

Business Analyst Career Program

- Capstone Project

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Agenda

- Data Exploration
- Statistical Analysis using Excel
- Graphical Analysis using Excel
- Insert the given data into the SQL server
- Import the Data from the SQL Database into PowerBI
- Interactive Dashboard by using visualization tools
- Conclusion and Inferences
- Endnotes



Data Exploration

- The given dataset infers a wide range of valuable information about a business's financial performance and operations. It contains the data of products sold during the period September 2013 to December 2014. It also includes the details like how many units sold, what's the manufacturing price & sale price of the product, how much discount offered, profit earned etc.
- This dataset has categorical values like segment, country, product, discount band, date, and month name which are also known as dimensions of the dataset, and numerical values like units sold, manufacturing price, sale price, gross sales, discounts, sales, cost of goods sold (COGS), profit, and month number which are also called measures.
- These dimensions and measures provide a comprehensive overview of the financial data set, allowing for analysis and insights into sales, profitability, and performance Like Revenue analysis (total revenue, revenue trends), Profit Analysis, Cost analysis, Discount analysis, etc across different segments, countries, products, and time periods. This structured data can be used for various financial and business analytics purposes, including performance evaluation, strategy formulation, and decision-making.
- A brief description of the dimensions & measures are listed in succeeding slides.

Data Exploration

Dimensions:-

- ❑ Segment: This dimension categorizes data into different segments, which represent customer segments like Channel Partners, Enterprise, Government, Midmarket, and Small Business.
- ❑ Country: The country dimension represents the geographical location where the financial transactions or sales occurred. It has the western countries like Canada, France, Germany, Mexico, and United States of America.
- ❑ Product: This dimension categorizes products or product categories, providing insight into what was sold. It includes the products like Amarilla, Carretera, Montana, Paseo, Velo, and VTT.
- ❑ Discount Band: This dimension categorizes data based on the discount band applied to sales transactions, which is divided into None, Low, Medium, and High.
- ❑ Date: The date dimension represents the specific date of each financial transaction. The range spans from September 2013 to December 2014, which includes the first day of each month.
- ❑ Month Name: This dimension represents the name of the month corresponding to each transaction date.

Data Exploration

Measures:-

- Units Sold: This measure represents the quantity of products sold in each transaction.
- Manufacturing Price: The manufacturing price is the cost at which the product was produced or acquired.
- Sale Price: This measure represents the price at which the product was sold.
- Gross Sales: Gross sales are the total revenue generated from the sales transactions before any deductions.
- Discounts: Discounts represent the amount deducted from the gross sales due to discounts applied to transactions.
- Sales: Sales represent the net sales revenue after accounting for discounts.
- COGS (Cost of Goods Sold): COGS is the direct cost associated with producing the goods that were sold.
- Profit: Profit is the difference between sales revenue and the cost of goods sold, providing insight into the profitability of the transactions.
- Month Number: This measure represents the numerical month corresponding to each transaction date, often used for time-series analysis.
- Year: This measure represents the year corresponding to each transaction date, often used for time-series analysis.

Statistical Analysis using Excel

Total Units Sold	11,25,806.00	Total Sales	\$ 11,87,26,350.26	Total COGS	\$ 10,18,32,648.00	Total Profit	\$ 1,68,93,702.26
Average Units Sold	1,608.29	Average Sales	\$ 1,69,609.07	Average COGS	\$ 1,45,475.21	Average Profit	\$ 24,133.86

- Few Pivot table like ‘Country wise & Segment wise total Sales & profit’, ‘Yearly total Units sold, Sales & Profit’ etc. have been created to analyze the given dataset and find some insights related to it.
- Some statistical value like product wise average sales & average profit, maximum & minimum discount offered & manufacturing price have been indicated.
- Some facts from these analysis are listed below:-
 - Maximum Profit product-wise is \$ 47,97,437.95 for “Paseo”.
 - Maximum & minimum discount offered is \$ 1,49,677.50 & 0 respectively.
 - Maximum sales & profit are for Segment ‘Govenrment’.
 - France is the country which makes the maximum percentage of total profit followed by Germany.

