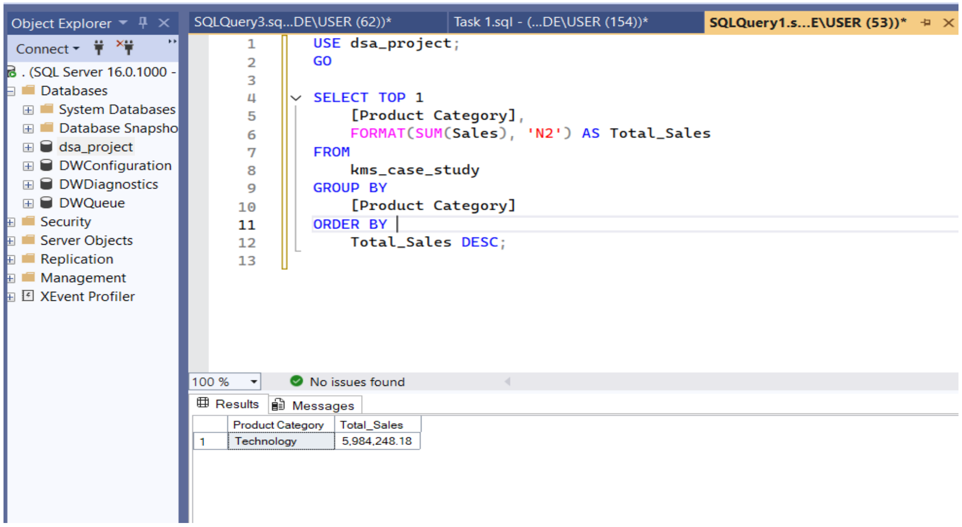
Kultra Mega Stores Inventory

Case Scenario 1

Task 1: Which product category had the highest sales?

```
SELECT TOP 1
    [Product Category],
    FORMAT(SUM(Sales), 'N2') AS Total_Sales
FROM
    kms_case_study
GROUP BY
    [Product Category]
ORDER BY
    Total_Sales DESC;
```



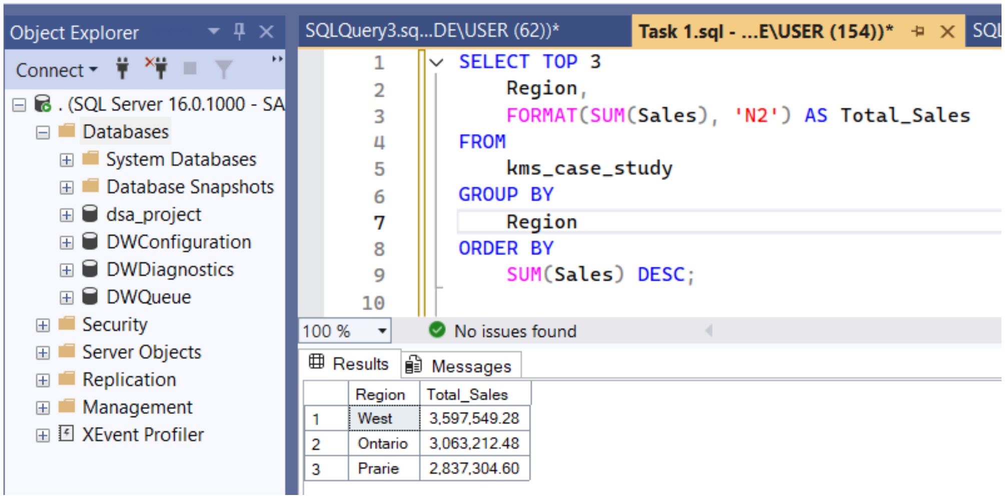
```
USE dsa_project;
GO

SELECT TOP 1
     [Product Category],
     FORMAT(SUM(Sales), 'N2') AS Total_Sales
FROM
     kms_case_study
GROUP BY
     [Product Category]
ORDER BY
     Total_Sales DESC;
```

	Product Category	Total_Sales
1	Technology	5,984,248.18

Task 2: What are the Top 3 and Bottom 3 regions in terms of sales?

