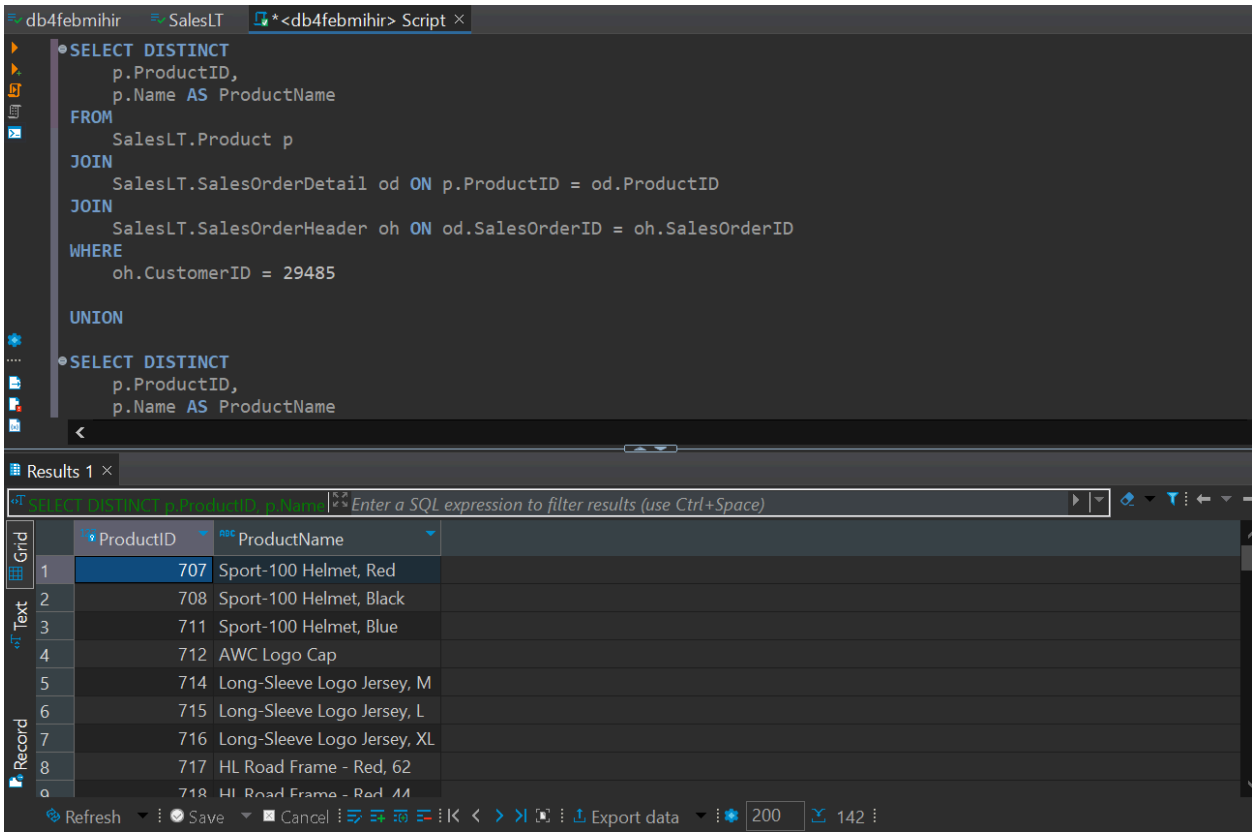
**23. Display the names of employees and customers in a single result set** - Data insufficient

**24. List products that are in stock or have been discontinued** - Data insufficient

**25. Combine the results of two queries to find unique products ordered by a specific customer**

```
SELECT DISTINCT
   p.ProductID,
   p.Name AS ProductName
FROM
   SalesLT.Product p
JOIN
   SalesLT.SalesOrderDetail od ON p.ProductID = od.ProductID
JOIN
```

```
    SalesLT.SalesOrderHeader oh ON od.SalesOrderID = oh.SalesOrderID
WHERE
    oh.CustomerID = 29485

UNION

SELECT DISTINCT
    p.ProductID,
    p.Name AS ProductName
FROM
    SalesLT.Product p
JOIN
    SalesLT.SalesOrderDetail od ON p.ProductID = od.ProductID
ORDER BY
    ProductID;
```




**26.Retrieve orders placed by customers and employees in a single result set** - Data insufficient

**27.Display products that are either in a specific category or have a specific safety stock level** - Data insufficient

**28.List customers who have placed orders and employees who have direct reports in a single result set** - Data insufficient