Yearly Total Units Sold, Sales & Profit			
Year	Values		
	Sum of Units Sold	Sum of Sales	Sum of Profit
2013	264574	\$ 2,64,15,255.51	\$ 38,78,464.51
2014	861132	\$ 9,23,11,094.75	\$ 1,30,15,237.75
Grand Total	1125806	\$ 11,87,26,350.26	\$ 1,68,93,702.26

Statistical Analysis using Excel

Segment Wise Average Sales & Profit			
Segment	Values		
	Average of Sales	Average of Profit	
Channel Partners	\$ 18,005.94	\$ 13,168.03	
Enterprise	\$ 1,96,116.94	\$ (6,145.46)	
Government	\$ 1,75,014.20	\$ 37,960.58	
Midmarket	\$ 23,818.83	\$ 6,601.03	
Small Business	\$ 4,24,279.19	\$ 41,431.69	
Grand Total	\$ 1,69,609.07	\$ 24,133.86	

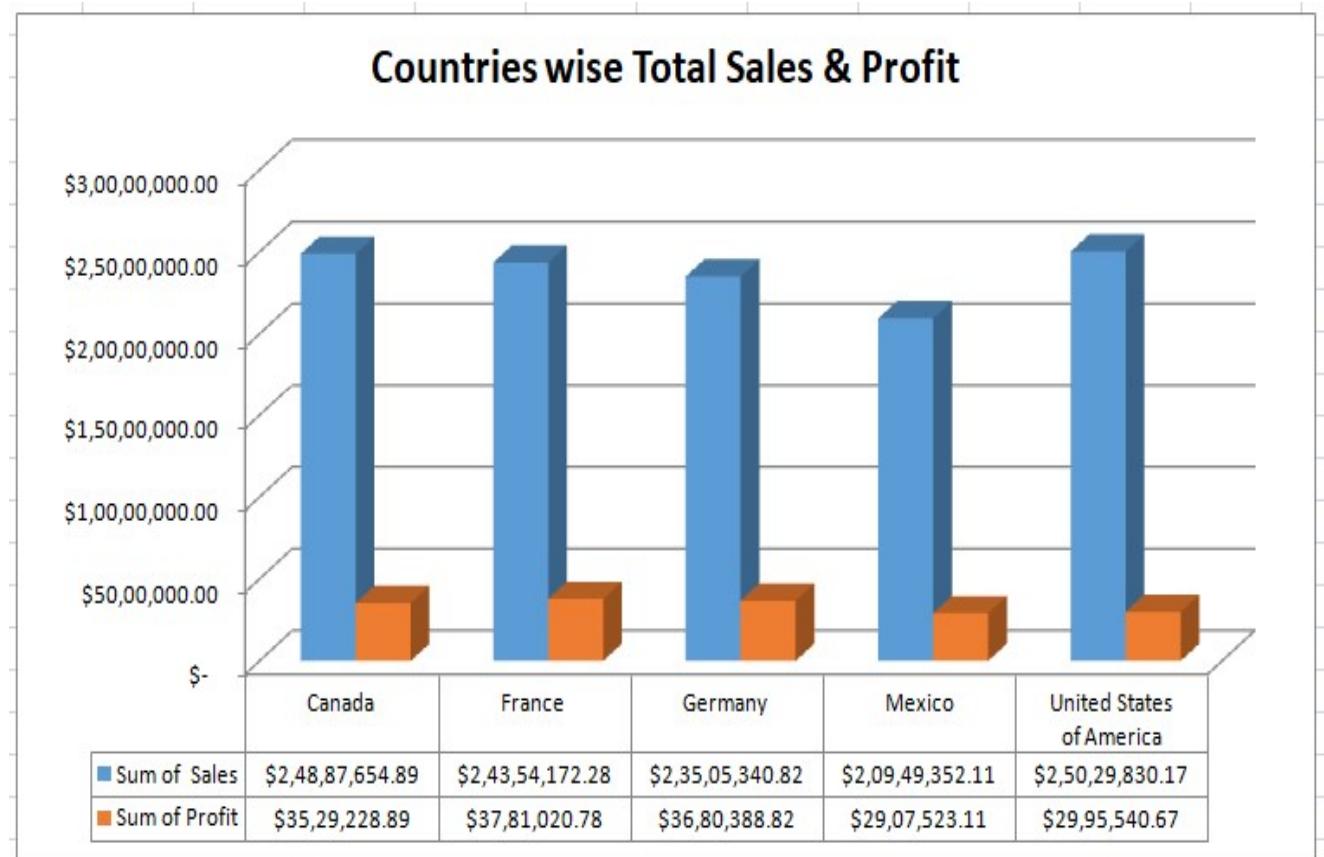
Segment Wise Total Sales & Profit			
Segment	Values		
	Sum of Sales	Sum of Profit	
Channel Partners	\$ 18,00,593.64	\$ 13,16,803.14	
Enterprise	\$ 1,96,11,694.38	\$ (6,14,545.63)	
Government	\$ 5,25,04,260.67	\$ 1,13,88,173.17	
Midmarket	\$ 23,81,883.08	\$ 6,60,103.08	
Small Business	\$ 4,24,27,918.50	\$ 41,43,168.50	
Grand Total	\$ 11,87,26,350.26	\$ 1,68,93,702.26	