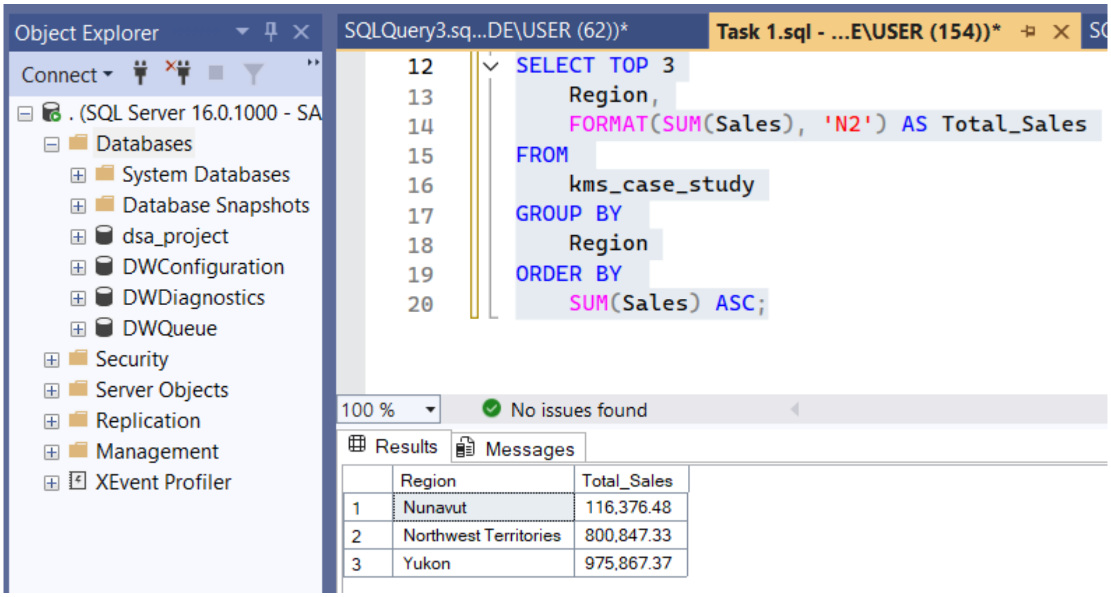
```
========== Top 3 ============
SELECT TOP 3
    Region,
    FORMAT(SUM(Sales), 'N2') AS Total_Sales
FROM
    kms_case_study
GROUP BY
    Region
ORDER BY
    SUM(Sales) DESC;
```



```
SELECT TOP 3
     Region,
     FORMAT(SUM(Sales), 'N2') AS Total_Sales
FROM
     kms_case_study
GROUP BY
     Region
ORDER BY
     SUM(Sales) DESC;
```

	Region	Total_Sales
1	West	3,597,549.28
2	Ontario	3,063,212.48
3	Prarie	2,837,304.60

```
============ Bottom 3 ===========
SELECT TOP 3
    Region,
    FORMAT(SUM(Sales), 'N2') AS Total_Sales
FROM
    kms_case_study
GROUP BY
    Region
ORDER BY
    SUM(Sales) ASC;
```

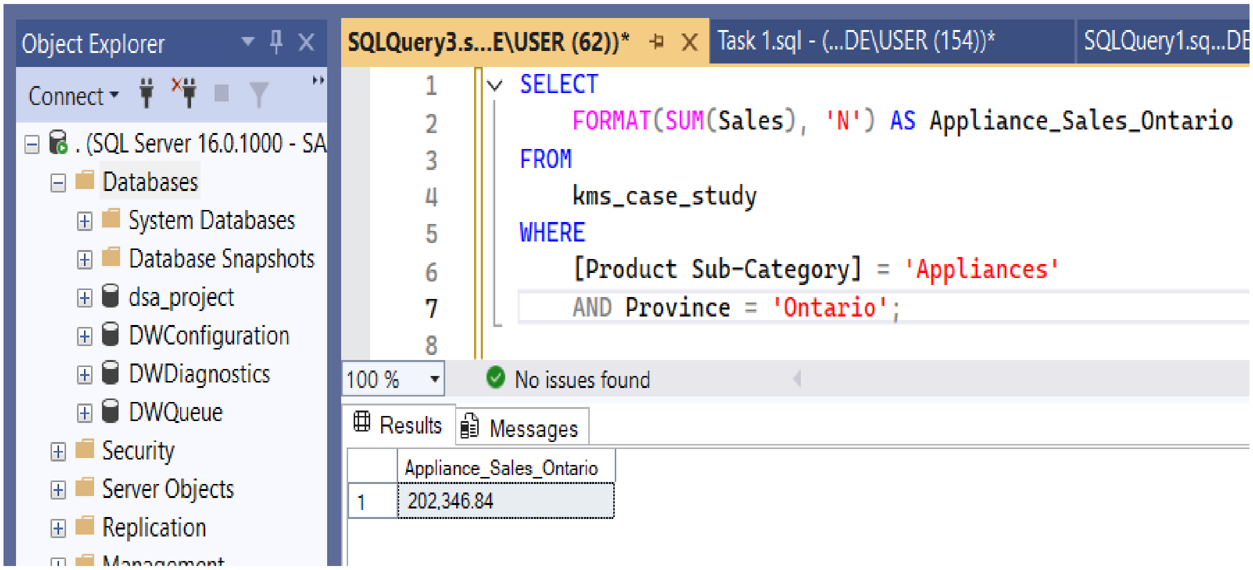


```
SELECT TOP 3
    Region,
    FORMAT(SUM(Sales), 'N2') AS Total_Sales
FROM
    kms_case_study
GROUP BY
    Region
ORDER BY
    SUM(Sales) ASC;
```

