EDA Using Power BI

Project Title: Retail Sales Performance Analysis

Problem Statement

A nationwide retail company operates multiple stores across four regions (North, South, East, West). The business sells electronics and office supplies to different customer segments.

Senior management has noticed that overall revenue is growing, but profit margins are inconsistent across regions and products. Some regions report high sales but low profits, while others perform steadily.

The leadership team wants a single Power BI dashboard that:

• Cleans and validates raw sales data

• Identifies profitable and non-profitable products

• Highlights regional performance gaps

• Supports data-driven decisions for promotions and inventory planning

You are assigned as a Data Analyst to explore the data, build a robust data model, apply DAX calculations, and present actionable insights.

Questions:

• Identify missing values and duplicates in the Sales dataset. What cleaning steps are required?

• Perform univariate analysis on Sales and Profit. What distribution patterns do you observe?

• Which product categories contribute the highest revenue and profit?

• How does sales performance vary across regions?

• Create a star schema using Sales, Customer, and Product tables. Why is this model effective?

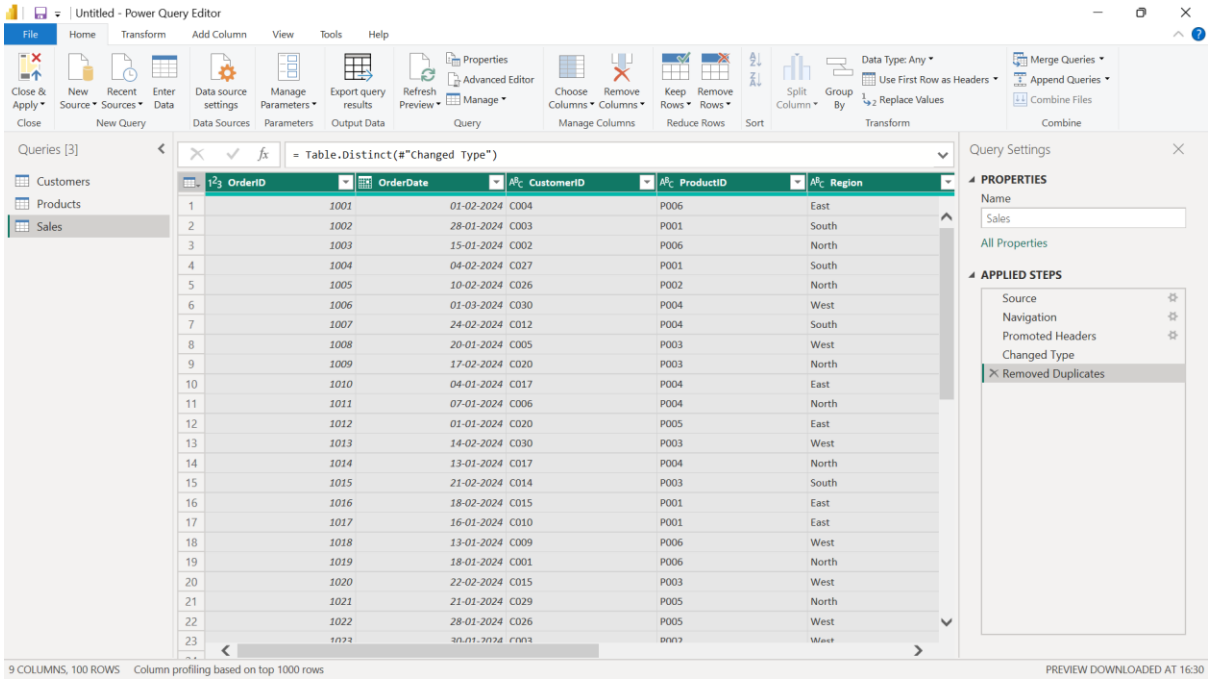
• Write a DAX measure to calculate Total Sales and Total Profit.

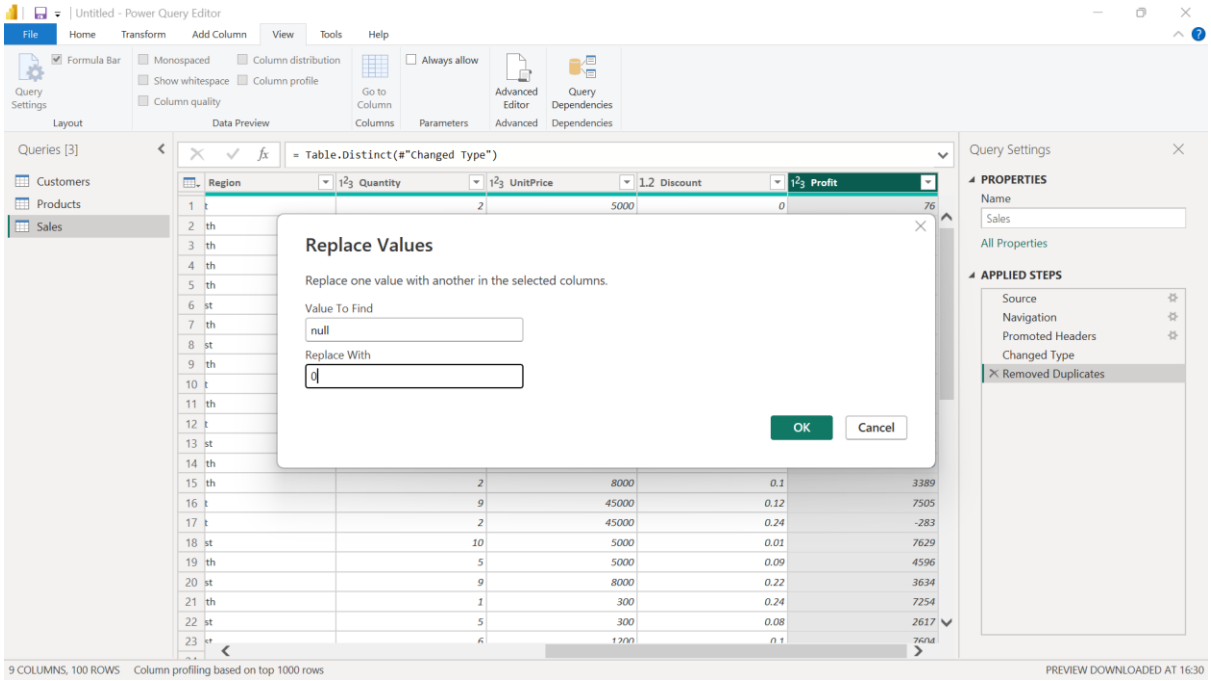
• Calculate Profit Margin (%) using DAX and identify low-margin products.

