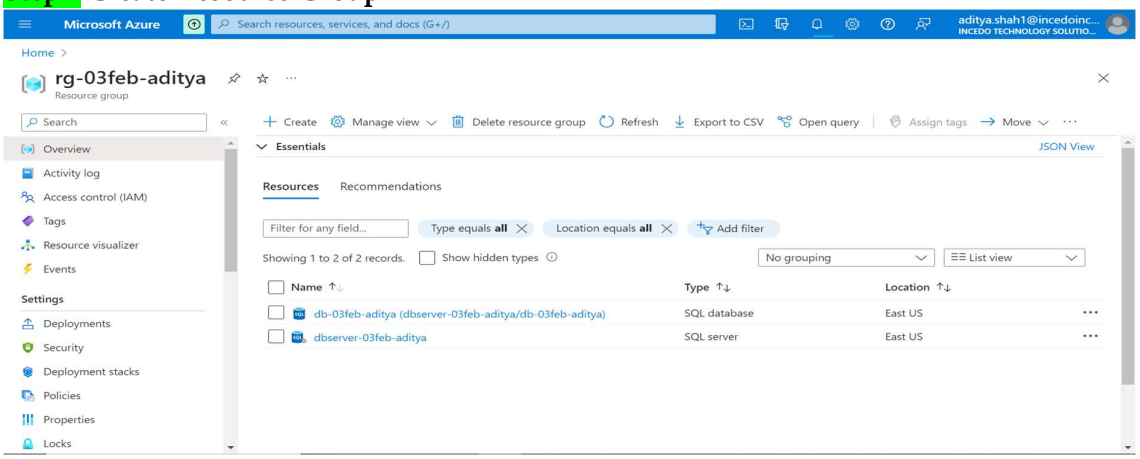
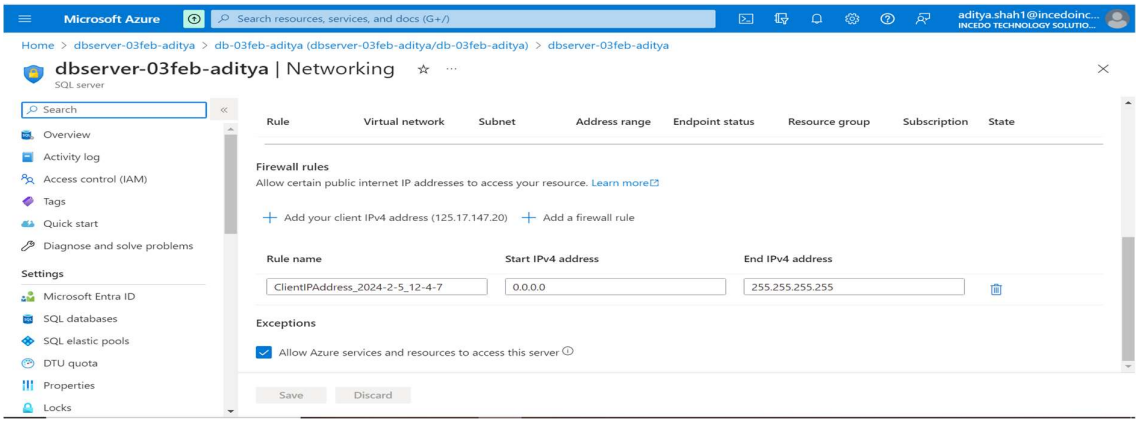
MODULE 1:
AdventureWorks sample database in Azure SQL Database

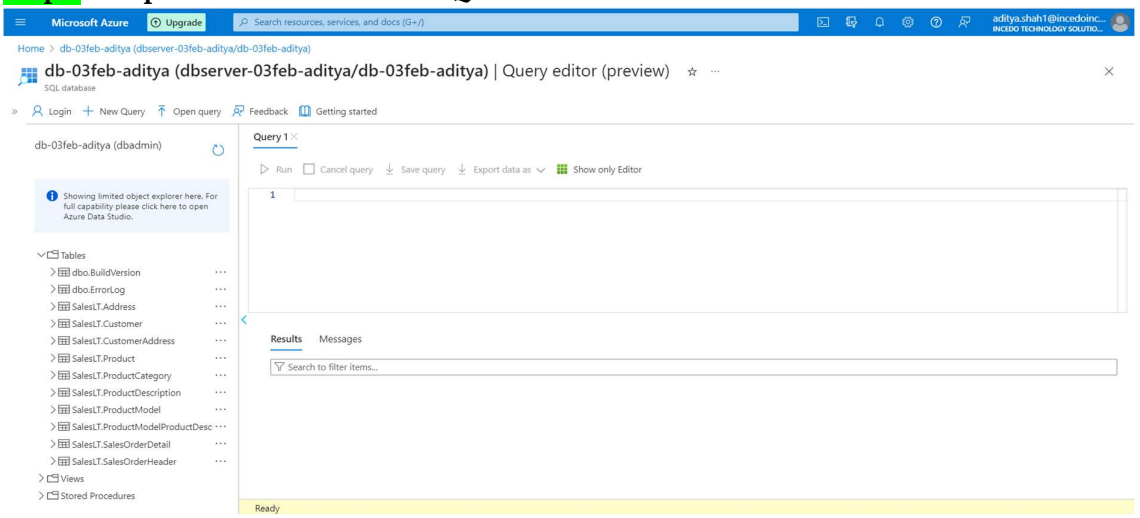
Step 1 Create Resource Group –



Step 2 Create the SQL Database & Set Firewall to connect to all the Networks i.e., 0.0.0.0 to 255.255.255.255 –



