

# *BUSINESS ANALYST CAREER PROGRAM*

## **Capstone Project**

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# WESTERN COUNTRIES FINANCIAL DATA ANALYSIS



# ***INTRODUCTION***

**This Financial Data Analysis Capstone Project provided an in-depth examination of our organization's financial performance using a comprehensive and interactive Power BI dashboard. The project involved data exploration, statistical analysis with Excel, and SQL integration to clean, process, and visualize a financial dataset comprising 700 rows and 16 columns**

**By analyzing key metrics such as sales, COGS, and profit, and segmenting data by region, product, and customer type, the project aimed to uncover performance patterns and trends. The insights gained were used to inform strategic recommendations, supporting data-driven decision-making and optimizing business performance.**



# *Agenda Overview*

01 DATA EXPLORATION

02 STATISTICAL ANALYSIS USING EXCEL

03 GRAPHICAL ANALYSIS USING EXCEL

04 INSERT THE GIVEN DATA INTO THE SQL SERVER

05 IMPORT THE DATA FROM THE SQL DATABASE INTO POWERBI

06 NTERACTIVE DASHBOARD BY USING VISUALIZATION TOOLS

07 CONCLUSION AND INFERENCES

# 1. DATA EXPLORATION

- ❑ Firstly, Import and clean the western countries financial dataset, ensuring data accuracy and consistency. The dataset Contain 700 rows and 16 columns.
- ❑ Summarize key metrics such as sales, COGS, and profit. Segment the data by region, product, customer type, and time period to identify performance patterns.
- ❑ Analyze the impact of discounts on sales volume and profitability. Create visualizations to highlight key findings and identify trends.
- ❑ Summarize insights to inform strategic recommendations for optimizing business performance.

## Country wise sales & profit

Row Labels	Sum of Sales	Sum of COGS	Sum of Profit
Canada	20.96%	20.97%	20.89
France	20.51%	20.20%	22.38
Germany	19.80%	19.47%	21.79
Mexico	17.65%	17.72%	17.21
United States of America	21.08%	21.64%	17.73
Grand Total	100.00%	100.00%	100.00

## Product wise sales & Discount

Row Labels	Sum of Gross Sales	Sum of Discount	Sum of COGS	Sum of Sales
Amarilla	14.88%	14.02%	14.66%	14.95%
Carretera	11.68%	12.19%	11.77%	11.64%
Montana	12.94%	12.59%	13.04%	12.96%
Paseo	27.84%	28.25%	27.71%	27.80%
Velo	15.50%	17.13%	15.66%	15.37%
VTT	17.17%	15.82%	17.16%	17.28%
Grand Total	100.00%	100.00%	100.00%	100.00%



# 1. DATA EXPLORATION

## Country wise segment& sales

Sum of Sales	Column Label <span>▼↑</span>					
Row Labels	<span>▼↑</span> Channel Partner	Enterprise	Government	Midmarket	Small Busi	Grand Total
Canada	0.41%	3.34%	9.05%	0.43%	7.73%	20.96%
France	0.31%	3.28%	10.21%	0.50%	6.21%	20.51%
Germany	0.28%	3.44%	9.65%	0.25%	6.17%	19.80%
Mexico	0.20%	2.79%	8.25%	0.43%	5.98%	17.65%
United States of America	0.31%	3.66%	7.07%	0.39%	9.65%	21.08%
Grand Total	1.52%	16.52%	44.22%	2.01%	35.74%	100.00%

## Segment wise profit & unitsold

Row Labels	<span>▼↑</span> Sum of Profit	Sum of Units	Sum of Manufacturing P	Sum of Sale Price
Channel Partners	7.79%	14.32%	14.38%	1.45%
Enterprise	-3.64%	14.97%	14.07%	15.08%
Government	67.41%	41.81%	43.15%	45.48%
Midmarket	3.91%	15.29%	12.97%	1.81%
Small Business	24.52%	13.60%	15.43%	36.19%
Grand Total	100.00%	100.00%	100.00%	100.00%

# 1. DATA EXPLORATION

## Quarterly Country Wise& sales

Sum of Sales	Column Lab					
Row Labels	Canada	France	Germany	Mexico	United Sta	Grand Tot
2013	4.36%	4.32%	5.25%	4.00%	4.32%	22.25%
Qtr3	0.79%	0.69%	0.92%	0.54%	0.83%	3.78%
Qtr4	3.57%	3.63%	4.32%	3.46%	3.49%	18.47%
2014	16.60%	16.19%	14.55%	13.64%	16.77%	77.75%
Qtr1	2.93%	3.91%	2.28%	3.54%	3.76%	16.42%
Qtr2	4.30%	3.37%	3.66%	3.67%	4.12%	19.11%
Qtr3	3.37%	3.10%	3.29%	2.55%	4.84%	17.15%
Qtr4	6.00%	5.81%	5.32%	3.89%	4.04%	25.07%
Grand Total	20.96%	20.51%	19.80%	17.65%	21.08%	100.00%



## Product wise Gross sales & COGS

Row Labels	Average of Ma	Sum of Unit	Average of Sale	Sum of Gross	Sum of Discou	Sum of Sales	Sum of COGS	Sum of Profit
Amarilla	260	155315	128.680851	19037279.5	1290163.44	17747116.1	14933012	2814104.1
Carretera	3	146846	111.774194	14937520.5	1122212.62	13815307.9	11988503	1826804.9
Montana	5	154198	117.096774	16549834.5	1159032.62	15390801.9	13276047	2114754.9
Paseo	10	338240	108.178218	35611662.0	2600518.05	33011144.0	28213706	4797438.0
Velo	120	162425	115.238532	19826768.5	1576709.04	18250059.5	15944067	2305992.5
VTT	250	168783	138.587156	21968533.5	1456612.48	20511921.0	17477313	3034608.0
Grand Total	96.47714286	1125806	118.428571	127931598.5	9205248.24	118726350.3	101832648	16893702.3

# 1. DATA EXPLORATION – SUMMARY

- ❑ **Country-wise Sales, Profit, COGS** • USA: Highest in sales (21.08%) but lower profit margins (17.73%).
- Canada: Strong overall performance in sales (20.96%), COGS (20.97%), and profit (20.89%).
- France: Highest profit margin (22.38%) with strong sales (20.51%).
- Germany: Consistent across sales (19.80%), COGS (19.47%), and profit (21.79%).
- Mexico: Lowest sales (17.65%) and profit (17.21%).

- ❑ **Segment Performance** • Government: Dominates profit (67.41%) and units sold (41.81%).
- Small Business: High profit margin (24.52%).
- Enterprise: Negative profit (-3.64%).

- ❑ **Financial Performance** • 2014: Strong sales growth across all regions, especially in Q3 and Q4.
- 2013: Lower overall sales, notable Q4 performance.

- ❑ **Product Performance**

- Paseo: Leading in gross sales (27.84%) and profit (27.17%), driven by high discounts (28.25%).
- VTT: High average sale price (138.59) and solid profit contribution (17.28%).
- Amarilla, Carretera, Montana: Underperforming in sales and profit.