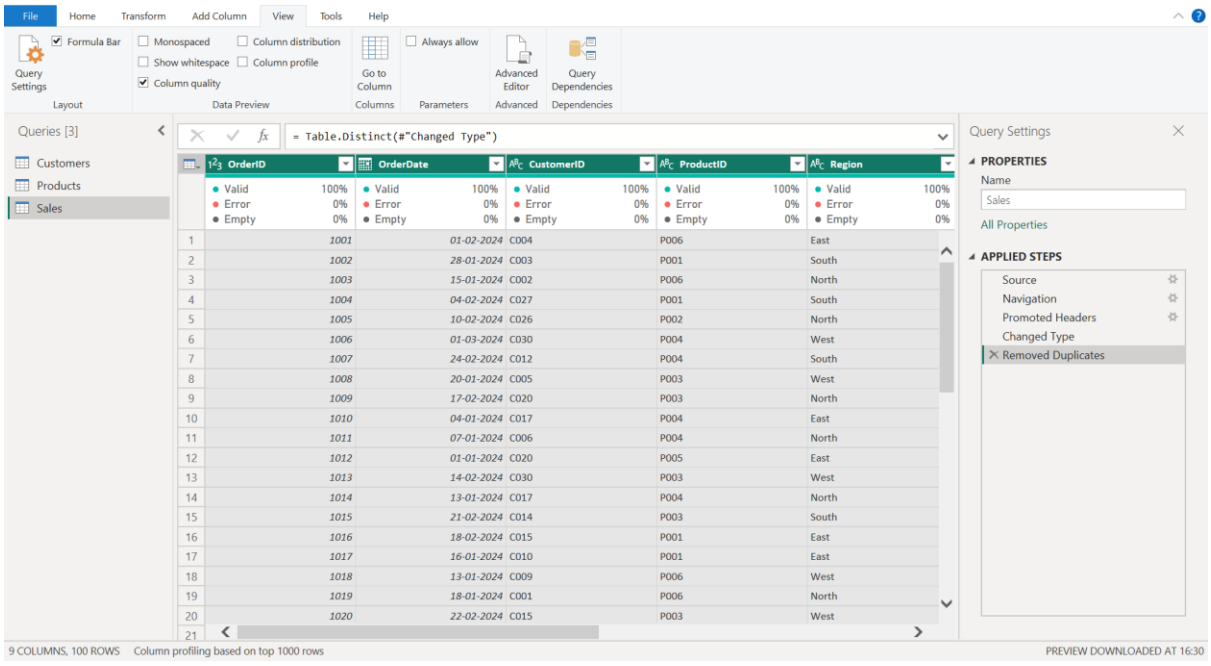
• Design a dashboard to show regional and category-wise performance.

• Which products should be discontinued or promoted based on analysis?