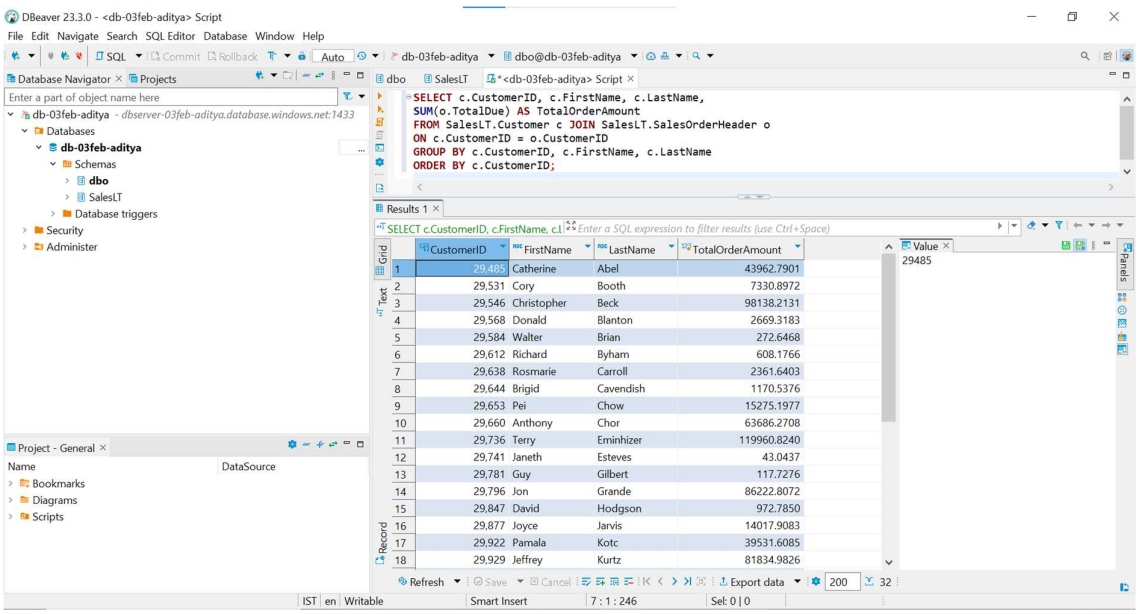
Step 3 Sample Dataset Loaded on SQL Database –



MODULE 2:
T-SQL Operations/Queries

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

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

dbo SalesLT *<db-03feb-aditya> Script

```sql
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;
```

Results 1

SELECT p.ProductID, p.Name AS Prod | Enter a SQL expression to filter results (use Ctrl+Space)

	ProductID	ProductName	ProductNumber	Color	TotalUni
1	707	Sport-100 Helmet, Red	HL-U509-R	Red	
2	708	Sport-100 Helmet, Black	HL-U509	Black	
3	711	Sport-100 Helmet, Blue	HL-U509-B	Blue	
4	712	AWC Logo Cap	CA-1098	Multi	
5	714	Long-Sleeve Logo Jersey, M	LJ-0192-M	Multi	
6	715	Long-Sleeve Logo Jersey, L	LJ-0192-L	Multi	
7	716	Long-Sleeve Logo Jersey, XL	LJ-0192-X	Multi	
8	717	HL Road Frame - Red, 62	FR-R92R-62	Red	
9	718	HL Road Frame - Red, 44	FR-R92R-44	Red	
10	722	LL Road Frame - Black, 58	FR-R38B-58	Black	
11	738	LL Road Frame - Black, 52	FR-R38B-52	Black	
12	739	HL Mountain Frame - Silver, 42	FR-M94S-42	Silver	
13	742	HL Mountain Frame - Silver, 46	FR-M94S-46	Silver	
14	743	HL Mountain Frame - Black, 42	FR-M94B-42	Black	
15	747	HL Mountain Frame - Black, 38	FR-M94B-38	Black	

Value: 707

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;

dbo SalesLT *<db-03feb-aditya> Script

```sql
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;
```

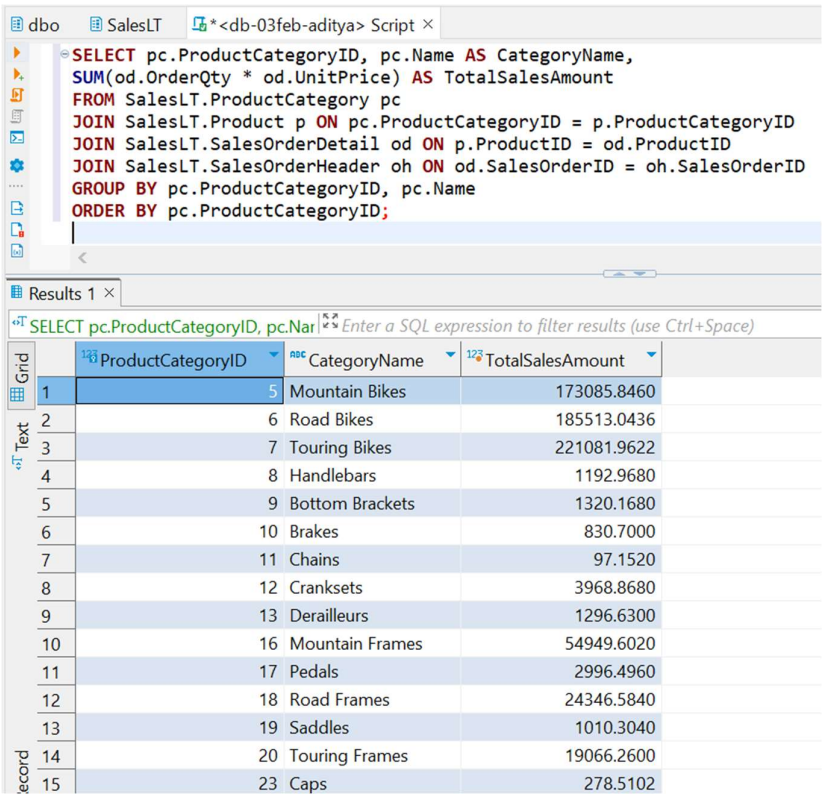
Results 1

SELECT c.CustomerID, c.FirstName, c.L | Enter a SQL expression to filter results (use Ctrl+Space)