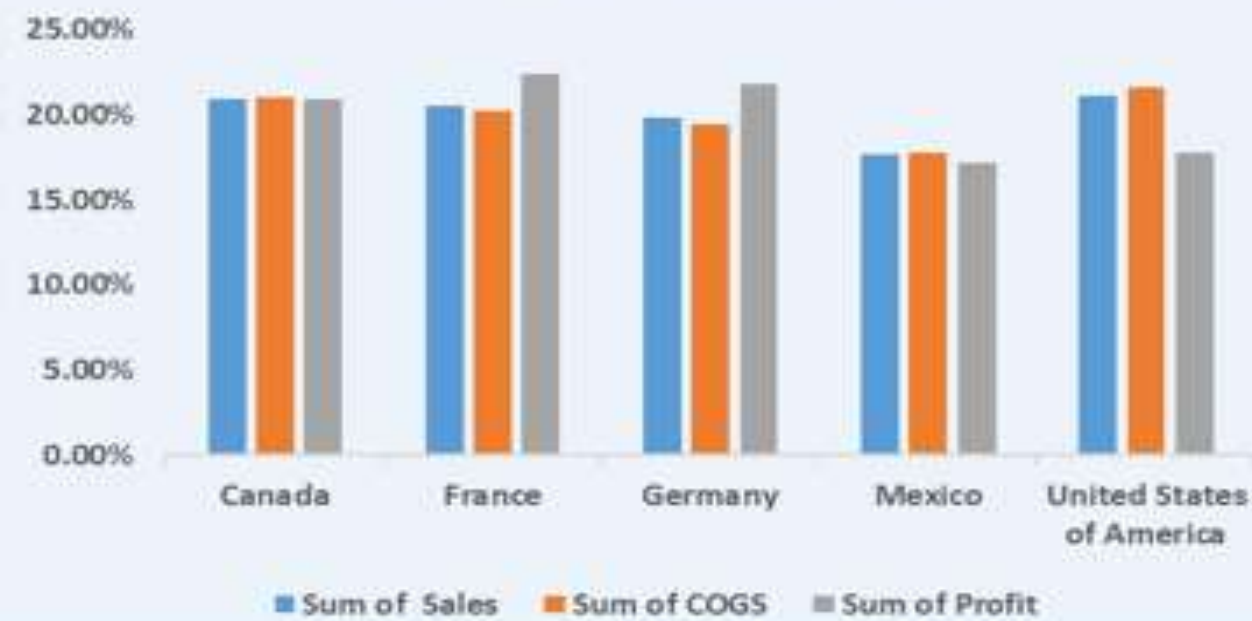
# 2 . STATISTICAL ANALYSIS USING EXCEL

		DESCRIPTIVE ANALYSIS						
Statistical Value	Units Sold	Manufacturing Price	Sales Price	Gross Sales	Discounts	Sales	COGS	Profit
Average(Mean)	\$1.61k	\$96	\$118.43	\$182.76k	\$13.15k	\$169.61k	\$145.48k	\$24.13k
Mode	727	\$10	\$20	\$37.05k	\$0.00k	\$32.67k	\$17.43k	\$2.01k
Median	\$1.54k	\$10	\$20	\$37.98k	\$2.59k	\$35.54k	\$22.51k	\$9.24k
Sum	1.1M	\$0.1M	\$0.1M	\$127.9M	\$9.2M	\$118.7M	\$101.83M	\$16.89M
Maximum Value	4.49k	\$260	\$350	\$1207.5k	\$149.68k	\$1159.20k	\$950.63k	\$262.20k
Minimum Value	0.20k	\$3	\$7	\$1.8k	0	\$1.66k	\$0.92k	-\$40.62k
Range	4.29k	\$0.26k	\$0.34k	\$1205.70k	\$149.68k	\$1157.54k	\$949.71k	\$302.82k
Standard Deviation	0.87k	\$0.1k	\$0.1k	\$254.3k	\$22.96k	\$236.73k	\$203.87k	\$42.76k
Variance	752.43k	\$11.8k	\$18.7k	\$64649.3M	\$527.30M	\$56039.36M	\$41561.14M	\$1828.47M
First Quartile	0.91k	\$5	\$12	\$17.4k	\$0.80k	\$15.93k	\$7.49k	\$2.80k
Third Quartile	2.23k	\$250	\$300	\$282.7k	\$16.04k	\$262.07k	\$246.20k	\$22.66k
			CORELATION					
	Units Sold	Manufacturing Price	Sale Price	Gross Sales	Discount	Sales	COGS	Profit
Units Sold	1							
Manufacturing Price	-0.02964397	1						
Sale Price	-0.06506581	0.070786368	1					
Gross Sales	0.327220663	0.049852242	0.808250197	1				
Discounts	0.253047977	0.020578153	0.641689008	0.7824848	1			
Sales	0.326913973	0.051549017	0.805877694	0.998174241	0.7434468	1		
COGS	0.331694393	0.046856756	0.799335437	0.994518745	0.7829299	0.992243772	1	
Profit	0.228436907	0.061985391	0.650494657	0.784508486	0.3830869	0.805462194	0.7255445	1