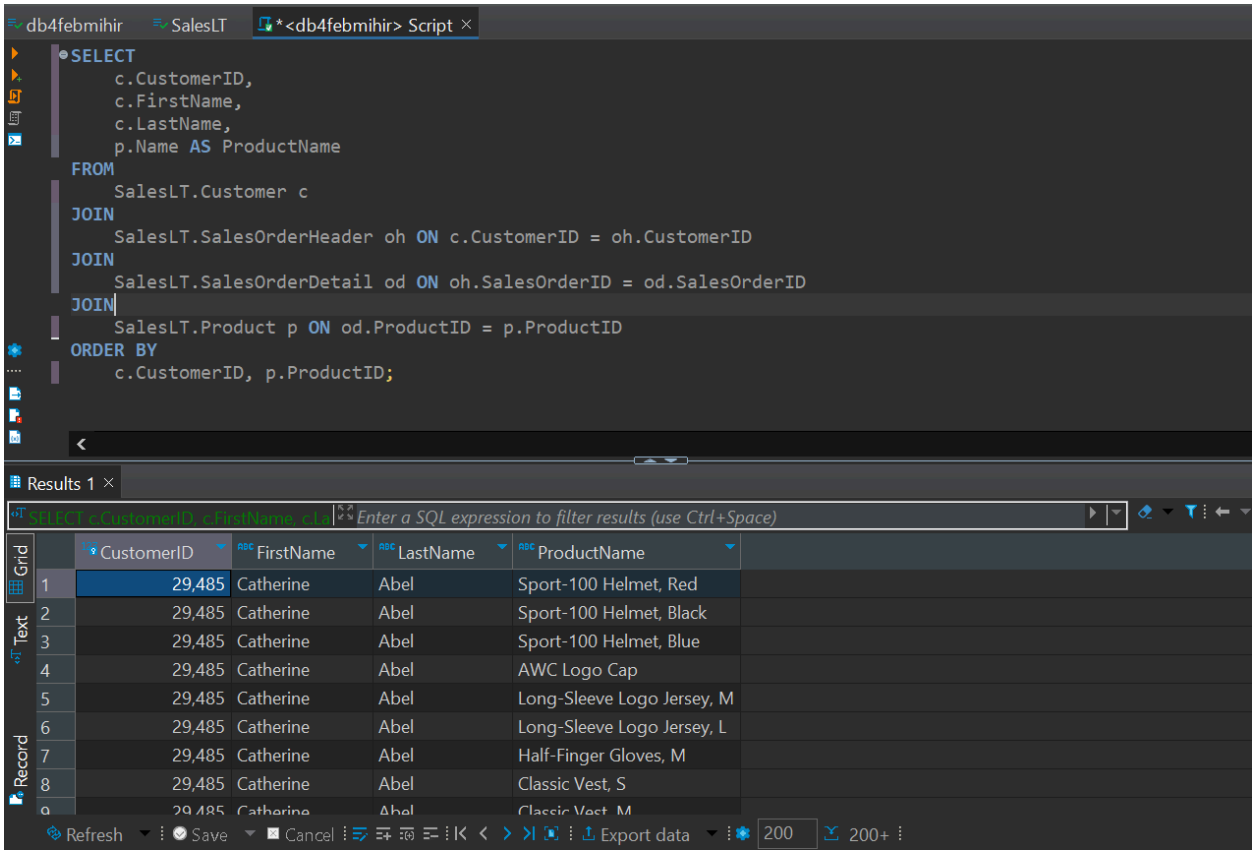
**29.Retrieve products that are in stock in one location and out of stock in another** - Data insufficient