	CustomerID	FirstName	LastName
1	1	Orlando	Gee
2	2	Keith	Harris
3	3	Donna	Carreras
4	4	Janet	Gates
5	5	Lucy	Harrington
6	6	Rosmarie	Carroll
7	7	Dominic	Gash
8	10	Kathleen	Garza
9	11	Katherine	Harding
10	12	Johnny	Caprio
11	16	Christopher	Beck
12	18	David	Liu
13	19	John	Beaver
14	20	Jean	Handley
15	21	Jinghao	Liu
16	22	Linda	Burnett
17	23	Kerim	Hanif
18	24	Kevin	Liu

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;
```



	ProductCategoryID	CategoryName	TotalSalesAmount
1	5	Mountain Bikes	173085.8460
2	6	Road Bikes	185513.0436
3	7	Touring Bikes	221081.9622
4	8	Handlebars	1192.9680
5	9	Bottom Brackets	1320.1680
6	10	Brakes	830.7000
7	11	Chains	97.1520
8	12	Cranksets	3968.8680
9	13	Derailleurs	1296.6300
10	16	Mountain Frames	54949.6020
11	17	Pedals	2996.4960
12	18	Road Frames	24346.5840
13	19	Saddles	1010.3040
14	20	Touring Frames	19066.2600
15	23	Caps	278.5102

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;
```

dbo SalesLT *<db-03feb-aditya> Script

```sql
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;
```

Results 1

SELECT oh.SalesOrderID, od.ProductI | Enter a SQL expression to filter results (use Ctrl+Space)

	SalesOrderID	ProductID	ProductName	OrderQty	UnitPrice	LineTotal
1	71,782	714	Long-Sleeve Logo Jersey, M	3	29.9940	89.982
2	71,782	956	Touring-1000 Yellow, 54	3	1430.4420	4,291.326
3	71,782	954	Touring-1000 Yellow, 46	1	1430.4420	1,430.442
4	71,782	712	AWC Logo Cap	10	5.3940	53.94
5	71,782	877	Bike Wash - Dissolver	10	4.7700	47.7
6	71,782	996	HL Bottom Bracket	4	72.8940	291.576
7	71,782	864	Classic Vest, S	6	38.1000	228.6
8	71,782	876	Hitch Rack - 4-Bike	3	72.0000	216
9	71,782	959	Touring-3000 Blue, 58	4	445.4100	1,781.64
10	71,782	971	Touring-2000 Blue, 50	4	728.9100	2,915.64
11	71,782	870	Water Bottle - 30 oz.	6	2.9940	17.964
12	71,782	978	Touring-3000 Blue, 44	1	445.4100	445.41
13	71,782	955	Touring-1000 Yellow, 50	1	1430.4420	1,430.442
14	71,782	948	Front Brakes	1	63.9000	63.9
15	71,782	994	LL Bottom Bracket	1	32.3940	32.394
16	71,782	970	Touring-2000 Blue, 46	1	728.9100	728.91

Value: 71782

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());

dbo SalesLT *<db-03feb-aditya> Script

```sql
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());
```

Results 1

SELECT DISTINCT c.CustomerID, c.Firs | Enter a SQL expression to filter results (use Ctrl+Space)

CustomerID	FirstName	LastName

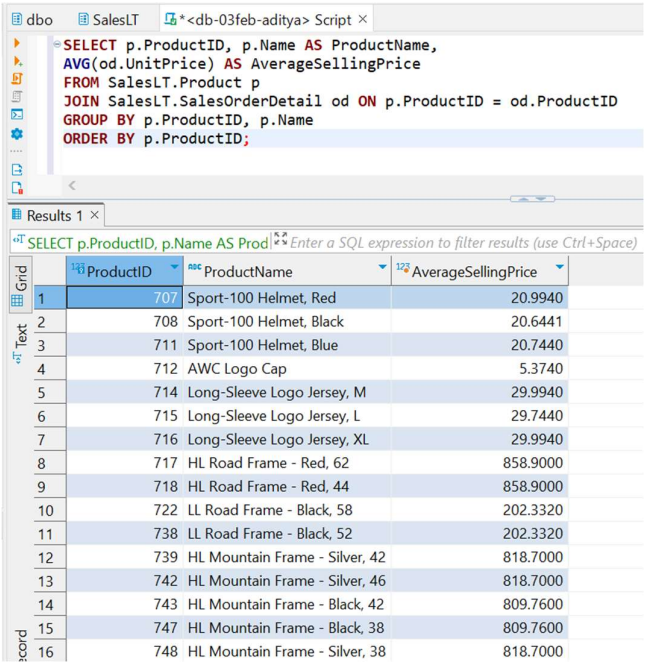
9. Find employees who do not have any direct reports.