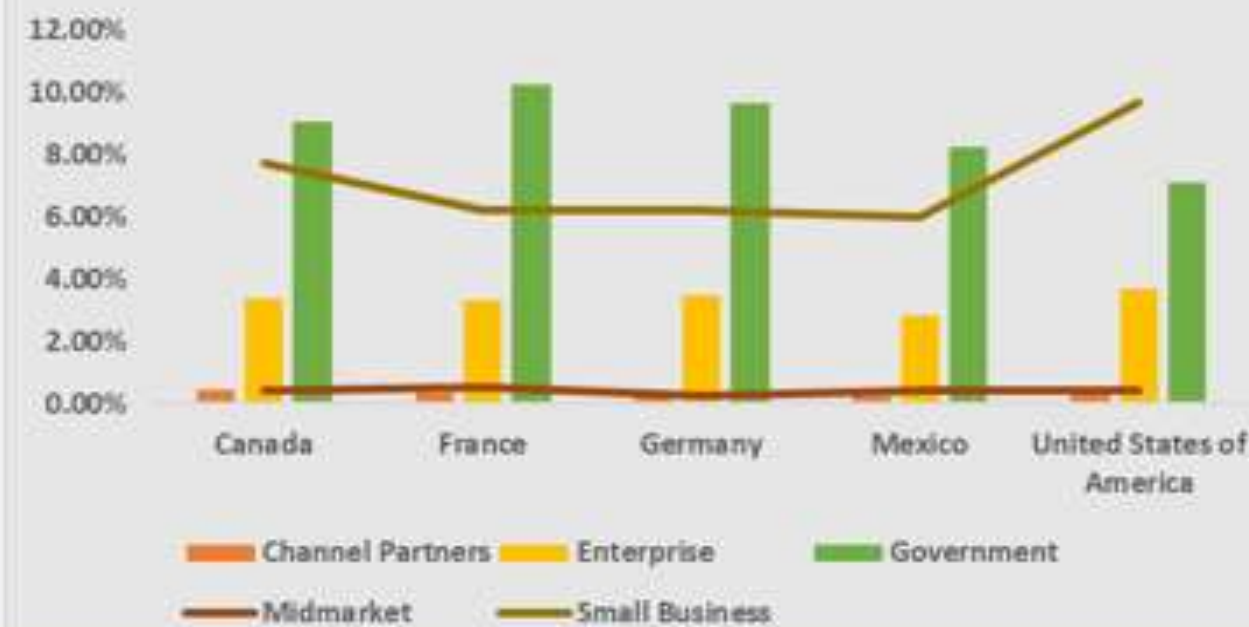
# 2.GRAPHICAL ANALYSIS USING EXCEL

## Graphical Analysis Dashboard

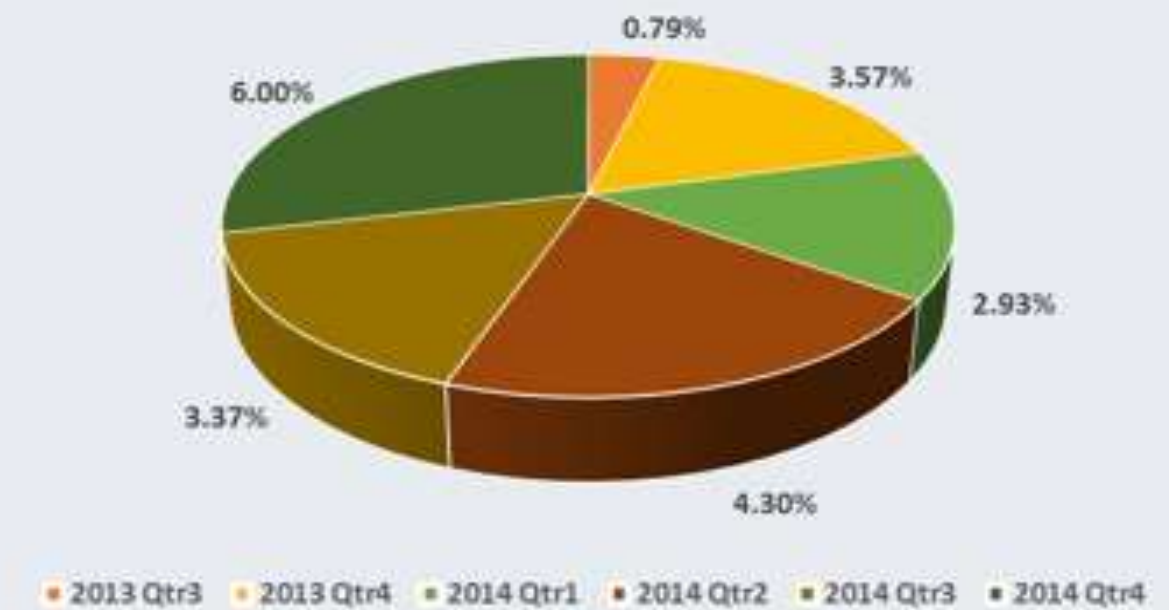
Country wise Sales & Profit



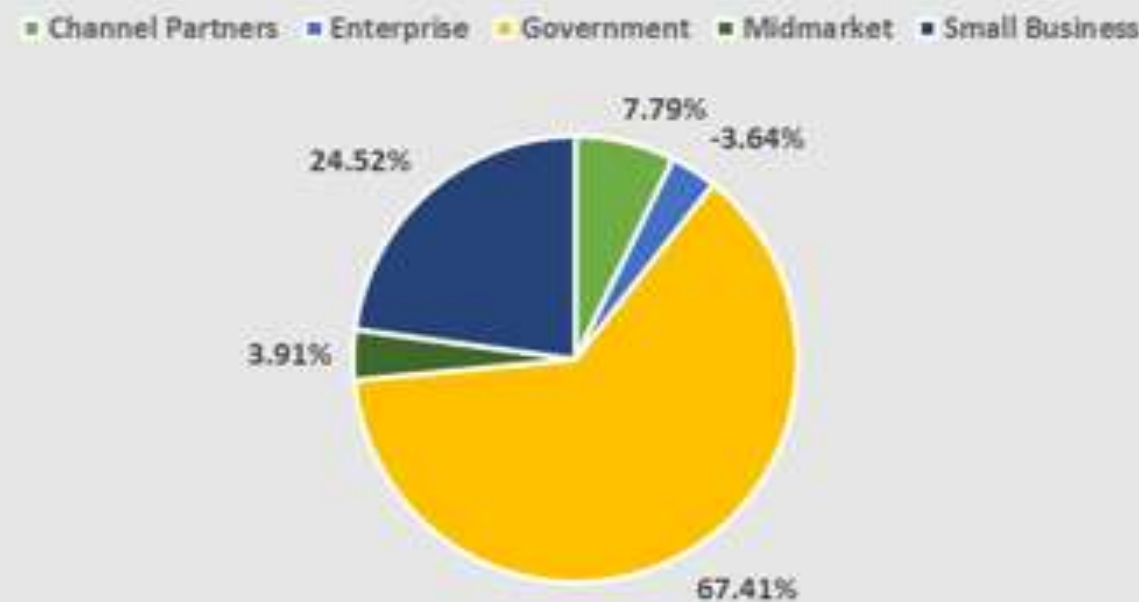
Country wise Segment & sales



Quarterly Countrywise & sales