	Region	Total_Sales
1	Nunavut	116,376.48
2	Northwest Territories	800,847.33
3	Yukon	975,867.37

Task 3: What were the total sales of appliances in Ontario?

```
SELECT
    FORMAT(SUM(Sales), 'N') AS Appliance_Sales_Ontario
FROM
    kms_case_study
WHERE
    [Product Sub-Category] = 'Appliances'
    AND Province = 'Ontario';
```

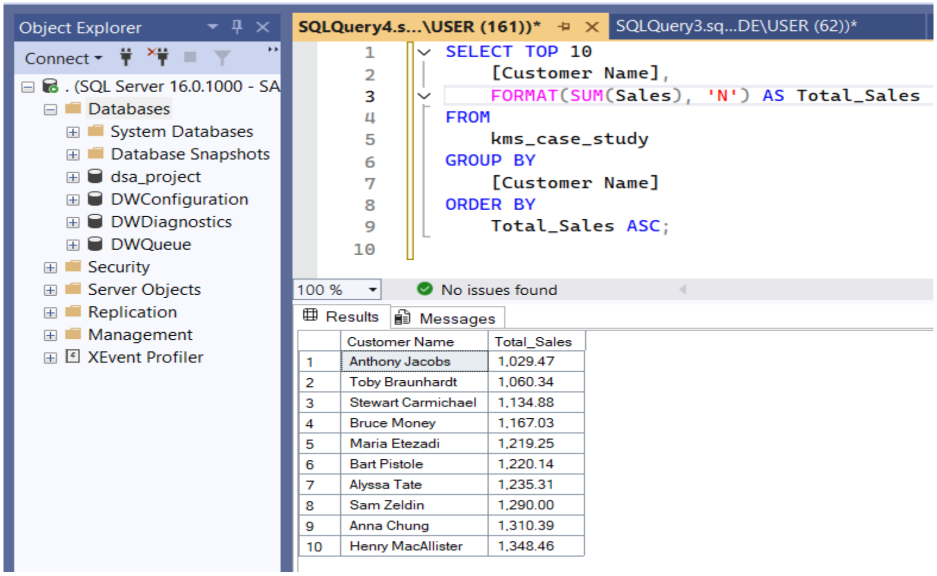


```
SELECT
    FORMAT(SUM(Sales), 'N') AS Appliance_Sales_Ontario
FROM
    kms_case_study
WHERE
    [Product Sub-Category] = 'Appliances'
    AND Province = 'Ontario';
```

	Appliance_Sales_Ontario
1	202,346.84

Task 4: Advise the management of KMS on what to do to increase the revenue from the bottom 10 customers

Step 1: Identify bottom 10 customers by total sales



```
SELECT TOP 10
    [Customer Name],
    FORMAT(SUM(Sales), 'N') AS Total_Sales
FROM
    kms_case_study
GROUP BY
    [Customer Name]
ORDER BY
    Total_Sales ASC;
```

No issues found

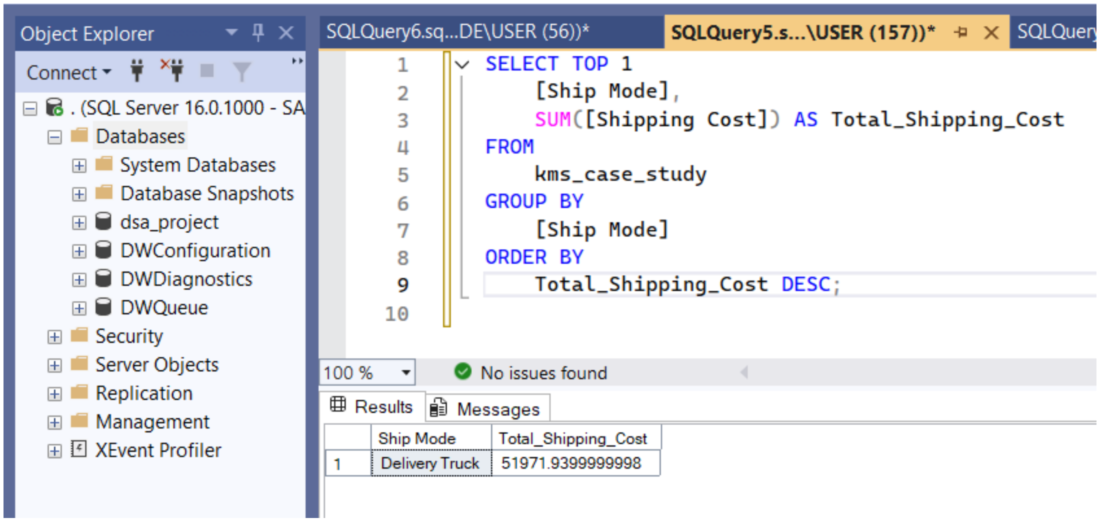
	Customer Name	Total_Sales
1	Anthony Jacobs	1,029.47
2	Toby Braunhardt	1,060.34
3	Stewart Carmichael	1,134.88
4	Bruce Money	1,167.03
5	Maria Etezadi	1,219.25
6	Bart Pistole	1,220.14
7	Alyssa Tate	1,235.31
8	Sam Zeldin	1,290.00
9	Anna Chung	1,310.39
10	Henry MacAllister	1,348.46