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;

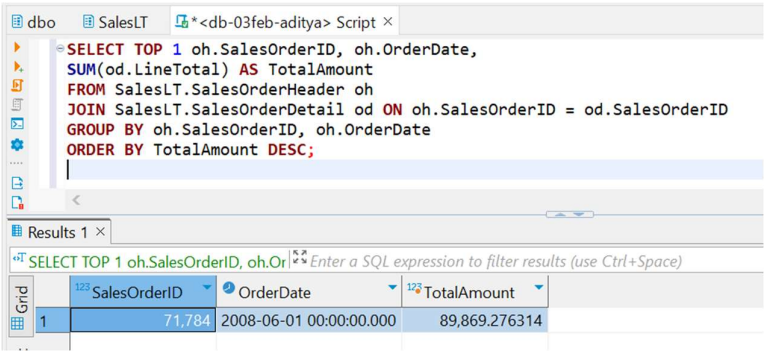


```
SELECT p.ProductID, p.Name AS ProductName,
AVG(od.UnitPrice) AS AverageSellingPrice
FROM SalesLT.Product p
JOIN SalesLT.SalesOrderDetail od ON p.ProductID = od.ProductID
GROUP BY p.ProductID, p.Name
ORDER BY p.ProductID;
```

	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
10	722	LL Road Frame - Black, 58	202.3320
11	738	LL Road Frame - Black, 52	202.3320
12	739	HL Mountain Frame - Silver, 42	818.7000
13	742	HL Mountain Frame - Silver, 46	818.7000
14	743	HL Mountain Frame - Black, 42	809.7600
15	747	HL Mountain Frame - Black, 38	809.7600
16	748	HL Mountain Frame - Silver, 38	818.7000

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;



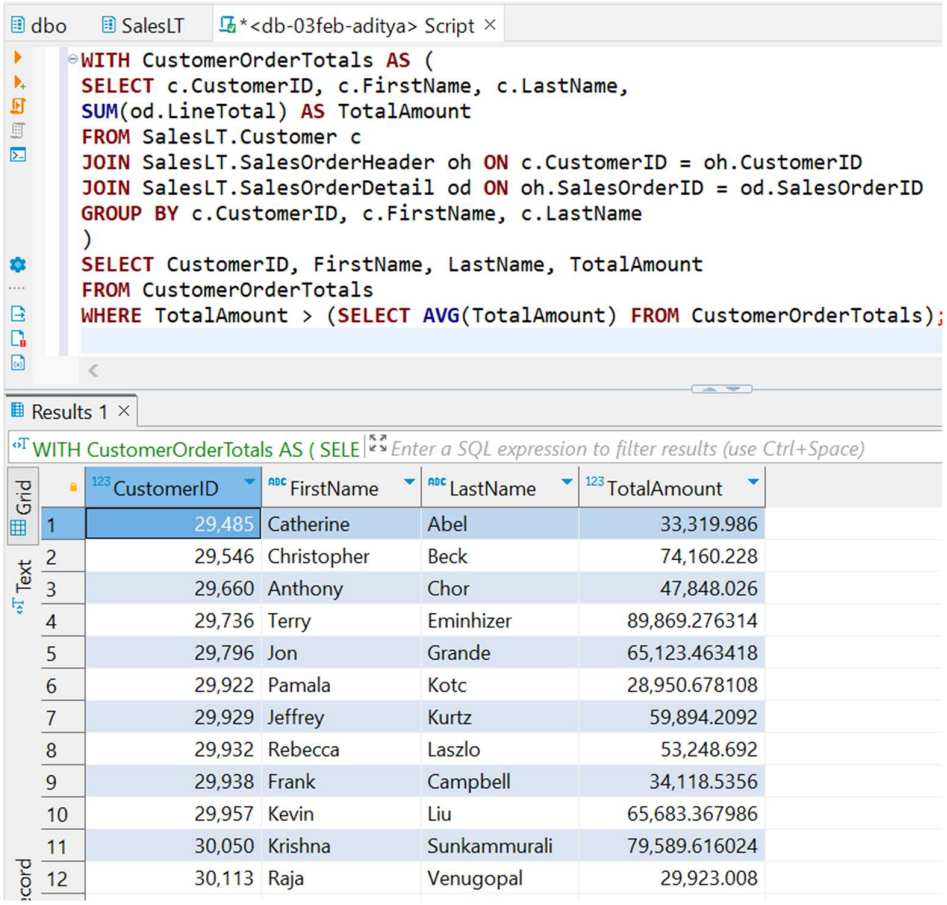
```
SELECT TOP 1 oh.SalesOrderID, oh.OrderDate,
SUM(od.LineTotal) AS TotalAmount
FROM SalesLT.SalesOrderHeader oh
JOIN SalesLT.SalesOrderDetail od ON oh.SalesOrderID = od.SalesOrderID
GROUP BY oh.SalesOrderID, oh.OrderDate
ORDER BY TotalAmount DESC;
```

	SalesOrderID	OrderDate	TotalAmount
1	71,784	2008-06-01 00:00:00.000	89,869.276314

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);
```



	CustomerID	FirstName	LastName	TotalAmount
1	29,485	Catherine	Abel	33,319.986
2	29,546	Christopher	Beck	74,160.228
3	29,660	Anthony	Chor	47,848.026
4	29,736	Terry	Eminhizer	89,869.276314
5	29,796	Jon	Grande	65,123.463418
6	29,922	Pamala	Kotc	28,950.678108
7	29,929	Jeffrey	Kurtz	59,894.2092
8	29,932	Rebecca	Laszlo	53,248.692
9	29,938	Frank	Campbell	34,118.5356
10	29,957	Kevin	Liu	65,683.367986
11	30,050	Krishna	Sunkammurali	79,589.616024
12	30,113	Raja	Venugopal	29,923.008

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);
```

dbo SalesLT *<db-03feb-aditya> Script

```sql
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);
```

Results 1

WITH ProductPrices AS (SELECT Prod | Enter a SQL expression to filter results (use Ctrl+Spac