Segment wise Profit & Unit sold



Product Wise sales & Discounts



Product Wise Gross Sales & COGS

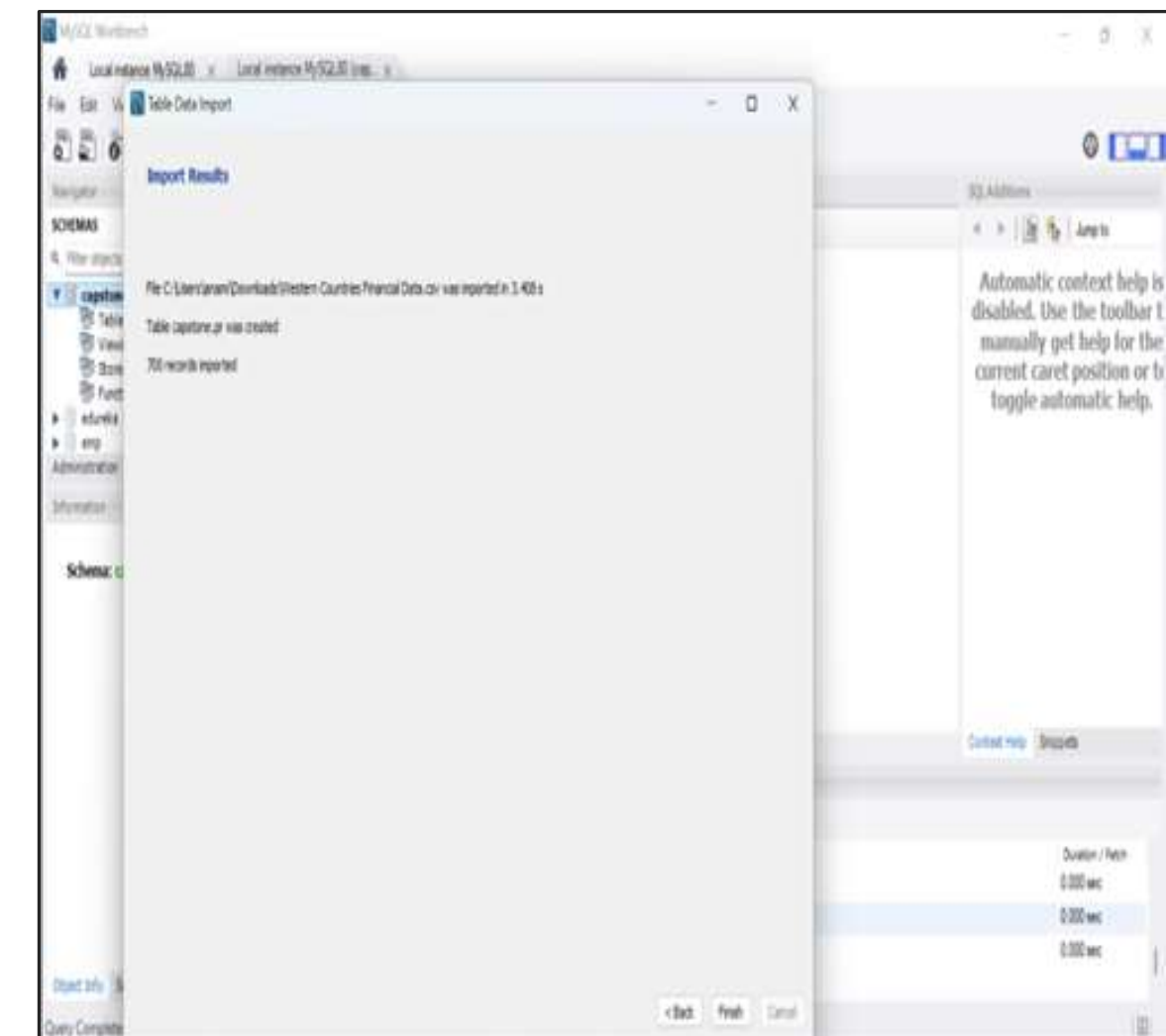
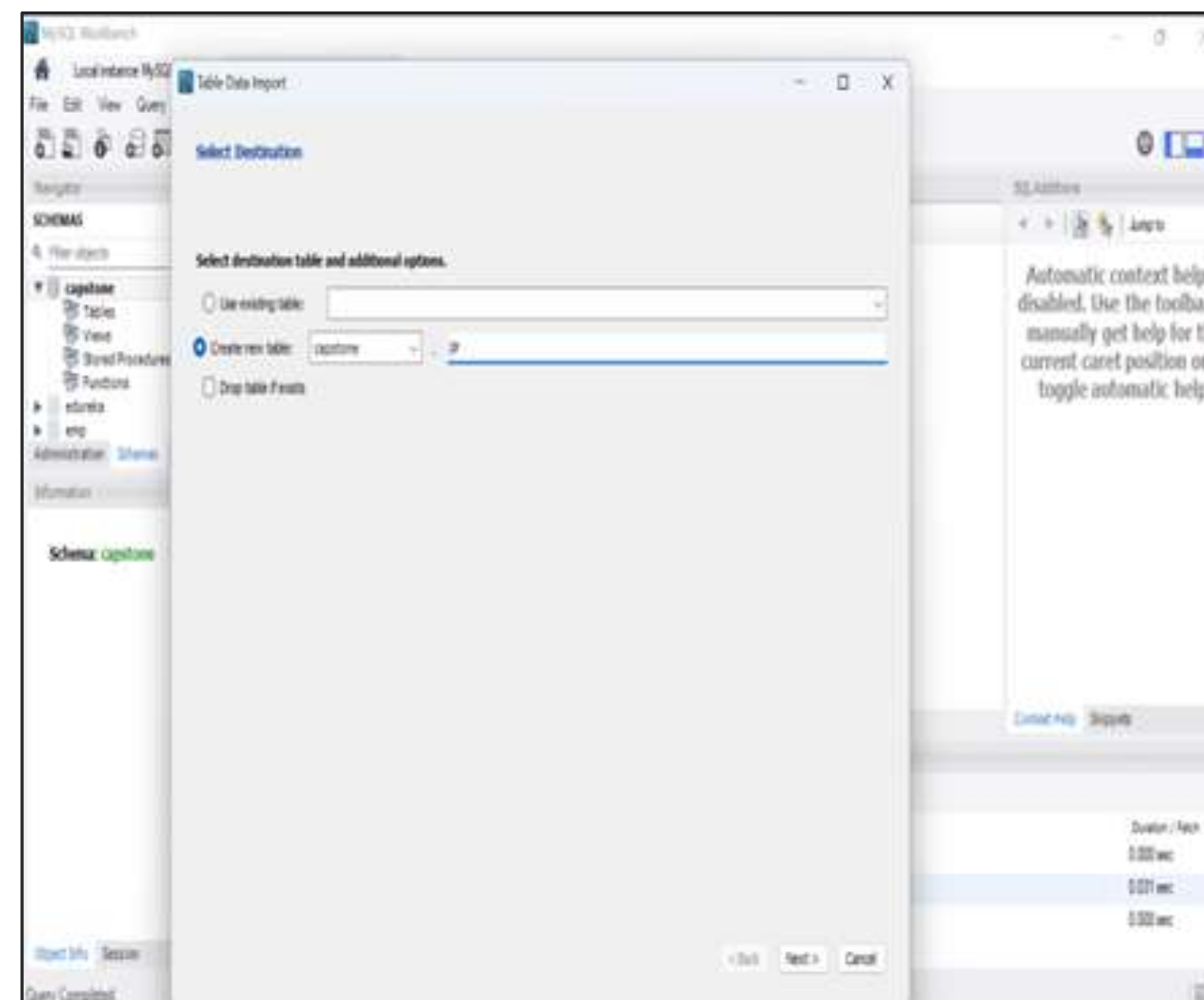
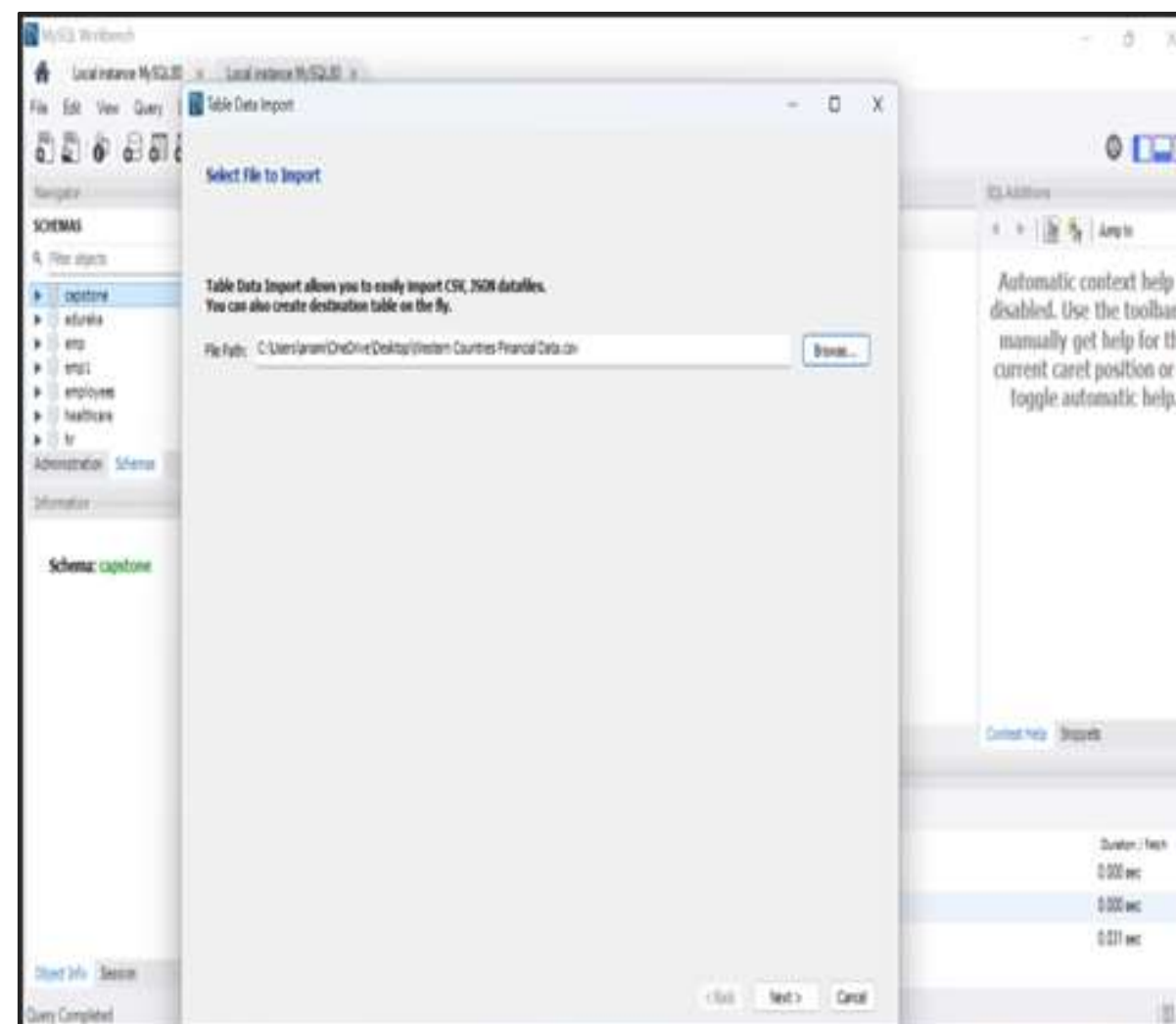
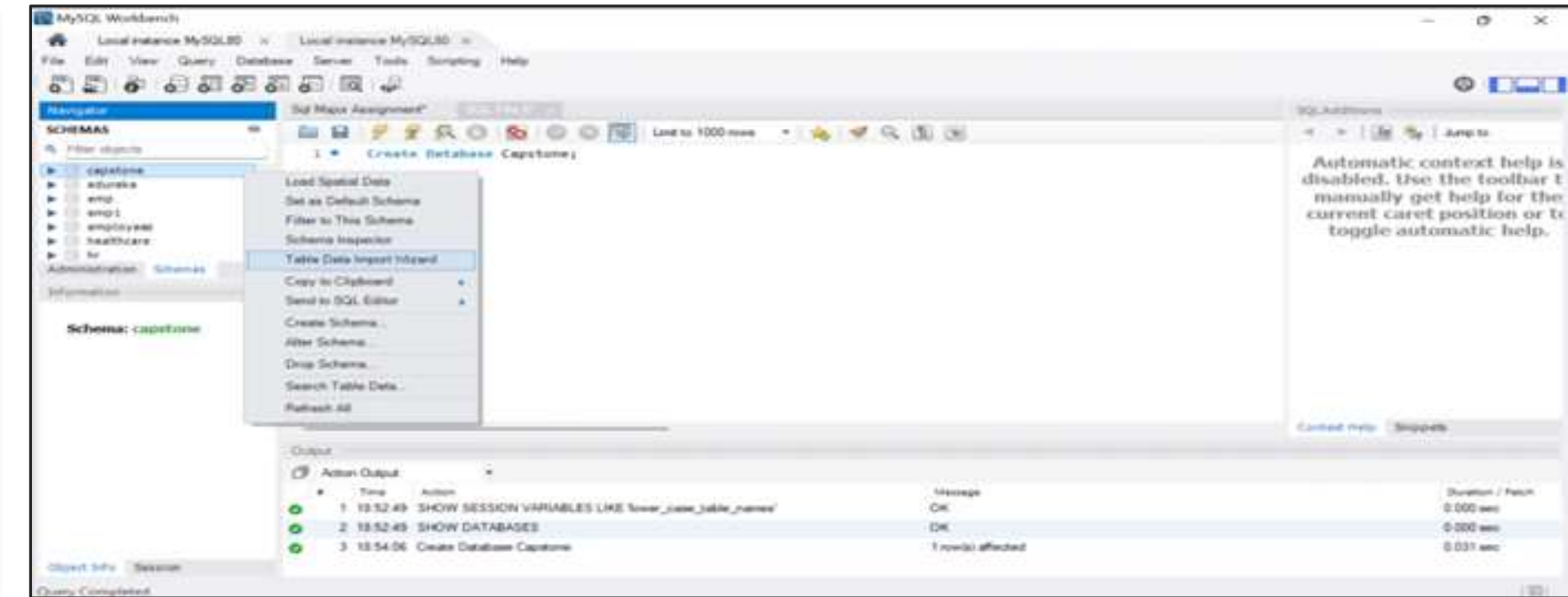