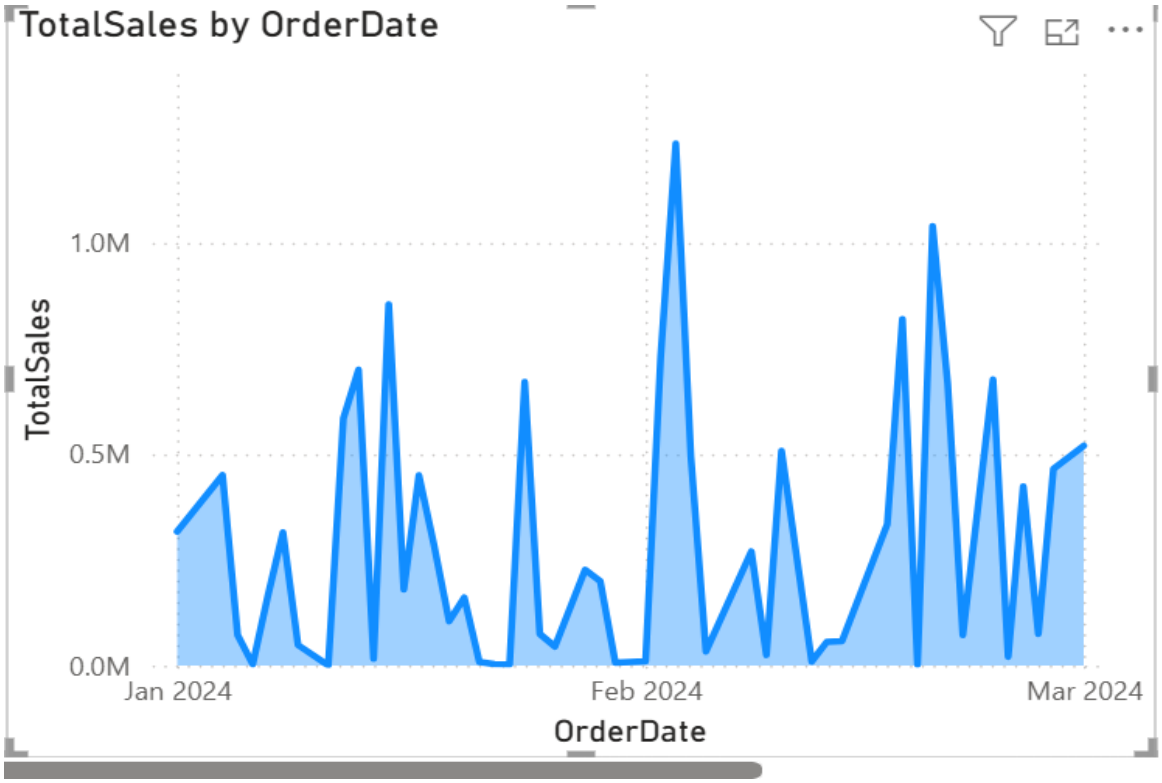
Identify missing or Duplicate Sales data.