	ProductID	ProductName	ListPrice
1	680	HL Road Frame - Black, 58	1431.5000
2	706	HL Road Frame - Red, 58	1431.5000
3	717	HL Road Frame - Red, 62	1431.5000
4	718	HL Road Frame - Red, 44	1431.5000
5	719	HL Road Frame - Red, 48	1431.5000
6	720	HL Road Frame - Red, 52	1431.5000
7	721	HL Road Frame - Red, 56	1431.5000
8	739	HL Mountain Frame - Silver, 42	1364.5000
9	740	HL Mountain Frame - Silver, 44	1364.5000
10	741	HL Mountain Frame - Silver, 48	1364.5000
11	742	HL Mountain Frame - Silver, 46	1364.5000
12	743	HL Mountain Frame - Black, 42	1349.6000
13	744	HL Mountain Frame - Black, 44	1349.6000
14	745	HL Mountain Frame - Black, 48	1349.6000
15	746	HL Mountain Frame - Black, 46	1349.6000

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.

```sql
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;
```

dbo SalesLT *<db-03feb-aditya> Script

```sql
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;
```

Results 1

SELECT c.CustomerID, c.FirstName, c.L | Enter a SQL expression to filter results (use Ctrl+Space)

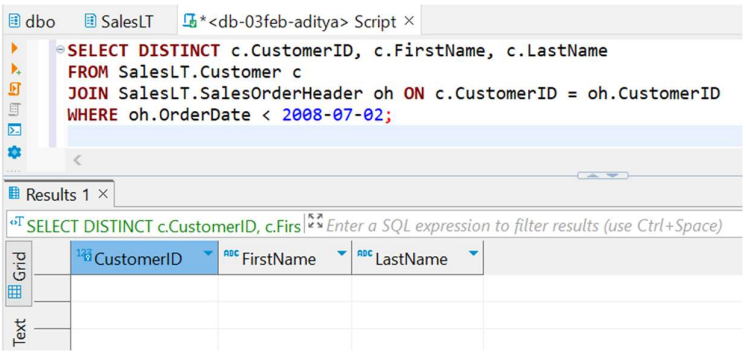
CustomerID	FirstName	LastName

16. Find employees with salaries greater than the average salary in their department.

Data Insufficient

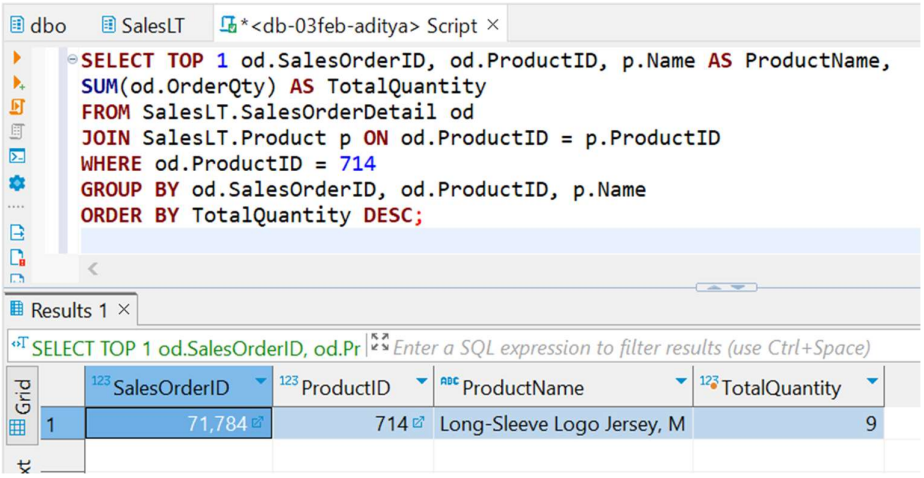
17. List customers who have placed orders before a specific date.

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;



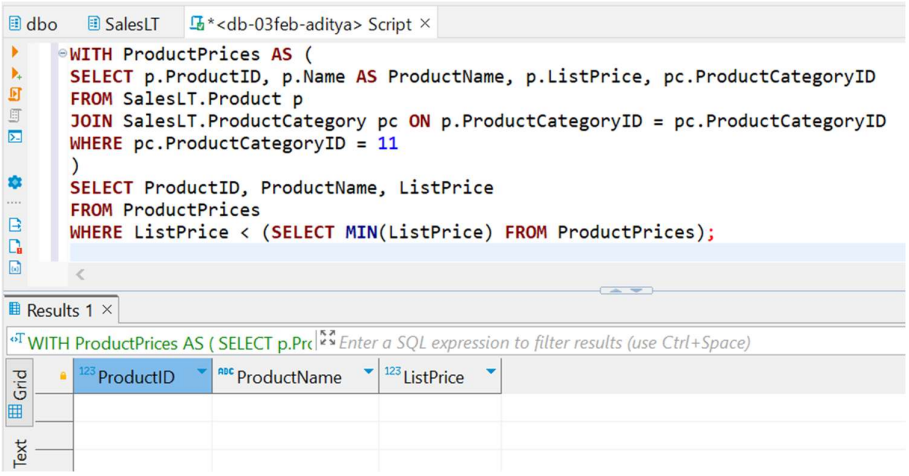
18. Retrieve the order with the highest quantity of a specific product.