**30.Combine information about employees who are managers and employees who have managers** - Data insufficient

# INTERMEDIATE

**31. Retrieve a list of customers along with the names of the products they have purchased.**

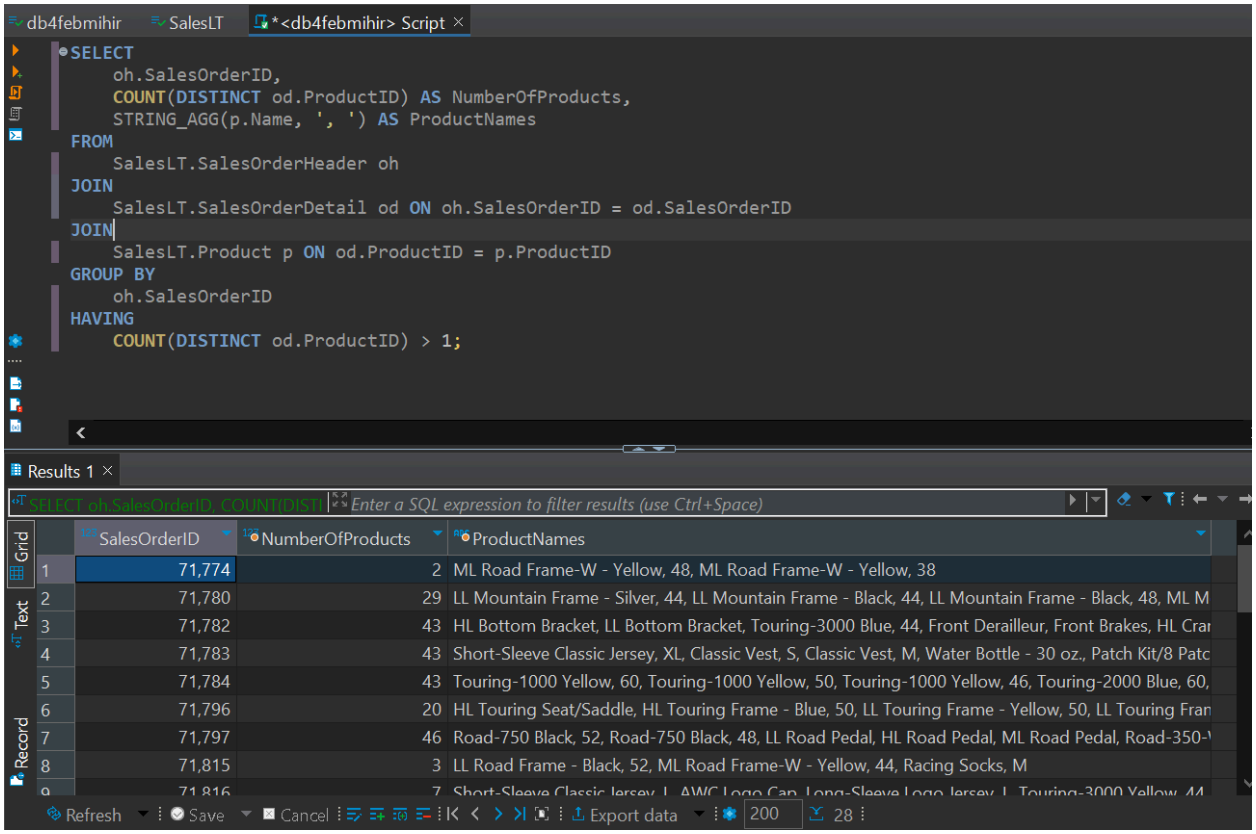
```
SELECT
    c.CustomerID,
    c.FirstName,
    c.LastName,
    p.Name AS ProductName
FROM
    SalesLT.Customer c
JOIN
    SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
JOIN
    SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
JOIN
    SalesLT.Product p ON od.ProductID = p.ProductID
ORDER BY
    c.CustomerID, p.ProductID;
```




**32. Display employees who have the same manager, including indirect reports** - Data insufficient

**33. Find orders with multiple products and display the product names.**

```
SELECT
   oh.SalesOrderID,
   COUNT(DISTINCT od.ProductID) AS NumberOfProducts,
   STRING_AGG(p.Name, ', ') AS ProductNames
FROM
   SalesLT.SalesOrderHeader oh
JOIN
   SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
JOIN
   SalesLT.Product p ON od.ProductID = p.ProductID
GROUP BY
   oh.SalesOrderID
HAVING
   COUNT(DISTINCT od.ProductID) > 1;
```