Step 2: Recommendation

1. Assign a dedicated business developer or team to rebuild the relationship by understanding their needs and what competitors offer them.
2. Offer product price and shipping cost discounts or loyalty rewards targeted at these customers.
3. Design a bespoke product combo for this set of customers. This offers beneficial discounts for the customer and higher quantity purchases for the KMS.
4. Assure faster shipping times for the few customers impacted by shipping delays.
5. Follow up with the customers through surveys, emails, and phone calls to address their needs and gather customer feedback.

Task 5: KMS incurred the most shipping cost using which shipping method?

```
SELECT TOP 1
   [Ship Mode],
   SUM([Shipping Cost]) AS Total_Shipping_Cost
FROM
   kms_case_study
GROUP BY
   [Ship Mode]
ORDER BY
   Total_Shipping_Cost DESC;
```



```
SELECT TOP 1
    [Ship Mode],
    SUM([Shipping Cost]) AS Total_Shipping_Cost
FROM
    kms_case_study
GROUP BY
    [Ship Mode]
ORDER BY
    Total_Shipping_Cost DESC;
```

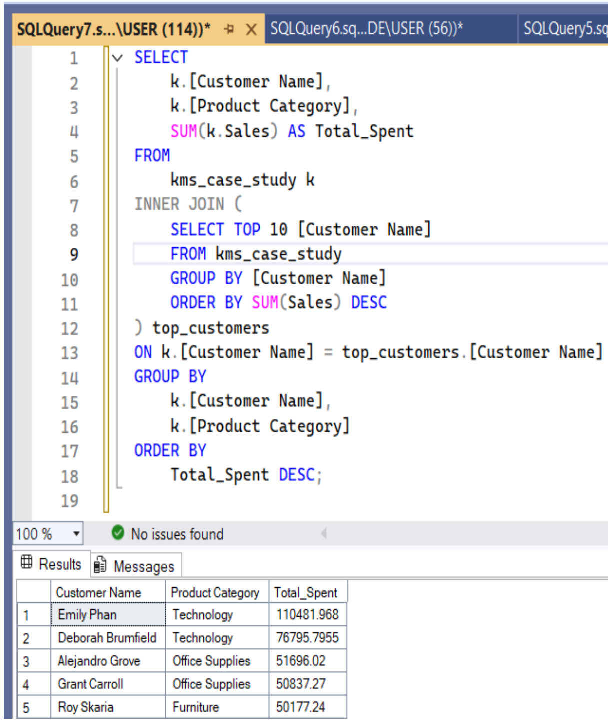
No issues found

	Ship Mode	Total_Shipping_Cost
1	Delivery Truck	51971.9399999998

Case Scenario II

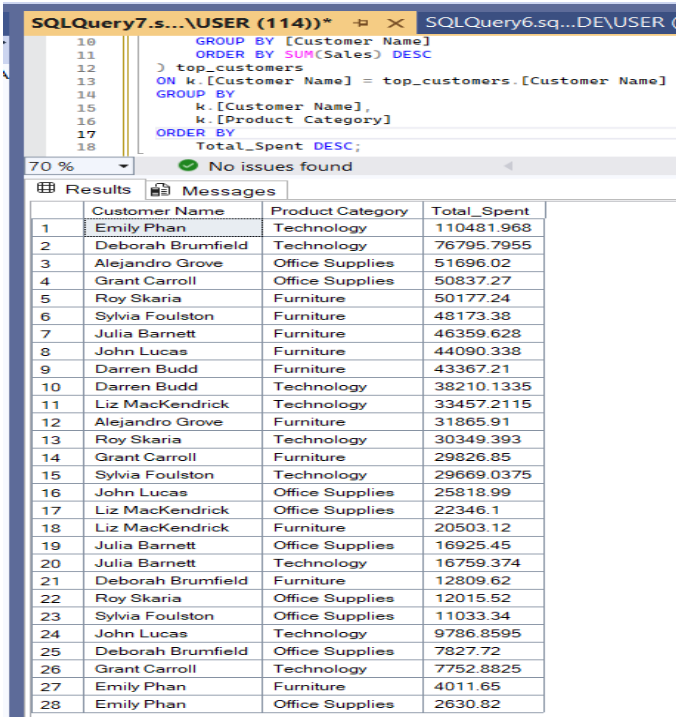
Task 6: Who are the most valuable customers, and what products or services do they typically purchase?

```
SELECT
   k.[Customer Name],
   k.[Product Category],
   SUM(k.Sales) AS Total_Spent
FROM
   kms_case_study k
INNER JOIN (
   SELECT TOP 10 [Customer Name]
   FROM kms_case_study
   GROUP BY [Customer Name]
   ORDER BY SUM(Sales) DESC
) top_customers
ON k.[Customer Name] = top_customers.[Customer Name]
GROUP BY
   k.[Customer Name],
   k.[Product Category]
ORDER BY
   Total_Spent DESC;
```



```
SELECT
    k.[Customer Name],
    k.[Product Category],
    SUM(k.Sales) AS Total_Spent
FROM
    kms_case_study k
INNER JOIN (
    SELECT TOP 10 [Customer Name]
    FROM kms_case_study
    GROUP BY [Customer Name]
    ORDER BY SUM(Sales) DESC
) top_customers
ON k.[Customer Name] = top_customers.[Customer Name]
GROUP BY
    k.[Customer Name],
    k.[Product Category]
ORDER BY
    Total_Spent DESC;
```