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;
```

```
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;
```

Results 1

ProductName

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;

```
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;
```

Results 1

	ProductID	ProductName
1	707	Sport-100 Helmet, Red
2	708	Sport-100 Helmet, Black
3	711	Sport-100 Helmet, Blue
4	712	AWC Logo Cap
5	714	Long-Sleeve Logo Jersey, M
6	715	Long-Sleeve Logo Jersey, L
7	716	Long-Sleeve Logo Jersey, XL
8	717	HL Road Frame - Red, 62
9	718	HL Road Frame - Red, 44
10	722	LL Road Frame - Black, 58
11	738	LL Road Frame - Black, 52
12	739	HL Mountain Frame - Silver, 42
13	742	HL Mountain Frame - Silver, 46
14	743	HL Mountain Frame - Black, 42

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;
```

dbo | SalesLT | *<db-03feb-aditya> Script

```
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;
```

Results 1

SELECT c.CustomerID, c.FirstName, c.L | Enter a SQL expression to filter results (use Ctrl+Space)

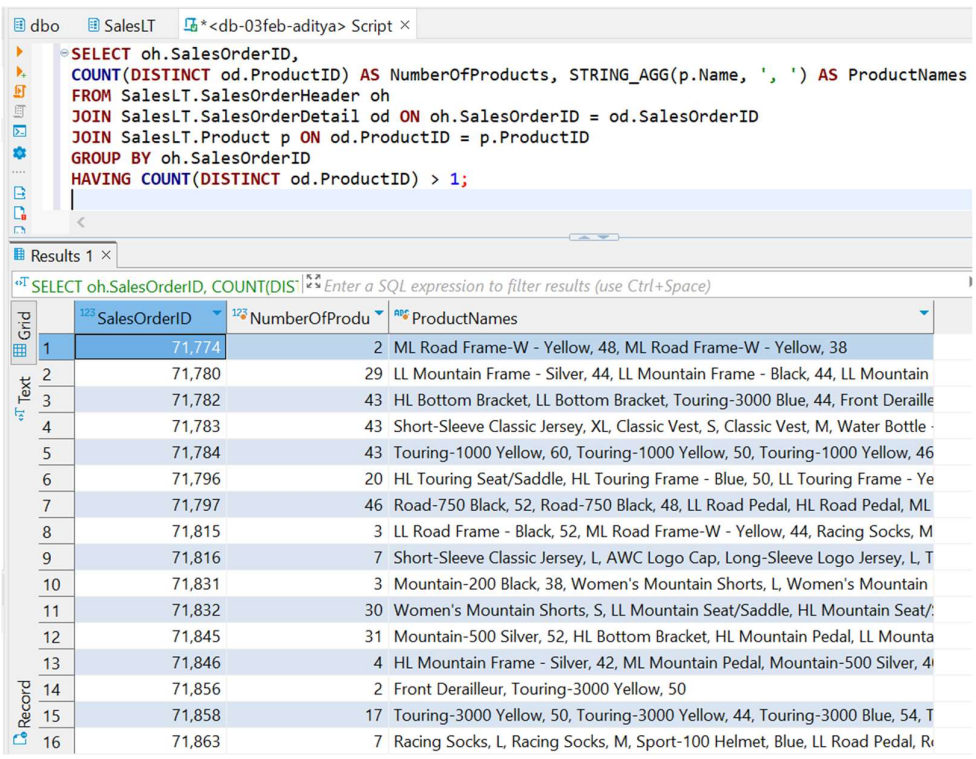
	CustomerID	FirstName	LastName	ProductName
1	29,485	Catherine	Abel	Sport-100 Helmet, Red
2	29,485	Catherine	Abel	Sport-100 Helmet, Black
3	29,485	Catherine	Abel	Sport-100 Helmet, Blue
4	29,485	Catherine	Abel	AWC Logo Cap
5	29,485	Catherine	Abel	Long-Sleeve Logo Jersey, M
6	29,485	Catherine	Abel	Long-Sleeve Logo Jersey, L
7	29,485	Catherine	Abel	Half-Finger Gloves, M
8	29,485	Catherine	Abel	Classic Vest, S
9	29,485	Catherine	Abel	Classic Vest, M
10	29,485	Catherine	Abel	Water Bottle - 30 oz.
11	29,485	Catherine	Abel	Hitch Rack - 4-Bike
12	29,485	Catherine	Abel	Bike Wash - Dissolver
13	29,485	Catherine	Abel	Hydration Pack - 70 oz.
14	29,485	Catherine	Abel	Short-Sleeve Classic Jersey, S
15	29,485	Catherine	Abel	Short-Sleeve Classic Jersey, L
16	29,485	Catherine	Abel	Short-Sleeve Classic Jersey, XL
17	29,485	Catherine	Abel	HL Touring Frame - Yellow, 60

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;



	SalesOrderID	NumberOfProdu	ProductNames
1	71,774	2	ML Road Frame-W - Yellow, 48, ML Road Frame-W - Yellow, 38
2	71,780	29	LL Mountain Frame - Silver, 44, LL Mountain Frame - Black, 44, LL Mountain
3	71,782	43	HL Bottom Bracket, LL Bottom Bracket, Touring-3000 Blue, 44, Front Deraille
4	71,783	43	Short-Sleeve Classic Jersey, XL, Classic Vest, S, Classic Vest, M, Water Bottle -
5	71,784	43	Touring-1000 Yellow, 60, Touring-1000 Yellow, 50, Touring-1000 Yellow, 46
6	71,796	20	HL Touring Seat/Saddle, HL Touring Frame - Blue, 50, LL Touring Frame - Ye
7	71,797	46	Road-750 Black, 52, Road-750 Black, 48, LL Road Pedal, HL Road Pedal, ML
8	71,815	3	LL Road Frame - Black, 52, ML Road Frame-W - Yellow, 44, Racing Socks, M
9	71,816	7	Short-Sleeve Classic Jersey, L, AWC Logo Cap, Long-Sleeve Logo Jersey, L, T
10	71,831	3	Mountain-200 Black, 38, Women's Mountain Shorts, L, Women's Mountain
11	71,832	30	Women's Mountain Shorts, S, LL Mountain Seat/Saddle, HL Mountain Seat/
12	71,845	31	Mountain-500 Silver, 52, HL Bottom Bracket, HL Mountain Pedal, LL Mounta
13	71,846	4	HL Mountain Frame - Silver, 42, ML Mountain Pedal, Mountain-500 Silver, 4
14	71,856	2	Front Derailleur, Touring-3000 Yellow, 50
15	71,858	17	Touring-3000 Yellow, 50, Touring-3000 Yellow, 44, Touring-3000 Blue, 54, T
16	71,863	7	Racing Socks, L, Racing Socks, M, Sport-100 Helmet, Blue, LL Road Pedal, R