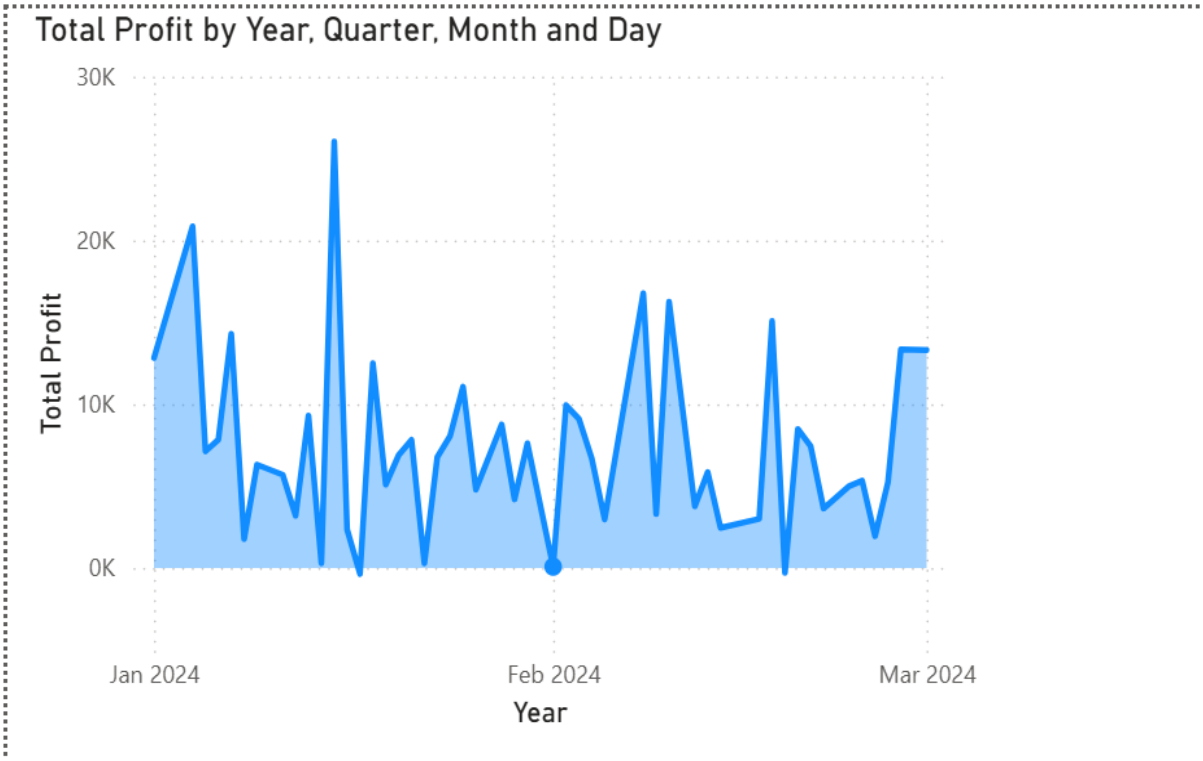




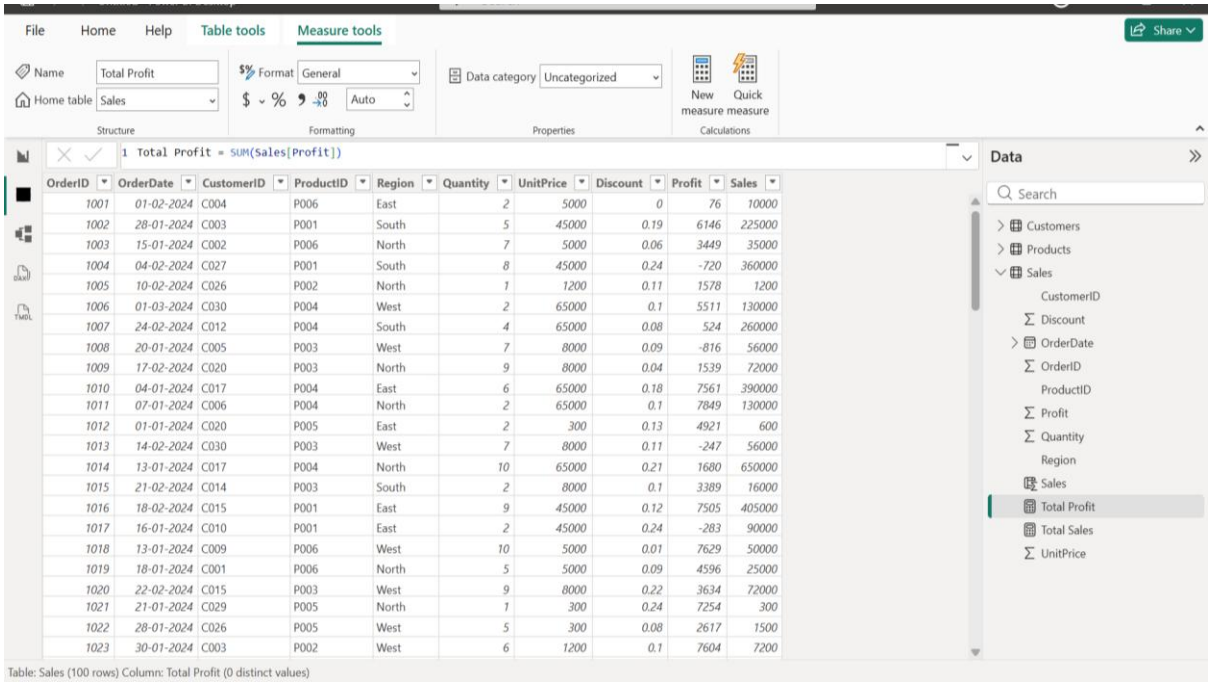


Univariate Analysis on Sales and Profit





product categories contribute the highest revenue and profit



OrderID	OrderDate	CustomerID	ProductID	Region	Quantity	UnitPrice	Discount	Profit	Sales
1001	01-02-2024	C004	P006	East	2	5000	0	76	10000
1002	28-01-2024	C003	P001	South	5	45000	0.19	6146	225000
1003	15-01-2024	C002	P006	North	7	5000	0.06	3449	35000
1004	04-02-2024	C027	P001	South	8	45000	0.24	-720	360000
1005	10-02-2024	C026	P002	North	1	1200	0.11	1578	1200
1006	01-03-2024	C030	P004	West	2	65000	0.1	5511	130000
1007	24-02-2024	C012	P004	South	4	65000	0.08	524	260000
1008	20-01-2024	C005	P003	West	7	8000	0.09	-816	56000