	Customer Name	Product Category	Total_Spent
1	Emily Phan	Technology	110481.968
2	Deborah Brumfield	Technology	76795.7955
3	Alejandro Grove	Office Supplies	51696.02
4	Grant Carroll	Office Supplies	50837.27
5	Roy Skaria	Furniture	50177.24

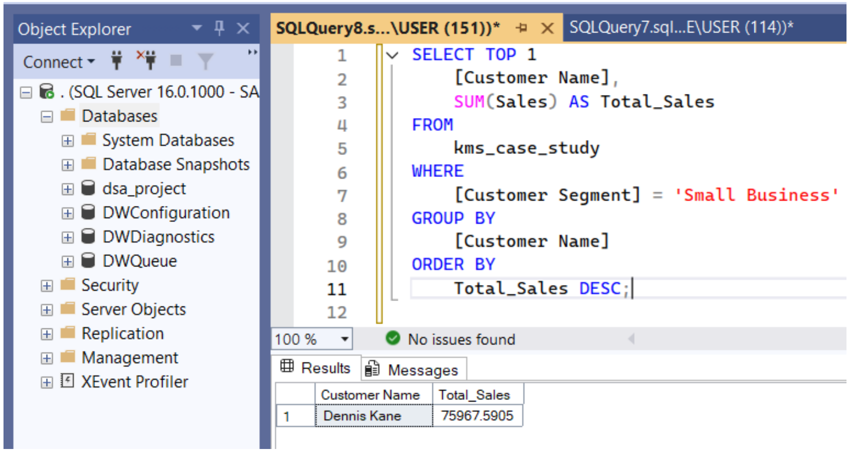


```
    GROUP BY [Customer Name]
    ORDER BY SUM(Sales) DESC
) top_customers
ON k.[Customer Name] = top_customers.[Customer Name]
GROUP BY
    k.[Customer Name],
    k.[Product Category]
ORDER BY
    Total_Spent DESC;
```

	Customer Name	Product Category	Total_Spent
1	Emily Phan	Technology	110481.968
2	Deborah Brumfield	Technology	76795.7955
3	Alejandro Grove	Office Supplies	51696.02
4	Grant Carroll	Office Supplies	50837.27
5	Roy Skaria	Furniture	50177.24
6	Sylvia Foulston	Furniture	48173.38
7	Julia Barnett	Furniture	46359.628
8	John Lucas	Furniture	44090.338
9	Darren Budd	Furniture	43367.21
10	Darren Budd	Technology	38210.1335
11	Liz MacKendrick	Technology	33457.2115
12	Alejandro Grove	Furniture	31865.91
13	Roy Skaria	Technology	30349.393
14	Grant Carroll	Furniture	29826.85
15	Sylvia Foulston	Technology	29669.0375
16	John Lucas	Office Supplies	25818.99
17	Liz MacKendrick	Office Supplies	22346.1
18	Liz MacKendrick	Furniture	20503.12
19	Julia Barnett	Office Supplies	16925.45
20	Julia Barnett	Technology	16759.374
21	Deborah Brumfield	Furniture	12809.62
22	Roy Skaria	Office Supplies	12015.52
23	Sylvia Foulston	Office Supplies	11033.34
24	John Lucas	Technology	9786.8595
25	Deborah Brumfield	Office Supplies	7827.72
26	Grant Carroll	Technology	7752.8825
27	Emily Phan	Furniture	4011.65
28	Emily Phan	Office Supplies	2630.82

Task 7: Which small business customer had the highest sales?

```
SELECT TOP 1
   [Customer Name],
   SUM(Sales) AS Total_Sales
FROM
   kms_case_study
WHERE
   [Customer Segment] = 'Small Business'
GROUP BY
   [Customer Name]
ORDER BY
   Total_Sales DESC;
```