34. List customers along with the names of the salespeople who handled their orders.

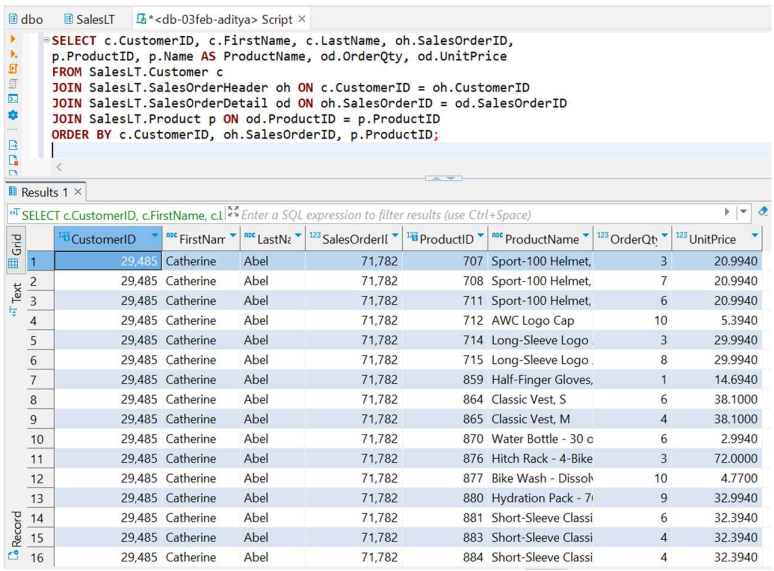
Data Insufficient

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;



Results 1

	CustomerID	FirstNam	LastNa	SalesOrderI	ProductID	ProductName	OrderQty	UnitPrice
1	29,485	Catherine	Abel	71,782	707	Sport-100 Helmet,	3	20.9940
2	29,485	Catherine	Abel	71,782	708	Sport-100 Helmet,	7	20.9940
3	29,485	Catherine	Abel	71,782	711	Sport-100 Helmet,	6	20.9940
4	29,485	Catherine	Abel	71,782	712	AWC Logo Cap	10	5.3940
5	29,485	Catherine	Abel	71,782	714	Long-Sleeve Logo	3	29.9940
6	29,485	Catherine	Abel	71,782	715	Long-Sleeve Logo	8	29.9940
7	29,485	Catherine	Abel	71,782	859	Half-Finger Gloves,	1	14.6940
8	29,485	Catherine	Abel	71,782	864	Classic Vest, S	6	38.1000
9	29,485	Catherine	Abel	71,782	865	Classic Vest, M	4	38.1000
10	29,485	Catherine	Abel	71,782	870	Water Bottle - 30 c	6	2.9940
11	29,485	Catherine	Abel	71,782	876	Hitch Rack - 4-Bike	3	72.0000
12	29,485	Catherine	Abel	71,782	877	Bike Wash - Dissol	10	4.7700
13	29,485	Catherine	Abel	71,782	880	Hydration Pack - 7	9	32.9940
14	29,485	Catherine	Abel	71,782	881	Short-Sleeve Classi	6	32.3940
15	29,485	Catherine	Abel	71,782	883	Short-Sleeve Classi	4	32.3940
16	29,485	Catherine	Abel	71,782	884	Short-Sleeve Classi	4	32.3940

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;

dbo SalesLT *<db-03feb-aditya> Script

```sql
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;
```

Results 1

SELECT c.CustomerID, c.FirstName, c.L Enter a SQL expression to filter results (use Ctrl+Space)

	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
10	29,485	Catherine	Abel	870	Water Bottle - 30 oz.	6
11	29,485	Catherine	Abel	876	Hitch Rack - 4-Bike	3
12	29,485	Catherine	Abel	877	Bike Wash - Dissolver	10
13	29,485	Catherine	Abel	880	Hydration Pack - 70 oz.	9
14	29,485	Catherine	Abel	881	Short-Sleeve Classic Jersey, S	6
15	29,485	Catherine	Abel	883	Short-Sleeve Classic Jersey, L	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 CustomerPurchaseCounts pc ON c.CustomerID = pc.CustomerID
WHERE pc.PurchaseCount > (SELECT AVG(PurchaseCount)
FROM CustomerPurchaseCounts);

dbo SalesLT *<db-03feb-aditya> Script

```sql
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 CustomerPurchaseCounts pc ON c.CustomerID = pc.CustomerID
WHERE pc.PurchaseCount > (SELECT AVG(PurchaseCount)
FROM CustomerPurchaseCounts);
```