1009	17-02-2024	C020	P003	North	9	8000	0.04	1539	72000
1010	04-01-2024	C017	P004	East	6	65000	0.18	7561	390000
1011	07-01-2024	C006	P004	North	2	65000	0.1	7849	130000
1012	01-01-2024	C020	P005	East	2	300	0.13	4921	600
1013	14-02-2024	C030	P003	West	7	8000	0.11	-247	56000
1014	13-01-2024	C017	P004	North	10	65000	0.21	1680	650000
1015	21-02-2024	C014	P003	South	2	8000	0.1	3389	16000
1016	18-02-2024	C015	P001	East	9	45000	0.12	7505	405000
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1021	21-01-2024	C029	P005	North	1	300	0.24	7254	300
1022	28-01-2024	C026	P005	West	5	300	0.08	2617	1500
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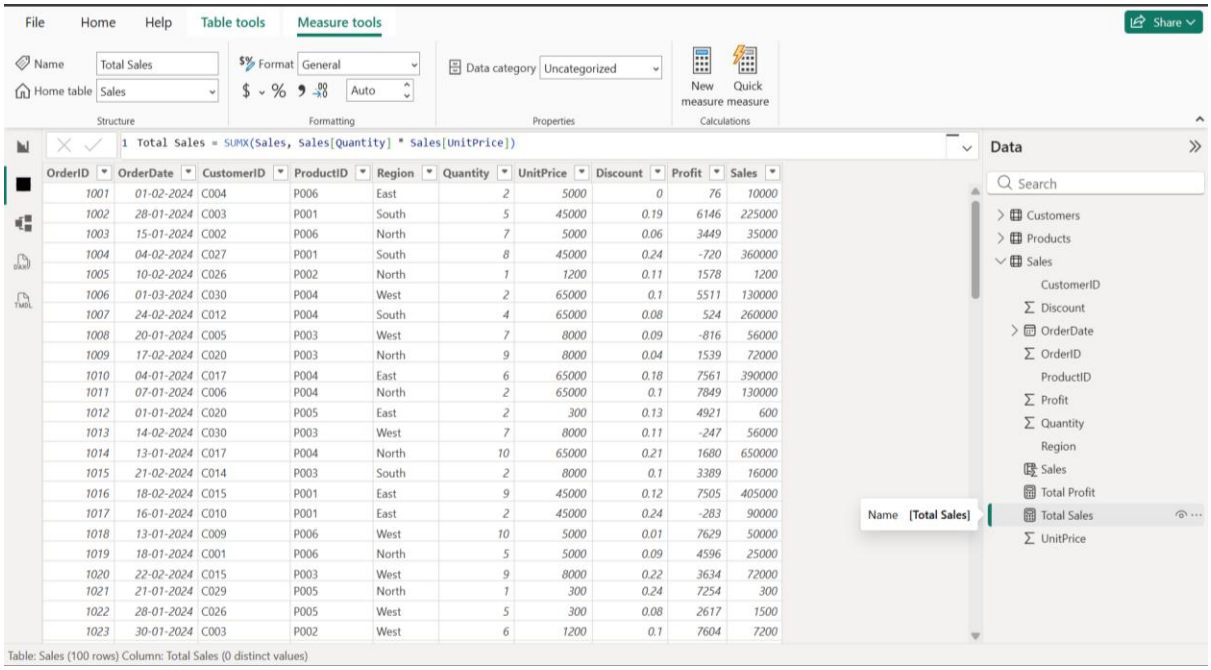