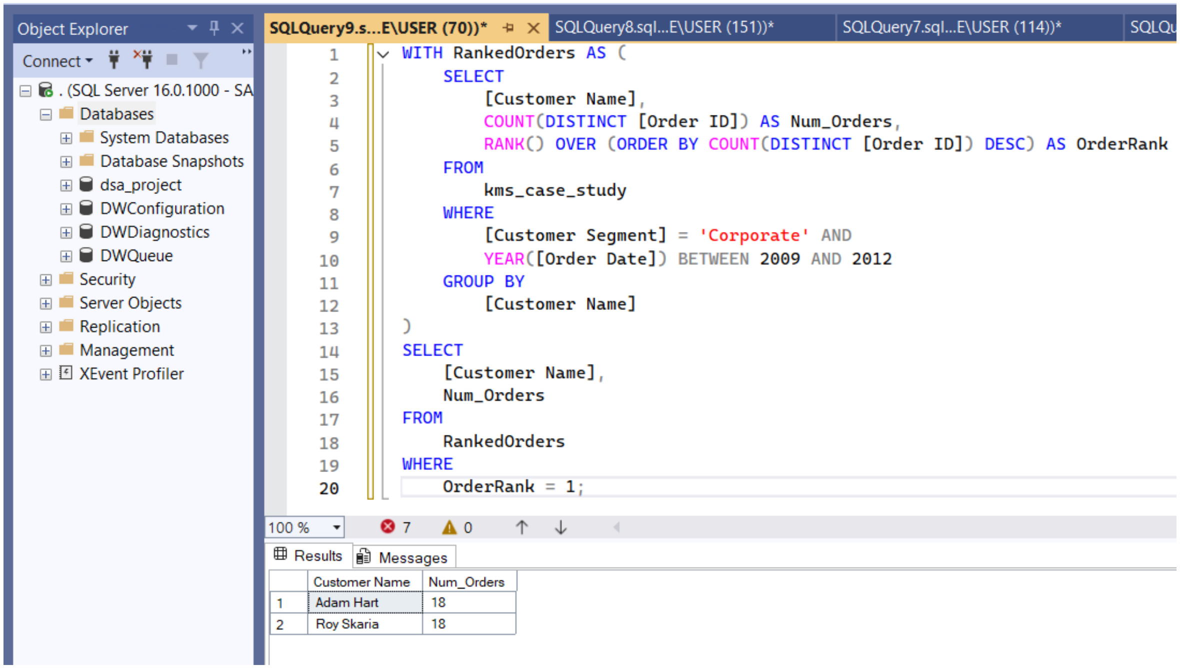


```sql
SELECT TOP 1
    [Customer Name],
    SUM(Sales) AS Total_Sales
FROM
    kms_case_study
WHERE
    [Customer Segment] = 'Small Business'
GROUP BY
    [Customer Name]
ORDER BY
    Total_Sales DESC;
```

	Customer Name	Total_Sales
1	Dennis Kane	75967.5905

Task 8: Which Corporate Customer placed the most number of orders in 2009–2012?

```
WITH RankedOrders AS (
  SELECT
    [Customer Name],
    COUNT(DISTINCT [Order ID]) AS Num_Orders,
    RANK() OVER (ORDER BY COUNT(DISTINCT [Order ID]) DESC) AS OrderRank
  FROM
    kms_case_study
  WHERE
    [Customer Segment] = 'Corporate' AND
    YEAR([Order Date]) BETWEEN 2009 AND 2012
  GROUP BY
    [Customer Name]
)
SELECT
  [Customer Name],
  Num_Orders
FROM
  RankedOrders
WHERE
  OrderRank = 1;
```

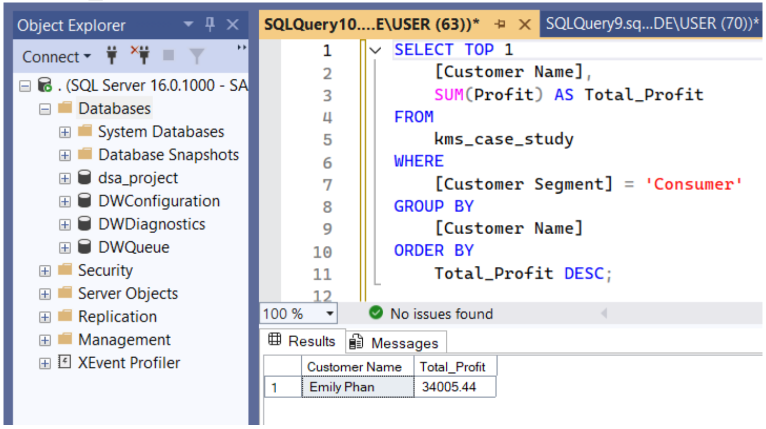


```sql
WITH RankedOrders AS (
    SELECT
        [Customer Name],
        COUNT(DISTINCT [Order ID]) AS Num_Orders,
        RANK() OVER (ORDER BY COUNT(DISTINCT [Order ID]) DESC) AS OrderRank
    FROM
        kms_case_study
    WHERE
        [Customer Segment] = 'Corporate' AND
        YEAR([Order Date]) BETWEEN 2009 AND 2012
    GROUP BY
        [Customer Name]
)
SELECT
    [Customer Name],
    Num_Orders
FROM
    RankedOrders
WHERE
    OrderRank = 1;
```