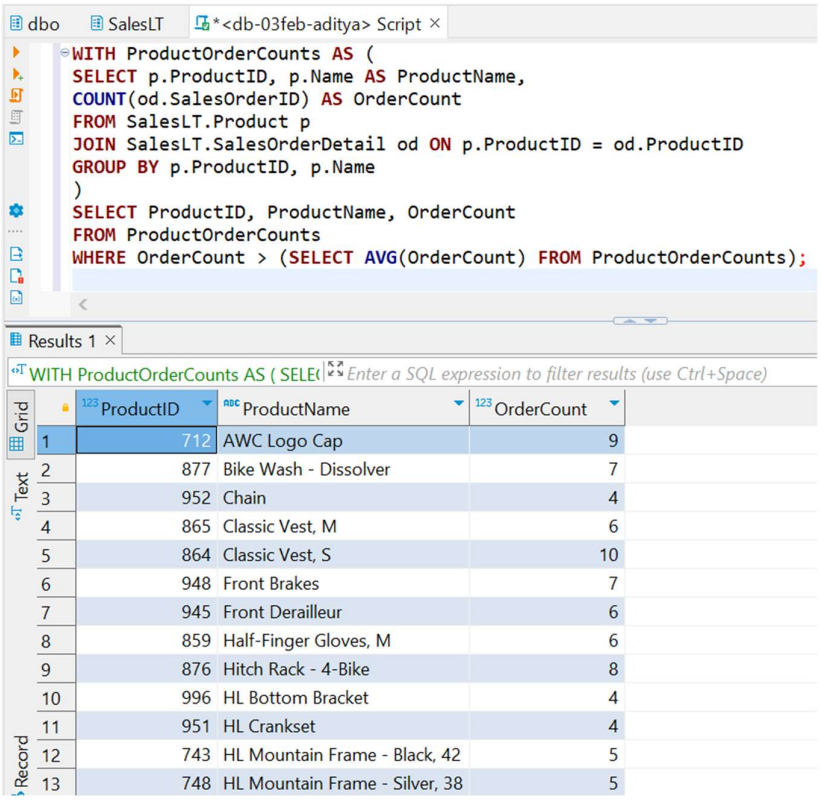
Results 1

WITH CustomerPurchaseCounts AS (Enter a SQL expression to filter results (use Ctrl+Space)

CustomerID	FirstName	LastName	EmailAddress	Phone	CompanyName

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);
```



	ProductID	ProductName	OrderCount
1	712	AWC Logo Cap	9
2	877	Bike Wash - Dissolver	7
3	952	Chain	4
4	865	Classic Vest, M	6
5	864	Classic Vest, S	10
6	948	Front Brakes	7
7	945	Front Derailleur	6
8	859	Half-Finger Gloves, M	6
9	876	Hitch Rack - 4-Bike	8
10	996	HL Bottom Bracket	4
11	951	HL Crankset	4
12	743	HL Mountain Frame - Black, 42	5
13	748	HL Mountain Frame - Silver, 38	5

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.

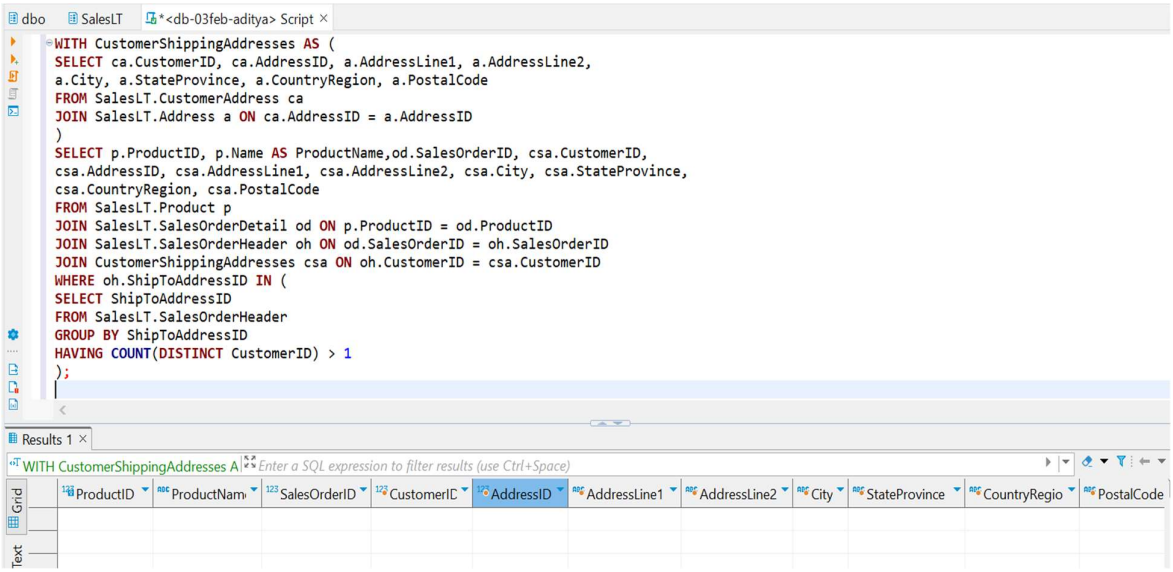
Data Insufficient

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 AvgQuantityPerProduct avgQ ON od.ProductID = avgQ.ProductID
WHERE od.OrderQty > avgQ.AvgQuantity
ORDER BY od.SalesOrderID, od.ProductID;
```

dbo SalesLT *<db-03feb-aditya> Script

```
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 AvgQuantityPerProduct avgQ ON od.ProductID = avgQ.ProductID
WHERE od.OrderQty > avgQ.AvgQuantity
ORDER BY od.SalesOrderID, od.ProductID;
```

Results 1

WITH AvgQuantityPerProduct AS (SELECT od.Prc | Enter a SQL expression to filter results (use Ctrl+Space)

	SalesOrderID	ProductID	ProductName	OrderQty
1	71,780	780	Mountain-200 Silver, 42	4
2	71,780	809	ML Mountain Handlebars	3
3	71,780	869	Women's Mountain Shorts, L	7
4	71,780	905	ML Mountain Frame-W - Silver, 42	4
5	71,780	981	Mountain-400-W Silver, 40	2
6	71,780	982	Mountain-400-W Silver, 42	3
7	71,780	986	Mountain-500 Silver, 44	3
8	71,780	987	Mountain-500 Silver, 48	3
9	71,780	988	Mountain-500 Silver, 52	6
10	71,780	989	Mountain-500 Black, 40	2
11	71,780	991	Mountain-500 Black, 44	3
12	71,780	993	Mountain-500 Black, 52	2
13	71,782	711	Sport-100 Helmet, Blue	6

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;