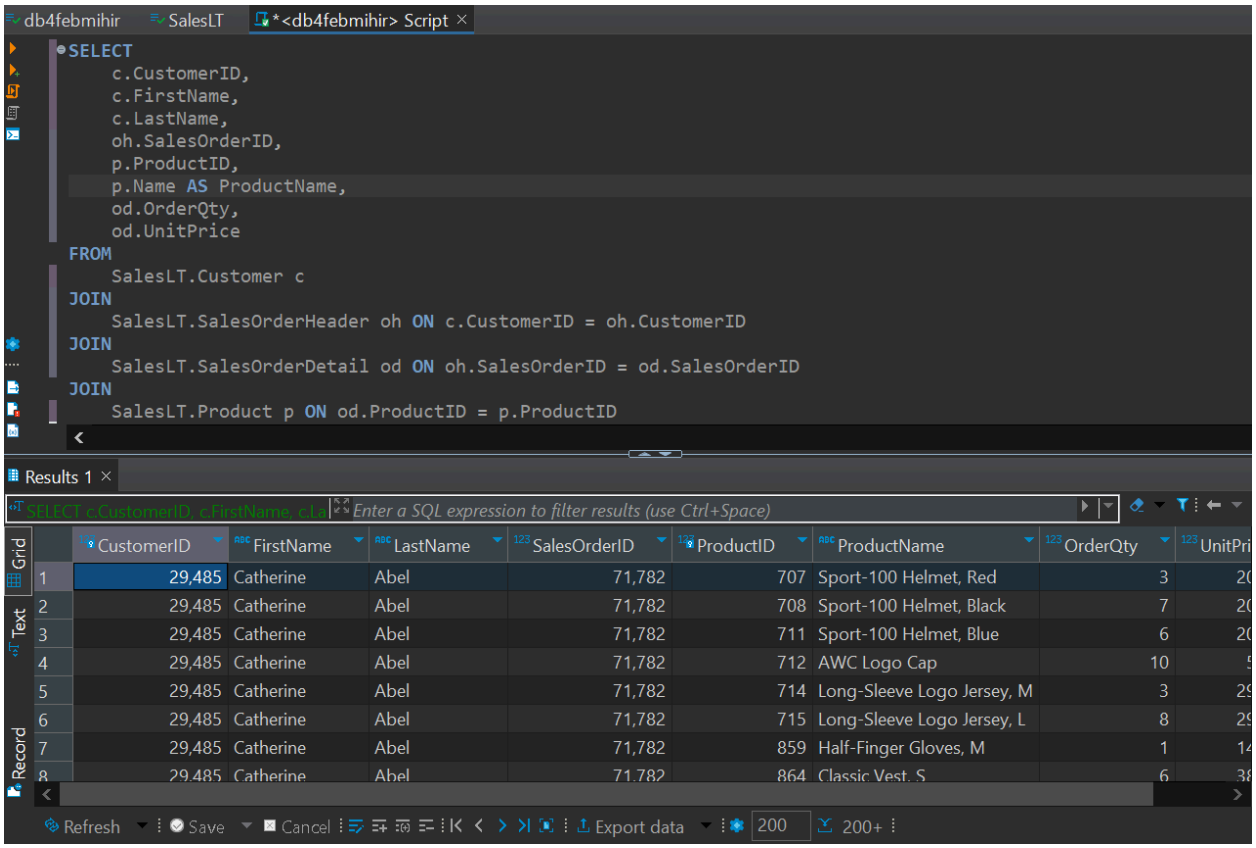

**34. List customers along with the names of the salespeople who handled their orders -** Data insufficient

**35. Retrieve a list of products along with the names of suppliers -** Data insufficient

**36. Display customers who have placed orders and the products they have purchased, including product details**.

```
SELECT
    c.CustomerID,
    c.FirstName,
    c.LastName,
    oh.SalesOrderID,
    p.ProductID,
    p.Name AS ProductName,
    od.OrderQty,
    od.UnitPrice
FROM
    SalesLT.Customer c
JOIN
    SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
JOIN
```

```
   SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
JOIN
   SalesLT.Product p ON od.ProductID = p.ProductID
ORDER BY
   c.CustomerID, oh.SalesOrderID, p.ProductID;
```