# 4. INSERT THE GIVEN DATA INTO THE SQL SERVER

## Steps:-

- ❖ Set up a new database in SQL Server, and define tables with appropriate data types to match the structure of the dataset.
- ❖ Use SQL Server, Right-click on the schema and select “Table Data Import Wizard” and command to load the dataset from an CSV file into the created tables.
- ❖ Run SELECT queries to ensure the data has been correctly imported and is accurately represented in the tables.





## 4. INSERT THE GIVEN DATA INTO THE SQL SERVER

MySQL Workbench interface showing a query execution. The query is `select * from pr`. The results are displayed in a table with columns: Segment, Country, Product, Discount Band, Units Sold, Manufacturing Price, Sale Price, Gross Sales, Discounts, Sales, and COG.

Segment	Country	Product	Discount Band	Units Sold	Manufacturing Price	Sale Price	Gross Sales	Discounts	Sales	COG
Government	Canada	Cantera	None	218.5	\$3	\$20	\$32,370	\$0	\$32,370	\$16.1
Government	Germany	Cantera	None	1221	\$3	\$20	\$26,420	\$0	\$26,420	\$13.2
Midmarket	France	Cantera	None	2170	\$3	\$15	\$32,670	\$0	\$32,670	\$15.1
Midmarket	Germany	Cantera	None	888	\$3	\$15	\$13,320	\$0	\$13,320	\$8.88
Midmarket	Mexico	Cantera	None	2470	\$3	\$15	\$37,050	\$0	\$37,050	\$14.1
Government	Germany	Cantera	None	1513	\$3	\$200	\$5,26,550	\$0	\$5,26,550	\$5.15
Midmarket	Germany	Montana	None	921	\$3	\$15	\$13,815	\$0	\$13,815	\$9.21
Channel Partners	Canada	Montana	None	76.8	\$5	\$17	\$10,716	\$0	\$10,716	\$7.17

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

MySQL Workbench interface showing a query execution. The query is `select Sales , Profit from pr`. The results are displayed in a table with columns: Sales, Profit.

Sales	Profit
\$32,370	\$16,185
\$26,420	\$13,210
\$32,670	\$16,335
\$13,320	\$6,660
\$37,050	\$18,525
\$5,26,550	\$2,63,275
\$13,815	\$6,907
\$30,216	\$15,108
\$17,960	\$8,980

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

MySQL Workbench interface showing a query execution. The query is `SELECT Segment, COUNT(*) AS Count FROM pr GROUP BY Segment`. The results are displayed in a table with columns: Segment, Count.