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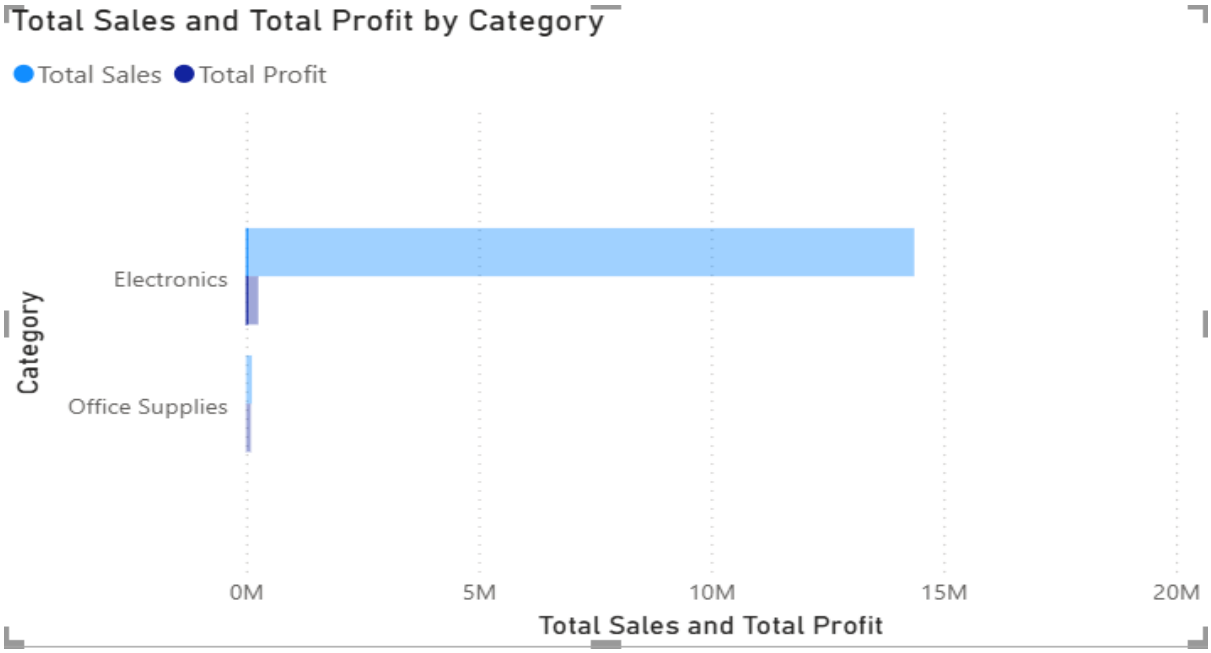
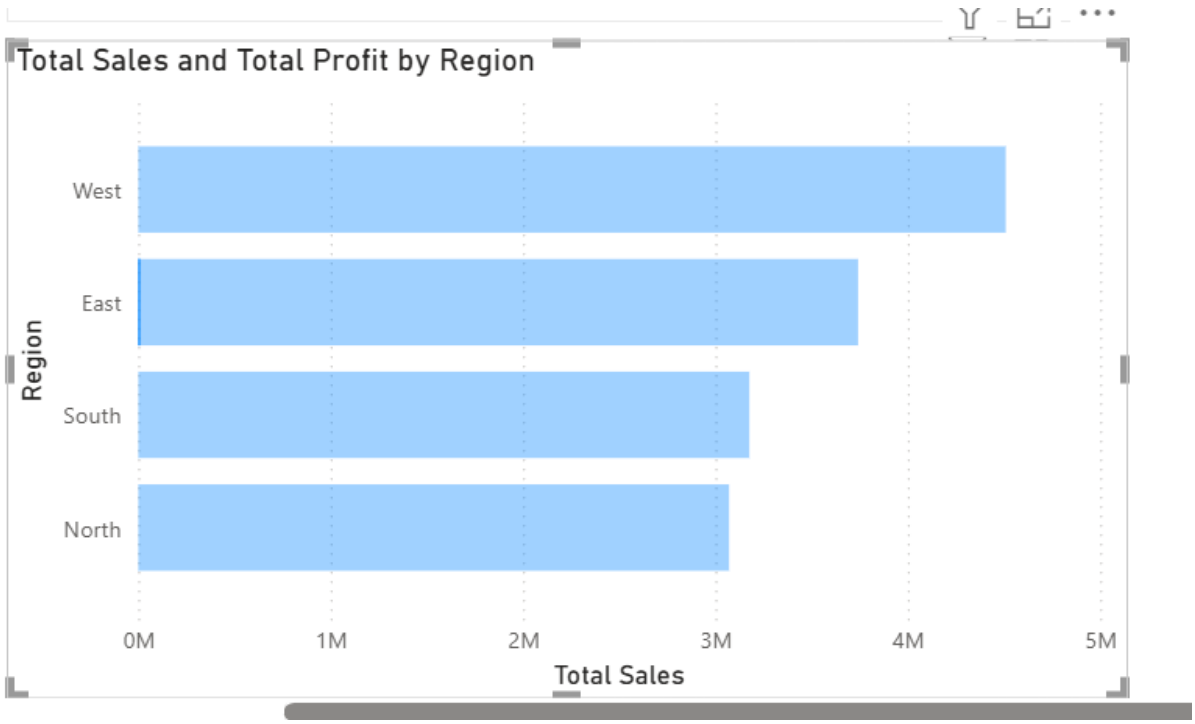
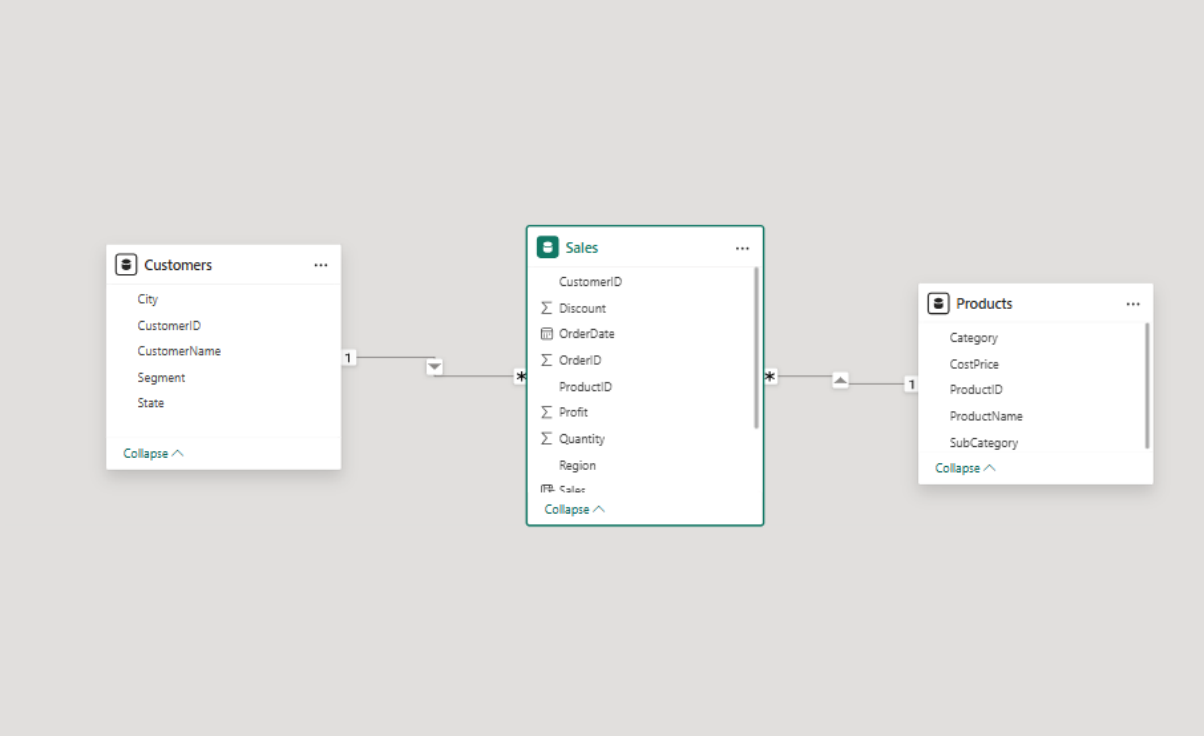