	Customer Name	Num_Orders
1	Adam Hart	18
2	Roy Skaria	18

Task 9: Which consumer customer was the most profitable one?

```
SELECT TOP 1
    [Customer Name],
    SUM(Profit) AS Total_Profit
FROM
    kms_case_study
WHERE
    [Customer Segment] = 'Consumer'
GROUP BY
    [Customer Name]
ORDER BY
    Total_Profit DESC;
```



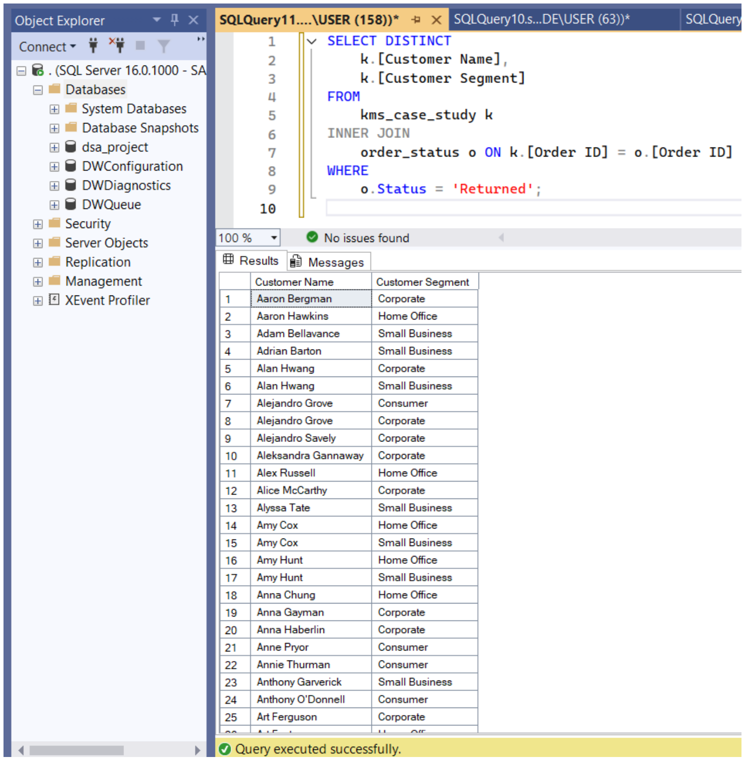
```
SELECT TOP 1
    [Customer Name],
    SUM(Profit) AS Total_Profit
FROM
    kms_case_study
WHERE
    [Customer Segment] = 'Consumer'
GROUP BY
    [Customer Name]
ORDER BY
    Total_Profit DESC;
```

No issues found

	Customer Name	Total_Profit
1	Emily Phan	34005.44

Task 10: Which customers returned items, and what segment do they belong to?

```
SELECT DISTINCT
    k.[Customer Name],
    k.[Customer Segment]
FROM
    kms_case_study k
INNER JOIN
    order_status o ON k.[Order ID] = o.[Order ID]
WHERE
    o.Status = 'Returned';
```



```
SELECT DISTINCT
    k.[Customer Name],
    k.[Customer Segment]
FROM
    kms_case_study k
INNER JOIN
    order_status o ON k.[Order ID] = o.[Order ID]
WHERE
    o.Status = 'Returned';
```