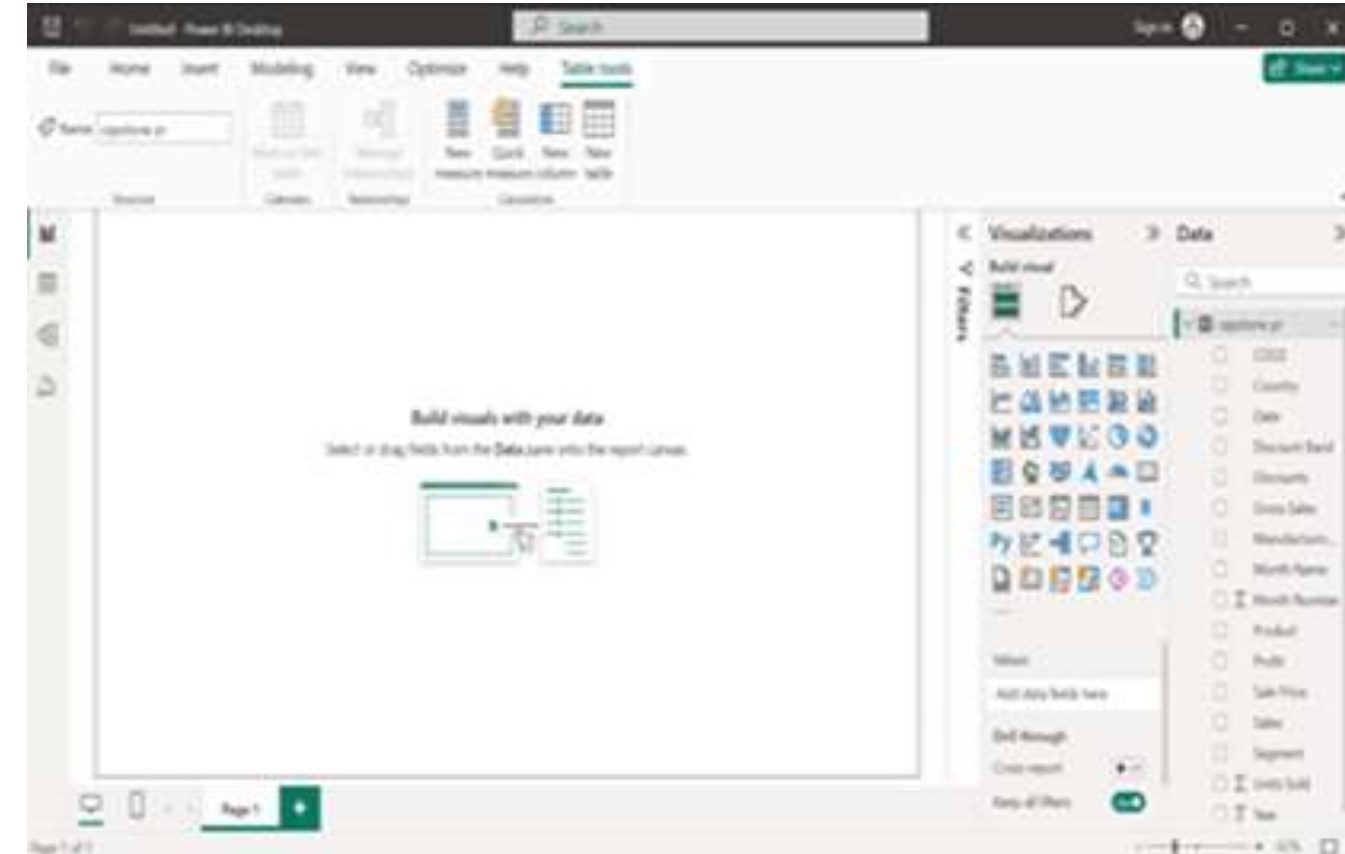
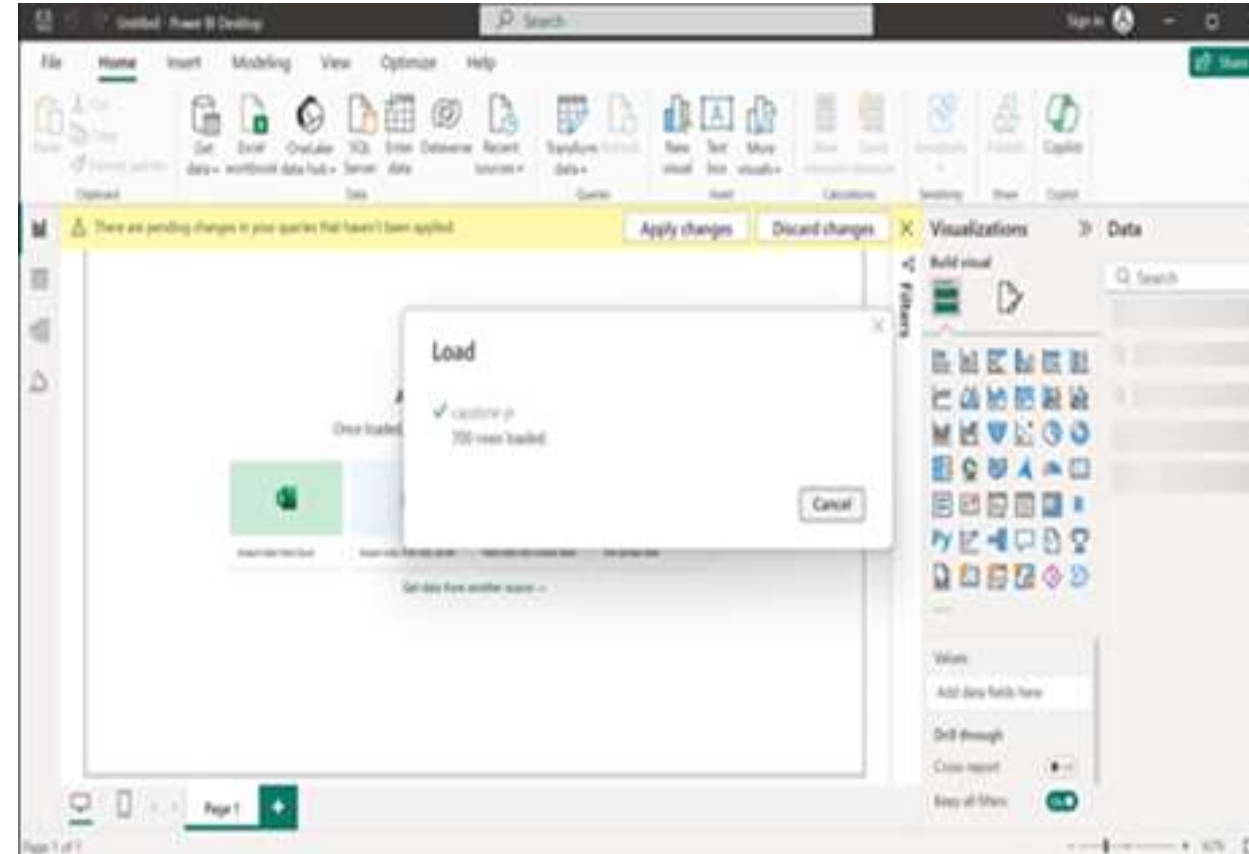
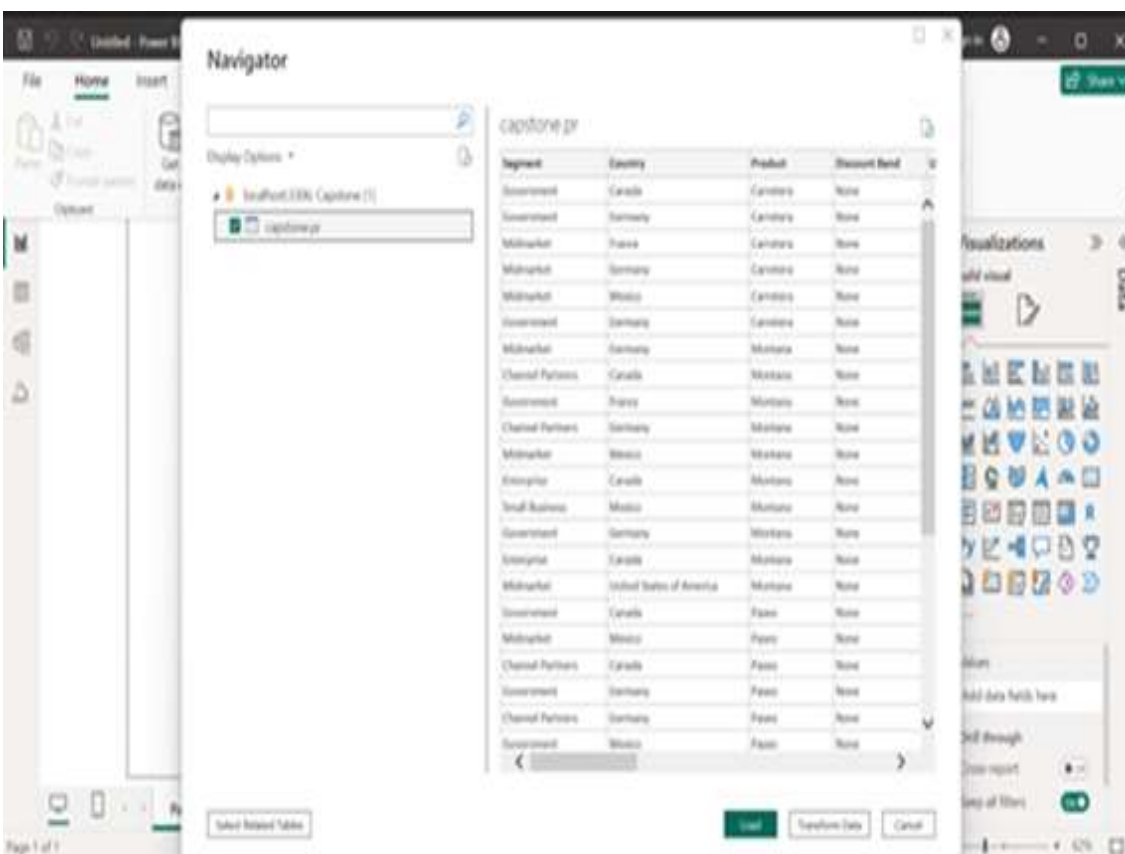
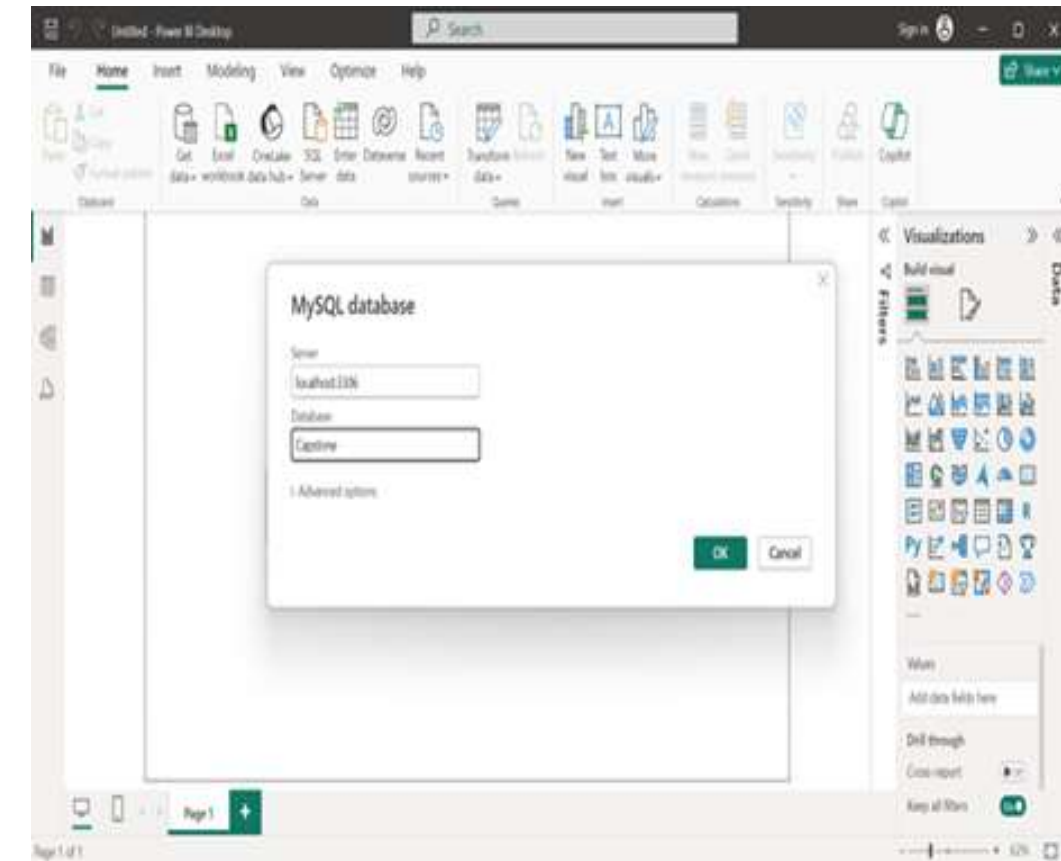