**37. Find orders where multiple employees were involved, showing the employee names** - Data insufficient

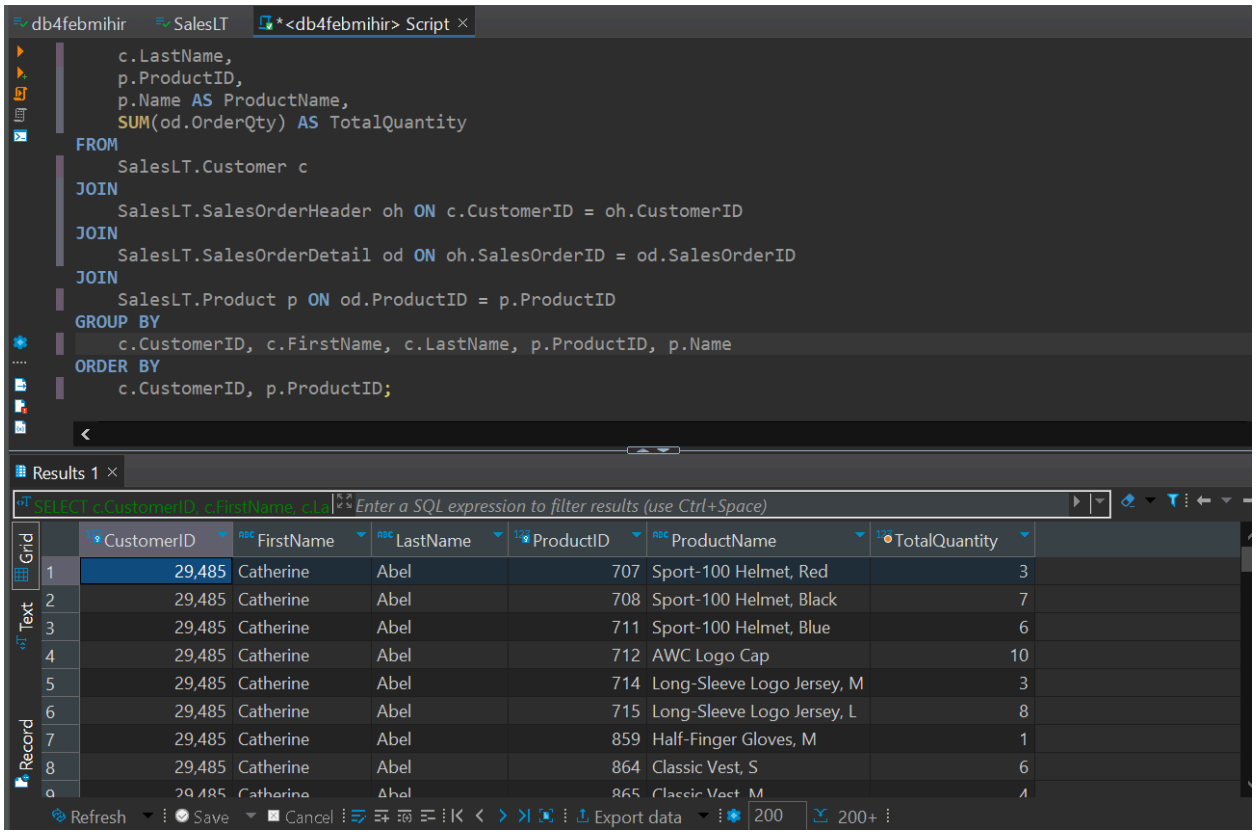
**38. List products that have similar names but belong to different categories -** Data insufficient

**39. Retrieve a list of employees along with their training courses and training dates** - Data insufficient

**40. Display customers who have placed orders and the total quantity of each product ordered.**

```
SELECT
   c.CustomerID,
   c.FirstName,
   c.LastName,
   p.ProductID,
```

```
    p.Name AS ProductName,
    SUM(od.OrderQty) AS TotalQuantity
FROM
    SalesLT.Customer c
JOIN
    SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
JOIN
    SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
JOIN
    SalesLT.Product p ON od.ProductID = p.ProductID
GROUP BY
    c.CustomerID, c.FirstName, c.LastName, p.ProductID, p.Name
ORDER BY
    c.CustomerID, p.ProductID;
```




| | CustomerID | FirstName | LastName | ProductID | ProductName | TotalQuantity |
|---|---|---|---|---|---|---|
| 1 | 29,485 | Catherine | Abel | 707 | Sport-100 Helmet, Red | 3 |
| 2 | 29,485 | Catherine | Abel | 708 | Sport-100 Helmet, Black | 7 |
| 3 | 29,485 | Catherine | Abel | 711 | Sport-100 Helmet, Blue | 6 |
| 4 | 29,485 | Catherine | Abel | 712 | AWC Logo Cap | 10 |
| 5 | 29,485 | Catherine | Abel | 714 | Long-Sleeve Logo Jersey, M | 3 |
| 6 | 29,485 | Catherine | Abel | 715 | Long-Sleeve Logo Jersey, L | 8 |
| 7 | 29,485 | Catherine | Abel | 859 | Half-Finger Gloves, M | 1 |
| 8 | 29,485 | Catherine | Abel | 864 | Classic Vest, S | 6 |
| 9 | 29,485 | Catherine | Abel | 865 | Classic Vest, M | 4 |