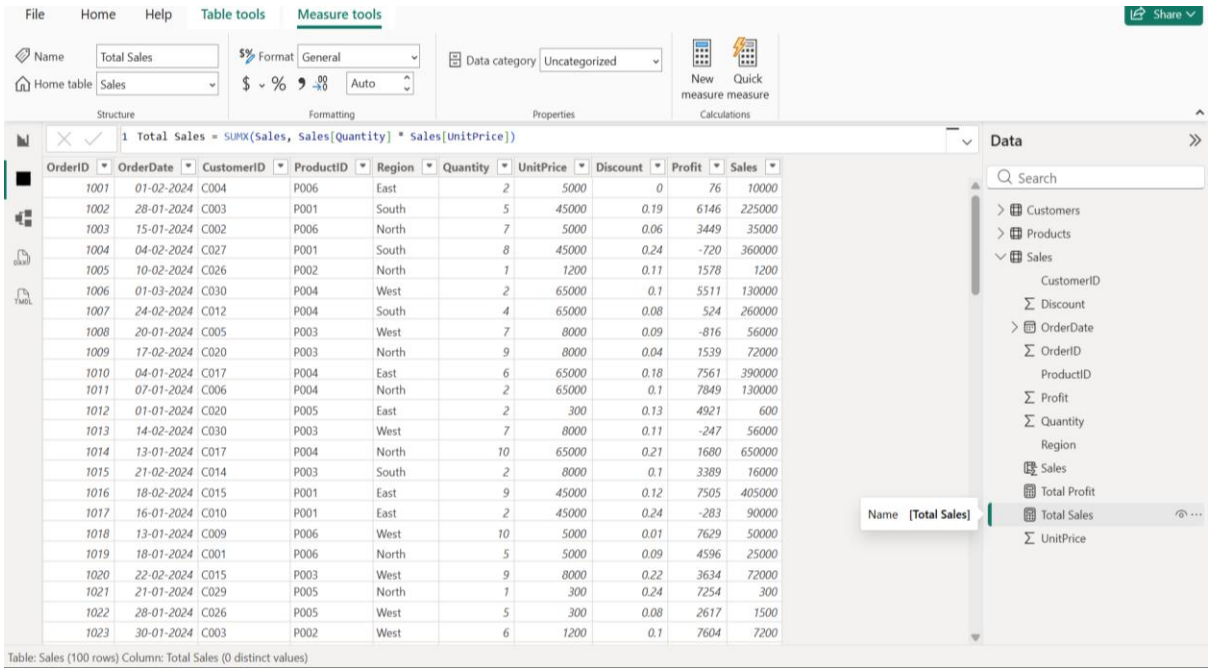
Sales performance vary across regions

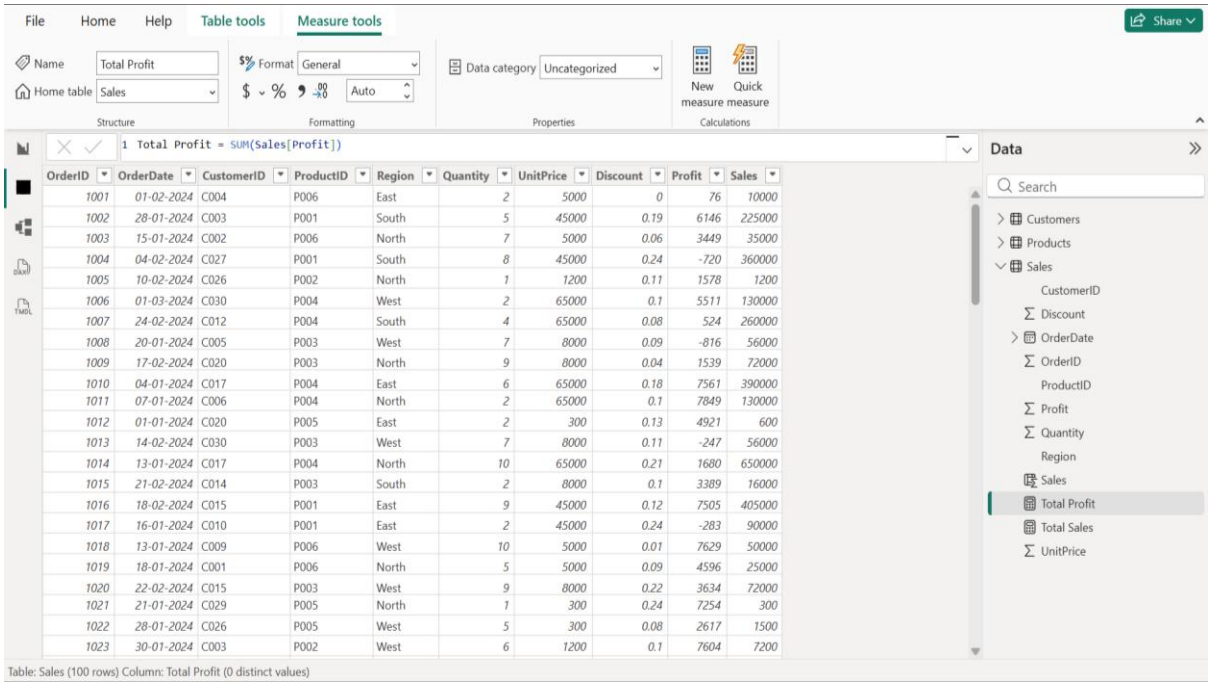


Star Schema using Sales, Customer, and Product Tables



DAX measure to calculate Total Sales and Total Profit.