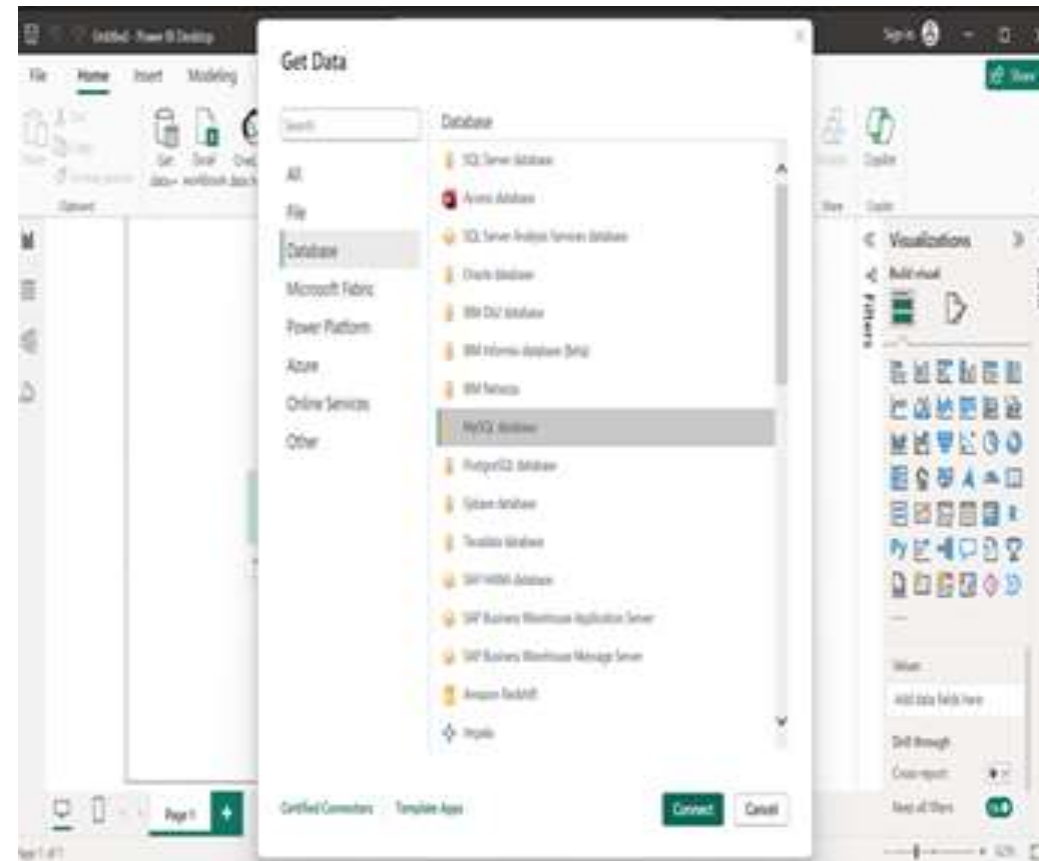
Segment	Count
Government	300
Midmarket	300
Channel Partners	300
Enterprise	300
Small Business	300