**41. Find customers who have made more purchases than the average number of purchases.**

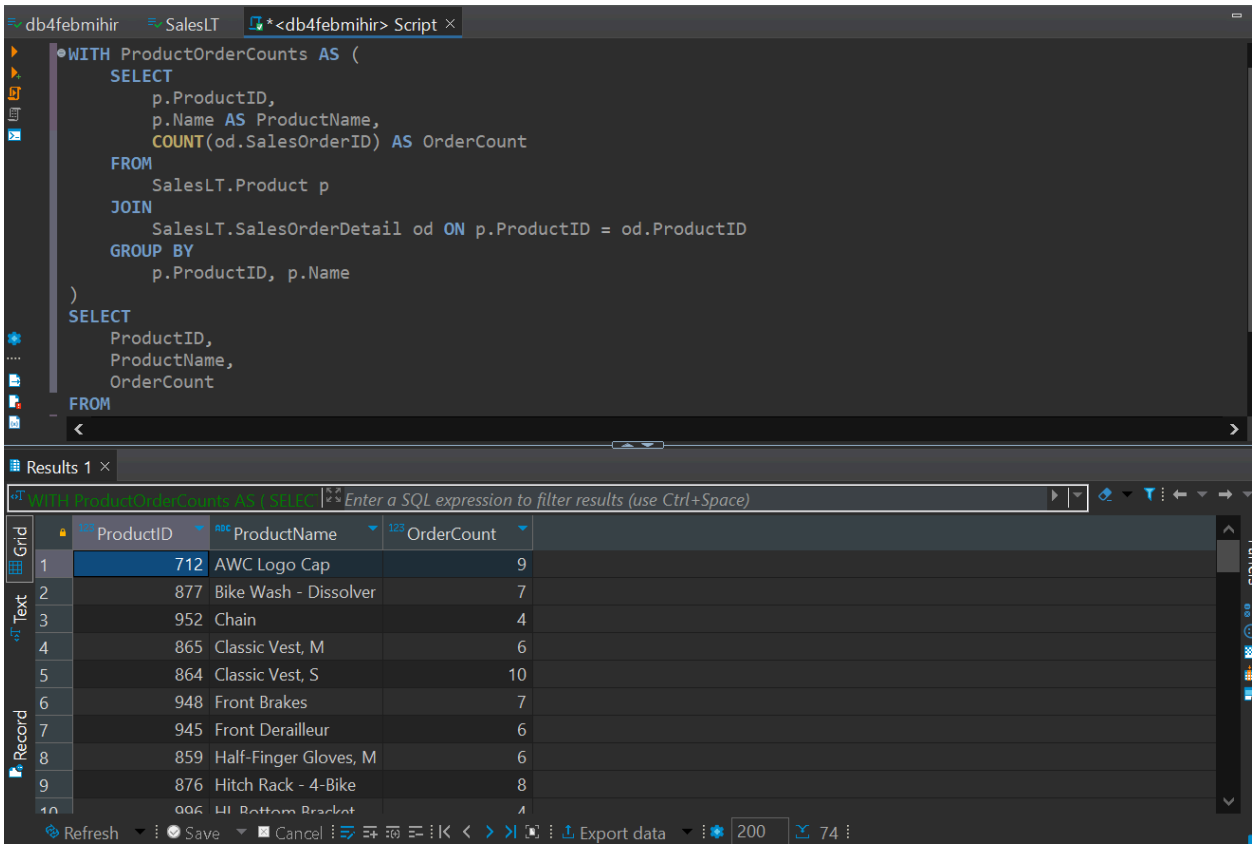
```
WITH CustomerPurchaseCounts AS (
    SELECT
        c.CustomerID,
        COUNT(DISTINCT oh.SalesOrderID) AS PurchaseCount
    FROM
        SalesLT.Customer c
```

```
    JOIN
        SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
    JOIN
        SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
    GROUP BY
        c.CustomerID
)

SELECT
    c.CustomerID,
    c.FirstName,
    c.LastName,
    c.EmailAddress,
    c.Phone,
    c.CompanyName
FROM
    SalesLT.Customer c
JOIN
    (
        SELECT
            CustomerID
        FROM
            CustomerPurchaseCounts
        WHERE
            PurchaseCount > (SELECT AVG(PurchaseCount) FROM CustomerPurchaseCounts)
    ) pc ON c.CustomerID = pc.CustomerID;
```

**42. Display products that have been ordered more than the average number of times.**

```
WITH ProductOrderCounts AS (
    SELECT
        p.ProductID,
        p.Name AS ProductName,
        COUNT(od.SalesOrderID) AS OrderCount
    FROM
        SalesLT.Product p
    JOIN
        SalesLT.SalesOrderDetail od ON p.ProductID = od.ProductID
    GROUP BY
        p.ProductID, p.Name
)
SELECT
    ProductID,
    ProductName,
    OrderCount
```

```
FROM
   ProductOrderCounts
WHERE
   OrderCount > (SELECT AVG(OrderCount) FROM ProductOrderCounts);
```