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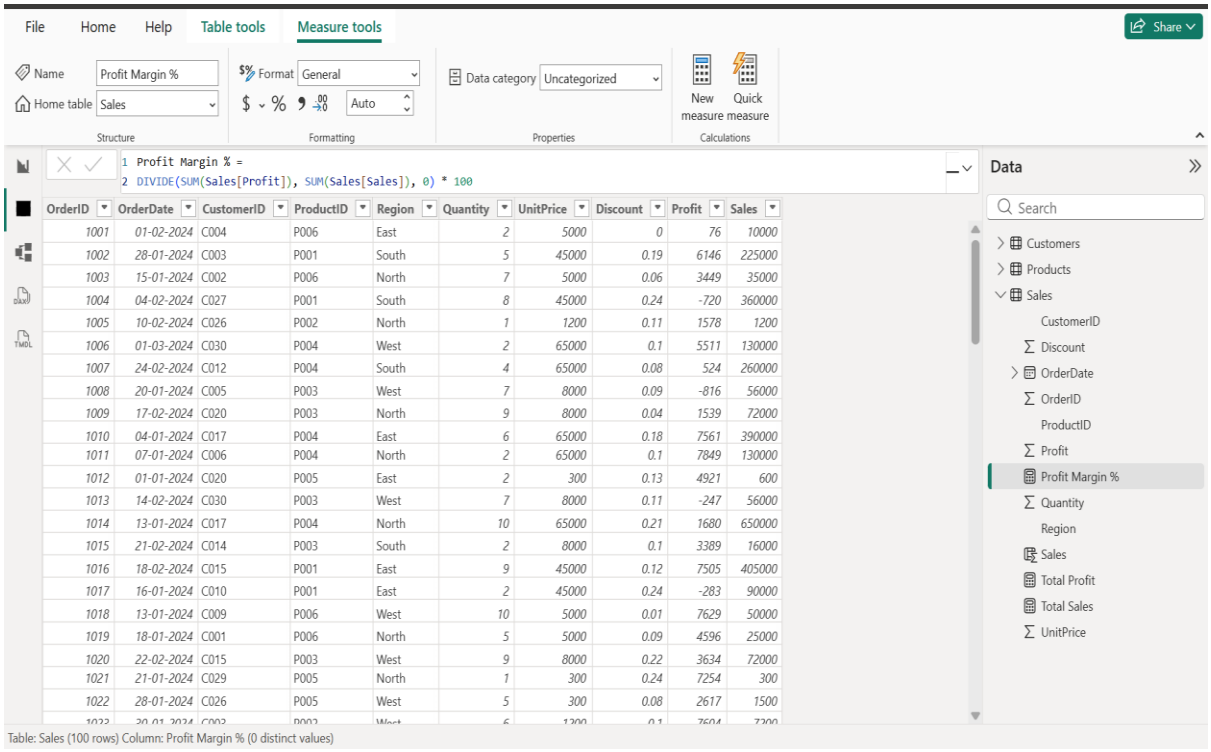
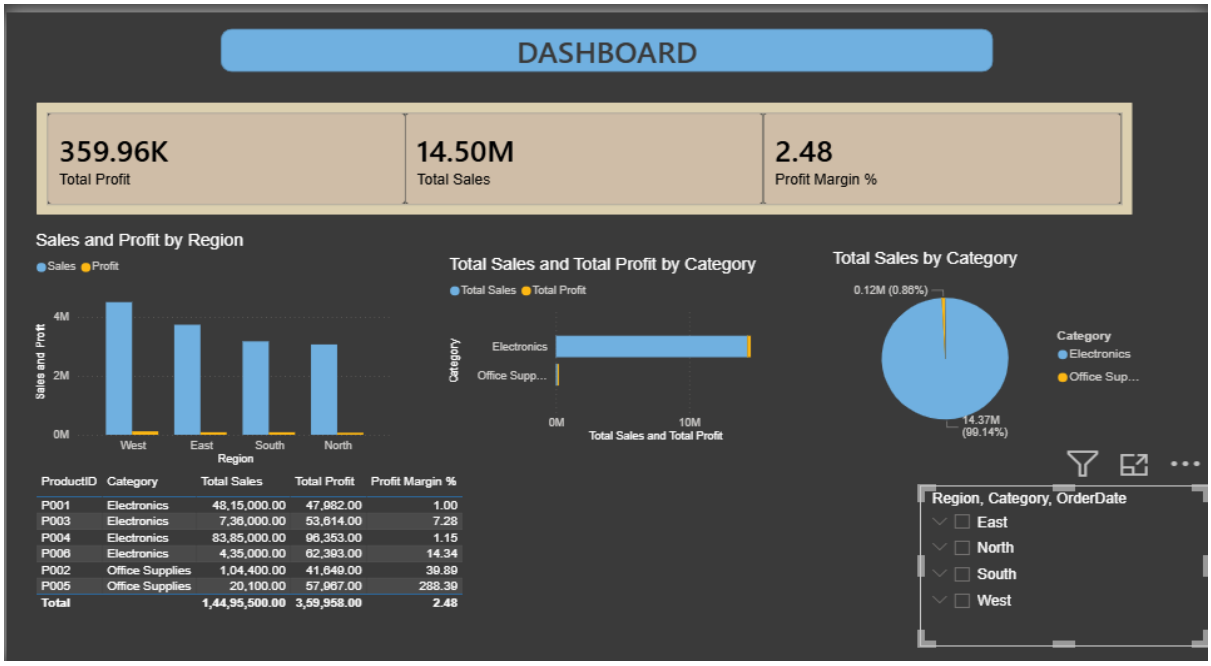
Profit Margin (%) and low-margin products



ProductID	Profit Margin %
P001	1.00
P004	1.15
P003	7.28
P006	14.34
P002	39.89
P005	288.39
Total	**2.48**

DashBoard



Discontinued or Promoted based on analysis

Products P001, P004, and P006 have very low profit margins, indicating that they contribute less to profitability. These products should be discontinued or their pricing and cost structure should be revised.

Products P002 and P005 show high profit margins and good sales performance. These products should be promoted through marketing campaigns and increased inventory to maximize business profit.