Automatic context help is disabled. Use the toolbar to manually get help for the current caret position or to toggle automatic help.

# 5. IMPORT THE DATA FROM THE SQL DATABASE INTO POWERBI

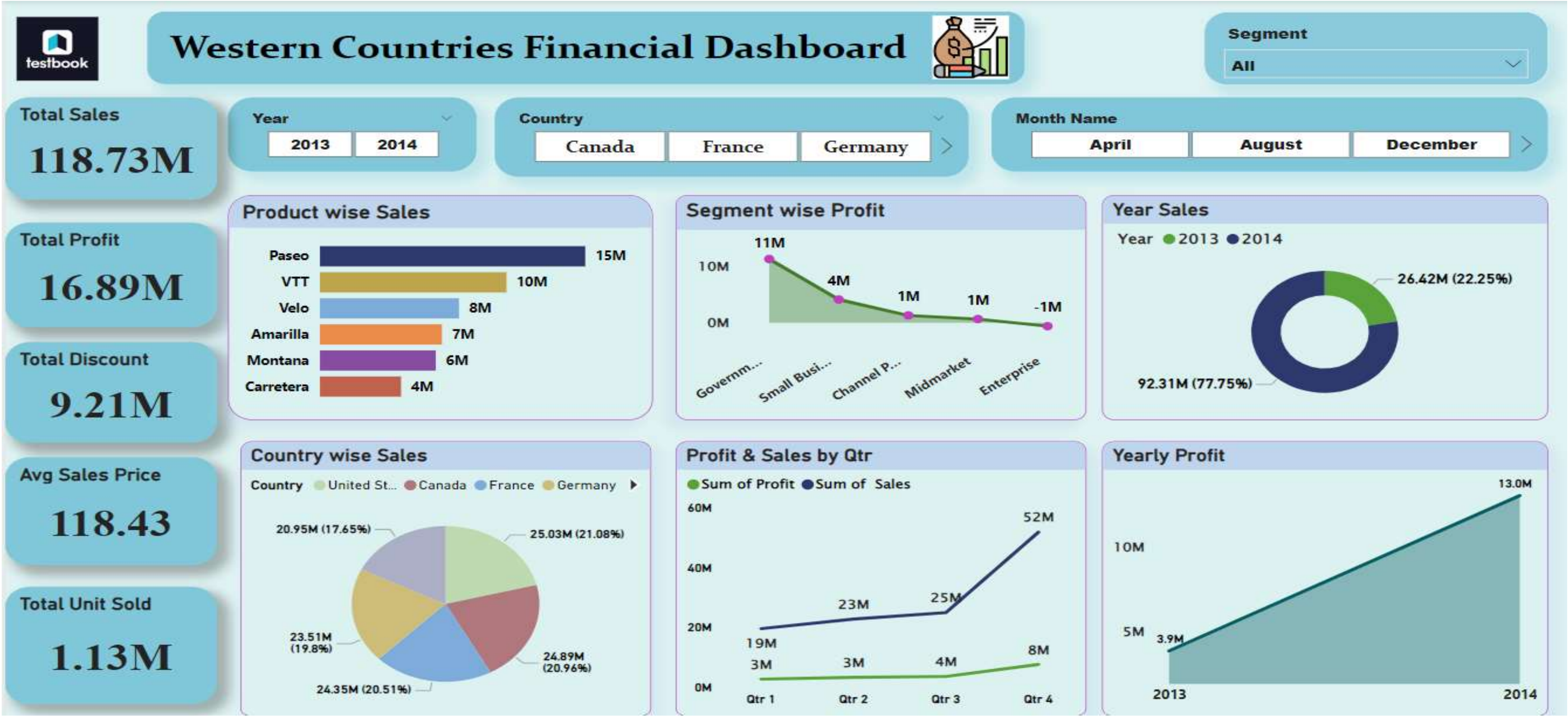
## Steps:-

- ❖ In Power BI, select "Get Data" and choose "MYSQL DATABASE" as the data source. Enter the Server name and database name to establish a connection.
- ❖ Select the relevant tables or views from the SQL Server database and load them into Power BI.
- ❖ Once the data is loaded, use Power BI's Query Editor to verify the data, make necessary transformations, and prepare it for analysis and visualization.





# 6. INTERACTIVE DASHBOARD BY USING VISUALIZATION TOOLS





# 6. INTERACTIVE DASHBOARD BY USING VISUALIZATION TOOLS





## 6. CONCLUSION AND INFERENCES

### **1.Strong Sales Performance:**

Paseo is the top-selling product, greatly enhancing total sales. The USA and Canada dominate in sales, underscoring their importance as key markets for the company.

### **2.Profitability Insights:**

The Government and Enterprise segments drive significant profits, especially with products like Amarilla. Certain products within the Enterprise segment show negative profits, indicating a need for cost optimization or strategy adjustment.

### **3.Year-over-Year Growth:**

From 2013 to 2014, there is a significant rise in sales, units sold, and profit, indicating strong growth and market expansion. The steady increase in quarterly sales and profit points to consistent performance improvements.

### **4.Discount Strategy:**

Paseo benefits from the highest discount, likely aimed at boosting its sales. However, the effect of this discount on overall profitability needs careful evaluation.

### **Market and Product Focus:**

Prioritizing on high-performing products and profitable segments can drive accelerated growth.

Additionally, implementing targeted strategies can enhance performance in low-profit or loss-making segments and products.

# RECOMMENDATIONS

## **Leverage Success in Government and Small Business Segments:**

- Expand successful strategies from the Government and Small Business segments to other parts of the business.
- Customize products and services for additional profitable segments to maximize returns.

## **Strengthen High-Performing Products:**

- Increase marketing and promotions for best-selling products such as Paseo and VTT to capitalize on their strong performance (Paseo: 27.84% of gross sales, 27.17% of profit; VTT: 17.28% of profit).
- Develop new features or variants to attract a broader customer base and maintain market leadership.

## **Focus on High-Performing Regions:**

- Strengthen the presence in high-performing regions like the USA and Canada by investing in marketing, sales, and customer service.
- Conduct research and develop tailored strategies for underperforming regions like Carretera Montana and Amarilla to improve their performance

## **Enhance Enterprise Segment Profitability:**

- Identify and address causes of negative profits (-3.64%).
- Revise pricing, streamline operations, and adopt efficient technologies.
- Improve sales with targeted training and better customer relationship tools.

## **Optimize Discount Strategies:**

- Assess the impact of current discount policies on profitability and ensure they drive sustainable sales growth.
- Calculate break-even points and adjust discounts or promotions as needed to maintain profitability.

## **Sustain and Replicate Growth Strategies:**

- Replicate successful strategies from previous years (notably 2014).
- Adapt strategies to current market conditions, leveraging new technologies and responding to changes in customer preferences.

➤ **Regular review and adjustment of strategies based on data insights are essential for adapting to changing market conditions and ensuring ongoing improvement.**





*Thank You*