**43. Retrieve orders placed by employees who have completed a specific training course** - Data insufficient

**44. List employees who have a higher salary than at least one employee in another department** - Data insufficient

**45.Display products that have not been ordered in the last 60 days -** Data insufficient

**46. Find employees who have the same job title as the employee with the highest salary -** Data insufficient

**47. List customers who have placed orders with a total amount greater than the total amount of a specific order** - Data insufficient

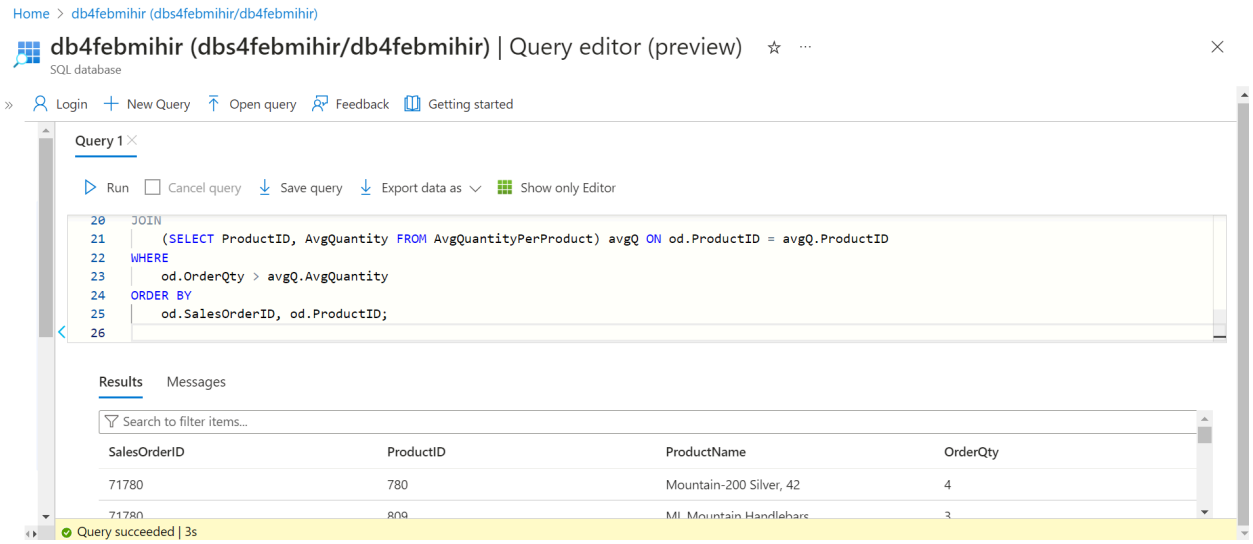
**48. Retrieve products that have been ordered by customers with the same shipping address.**

```
WITH CustomerShippingAddresses AS (
    SELECT
        ca.CustomerID,
        ca.AddressID,
        a.AddressLine1,
        a.AddressLine2,
        a.City,
        a.StateProvince,
        a.CountryRegion,
        a.PostalCode
    FROM
        SalesLT.CustomerAddress ca
    JOIN
        SalesLT.Address a ON ca.AddressID = a.AddressID
)

SELECT
    p.ProductID,
    p.Name AS ProductName,
    od.SalesOrderID,
    csa.CustomerID,
    csa.AddressID,
    csa.AddressLine1,
    csa.AddressLine2,
    csa.City,
    csa.StateProvince,
    csa.CountryRegion,
    csa.PostalCode
FROM
    SalesLT.Product p
JOIN
    SalesLT.SalesOrderDetail od ON p.ProductID = od.ProductID
JOIN
    SalesLT.SalesOrderHeader oh ON od.SalesOrderID = oh.SalesOrderID
JOIN
    CustomerShippingAddresses csa ON oh.CustomerID = csa.CustomerID
WHERE
    oh.ShipToAddressID IN (
        SELECT
            ShipToAddressID
        FROM
            SalesLT.SalesOrderHeader
        GROUP BY
            ShipToAddressID
```

```
        HAVING
            COUNT(DISTINCT CustomerID) > 1
    );
```