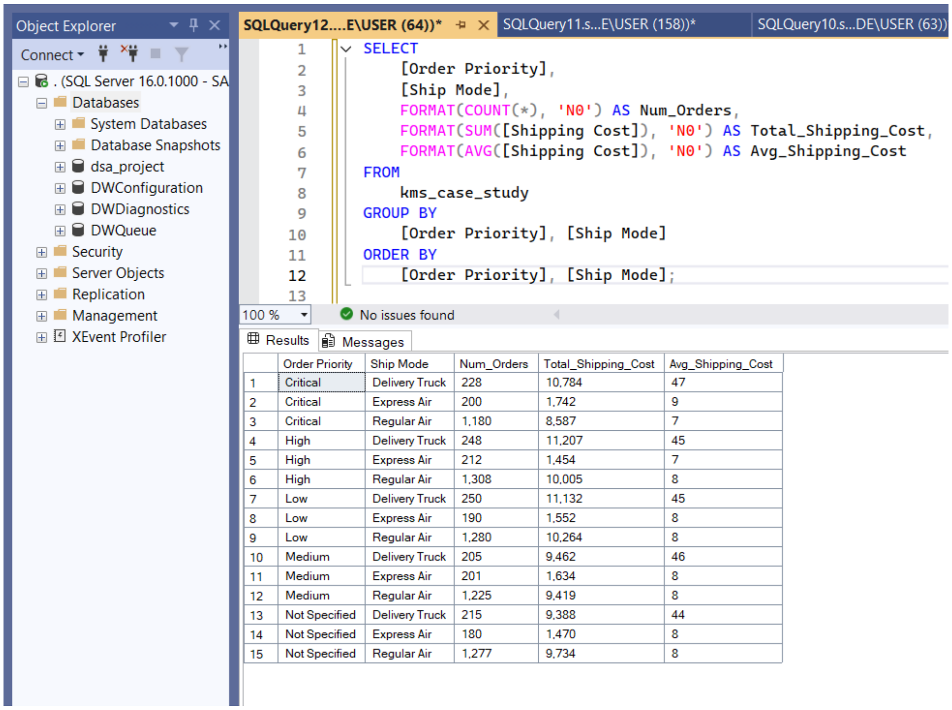
No issues found

	Customer Name	Customer Segment
1	Aaron Bergman	Corporate
2	Aaron Hawkins	Home Office
3	Adam Bellavance	Small Business
4	Adrian Barton	Small Business
5	Alan Hwang	Corporate
6	Alan Hwang	Small Business
7	Alejandro Grove	Consumer
8	Alejandro Grove	Corporate
9	Alejandro Savely	Corporate
10	Aleksandra Gannaway	Corporate
11	Alex Russell	Home Office
12	Alice McCarthy	Corporate
13	Alyssa Tate	Small Business
14	Amy Cox	Home Office
15	Amy Cox	Small Business
16	Amy Hunt	Home Office
17	Amy Hunt	Small Business
18	Anna Chung	Home Office
19	Anna Gayman	Corporate
20	Anna Haberlin	Corporate
21	Anne Pryor	Consumer
22	Annie Thurman	Consumer
23	Anthony Garverick	Small Business
24	Anthony O'Donnell	Consumer
25	Art Ferguson	Corporate

Query executed successfully.

Task 11: Was shipping cost aligned with order priority?

```
SELECT
    [Order Priority],
    [Ship Mode],
    FORMAT(COUNT(*), 'N0') AS Num_Orders,
    FORMAT(SUM([Shipping Cost]), 'N0') AS Total_Shipping_Cost,
    FORMAT(AVG([Shipping Cost]), 'N0') AS Avg_Shipping_Cost
FROM
    kms_case_study
GROUP BY
    [Order Priority], [Ship Mode]
ORDER BY
    [Order Priority], [Ship Mode];
```



```
SELECT
    [Order Priority],
    [Ship Mode],
    FORMAT(COUNT(*), 'N0') AS Num_Orders,
    FORMAT(SUM([Shipping Cost]), 'N0') AS Total_Shipping_Cost,
    FORMAT(AVG([Shipping Cost]), 'N0') AS Avg_Shipping_Cost
FROM
    kms_case_study
GROUP BY
    [Order Priority], [Ship Mode]
ORDER BY
    [Order Priority], [Ship Mode];
```

No issues found

	Order Priority	Ship Mode	Num_Orders	Total_Shipping_Cost	Avg_Shipping_Cost
1	Critical	Delivery Truck	228	10,784	47
2	Critical	Express Air	200	1,742	9
3	Critical	Regular Air	1,180	8,587	7
4	High	Delivery Truck	248	11,207	45
5	High	Express Air	212	1,454	7
6	High	Regular Air	1,308	10,005	8
7	Low	Delivery Truck	250	11,132	45
8	Low	Express Air	190	1,552	8
9	Low	Regular Air	1,280	10,264	8
10	Medium	Delivery Truck	205	9,462	46
11	Medium	Express Air	201	1,634	8
12	Medium	Regular Air	1,225	9,419	8
13	Not Specified	Delivery Truck	215	9,388	44
14	Not Specified	Express Air	180	1,470	8
15	Not Specified	Regular Air	1,277	9,734	8

The average cost per order for each shipping method;

- Delivery Truck: Approximately £45.35 per order (£51,972 / 1,146 orders).
- Express Air: Approximately £7.99 per order (£7,851 / 983 orders).
- Regular Air: Approximately £7.66 per order (£48,008 / 6,270 orders).

Upon analysis of the shipping data, a contradiction emerges regarding the cost-effectiveness of methods. The Delivery Truck, initially stated as the most economical, is actually the most expensive. Express Air, presumed the most costly, proves economical. Regular Air costs approximately £7.66 per order.

This misalignment impacts the assessment of appropriate spending. Regular Air dominates shipments across all priorities. However, the consistent use of the expensive Delivery Truck for all priorities, including lower ones, suggests inefficiency. Conversely, Express Air, a fast and economical option, is underutilized for critical and high-priority orders. Therefore, current shipping practices appear misaligned with an optimal balance of cost-efficiency and priority-driven speed. Re-evaluation of shipping method selection is recommended for improved expenditure management.