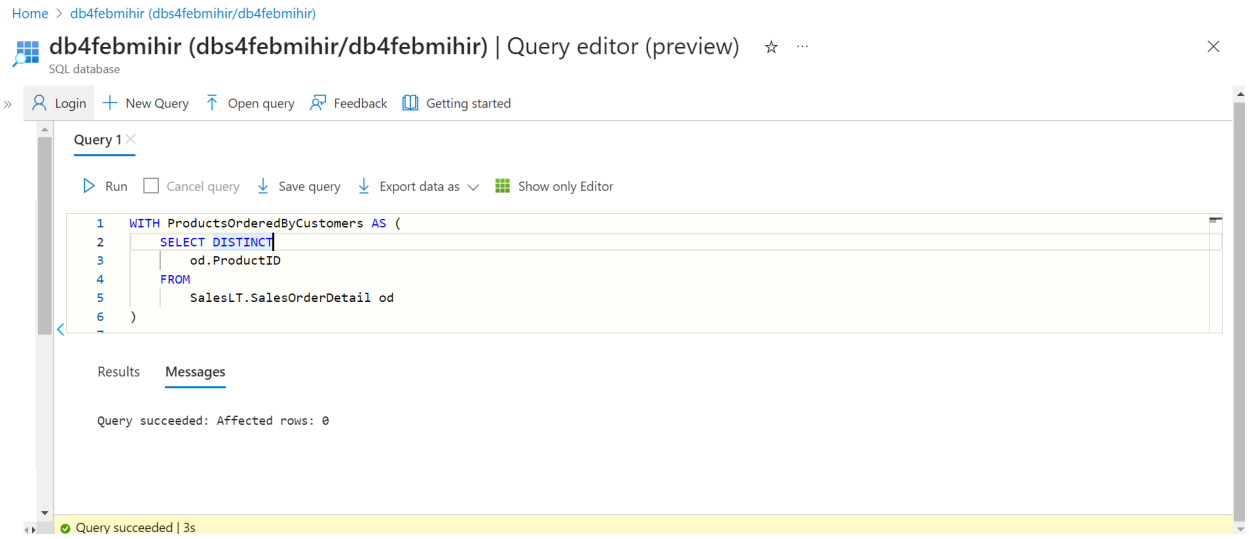
**49. Display orders with quantities higher than the average quantity for a specific product.**

```
WITH AvgQuantityPerProduct AS (
    SELECT
        od.ProductID,
        AVG(od.OrderQty) AS AvgQuantity
    FROM
        SalesLT.SalesOrderDetail od
    GROUP BY
        od.ProductID
)

SELECT
    od.SalesOrderID,
    od.ProductID,
    p.Name AS ProductName,
    od.OrderQty
FROM
    SalesLT.SalesOrderDetail od
JOIN
    SalesLT.Product p ON od.ProductID = p.ProductID
JOIN
    (SELECT ProductID, AvgQuantity FROM AvgQuantityPerProduct) avgQ ON od.ProductID =
avgQ.ProductID
WHERE
    od.OrderQty > avgQ.AvgQuantity
ORDER BY
    od.SalesOrderID, od.ProductID;
```




**50. Find customers who have placed orders for products that have not been ordered by any other customer.**

```
WITH ProductsOrderedByCustomers AS (
    SELECT DISTINCT
        od.ProductID
    FROM
        SalesLT.SalesOrderDetail od
)

SELECT
    c.CustomerID,
    c.FirstName,
    c.LastName,
    oh.SalesOrderID,
    p.ProductID,
    p.Name AS ProductName
FROM
    SalesLT.Customer c
JOIN
    SalesLT.SalesOrderHeader oh ON c.CustomerID = oh.CustomerID
JOIN
    SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
JOIN
    SalesLT.Product p ON od.ProductID = p.ProductID
WHERE
    p.ProductID NOT IN (SELECT ProductID FROM ProductsOrderedByCustomers)
ORDER BY
    c.CustomerID, oh.SalesOrderID, p.ProductID;
```


Home > db4febmihir (dbs4febmihir/db4febmihir)
db4febmihir (dbs4febmihir/db4febmihir) | Query editor (preview)
SQL database
Login
New Query
Open query
Feedback
Getting started
Query 1
Run
Cancel query
Save query
Export data as
Show only Editor
1 WITH ProductsOrderedByCustomers AS (
2 SELECT DISTINCT
3 od.ProductID
4 FROM
5 SalesLT.SalesOrderDetail od
6 )
Results
Messages
Query succeeded: Affected rows: 0
Query succeeded | 3s