Product wise Total Units Sold & Profit			
Segment	(All)	Values	
Product		Sum of Units Sold	Sum of Profit
Amarilla		155315	\$ 28,14,104.06
Carretera		146846	\$ 18,26,804.89
Montana		154198	\$ 21,14,754.88
Paseo		338240	\$ 47,97,437.95
Velo		162425	\$ 23,05,992.47
VTT		168783	\$ 30,34,608.02
Grand Total		1125806	\$ 1,68,93,702.26

Country Wise Total Sales & Profit			
Country	Values		
	Sum of Sales	Sum of Profit	% of total Profit
Canada	\$ 2,48,87,654.89	\$ 35,29,228.89	20.89
France	\$ 2,43,54,172.28	\$ 37,81,020.78	22.38
Germany	\$ 2,35,05,340.82	\$ 36,80,388.82	21.79
Mexico	\$ 2,09,49,352.11	\$ 29,07,523.11	17.21
United States of Am	\$ 2,50,29,830.17	\$ 29,95,540.67	17.73
Grand Total	\$ 11,87,26,350.26	\$ 1,68,93,702.26	

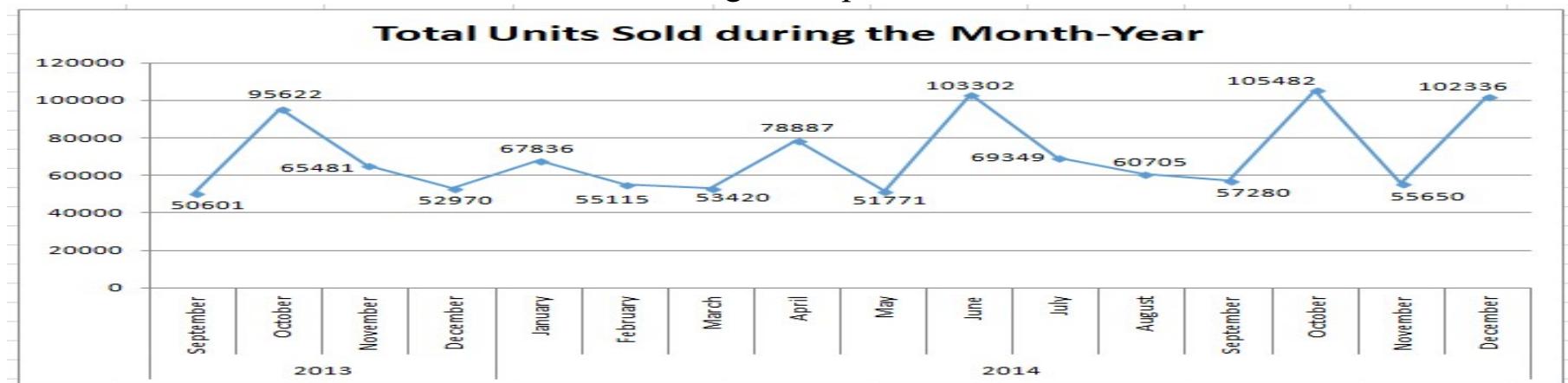
Graphical Analysis using Excel

- Country-wise ‘Total Sales and Profit’ are represented using a column chart.
- From the analysis, it can be seen that United States of America has the highest sales where as Mexico has the minimum sales.
- Similarly, France has the highest profit whereas Mexico has minimum profit.



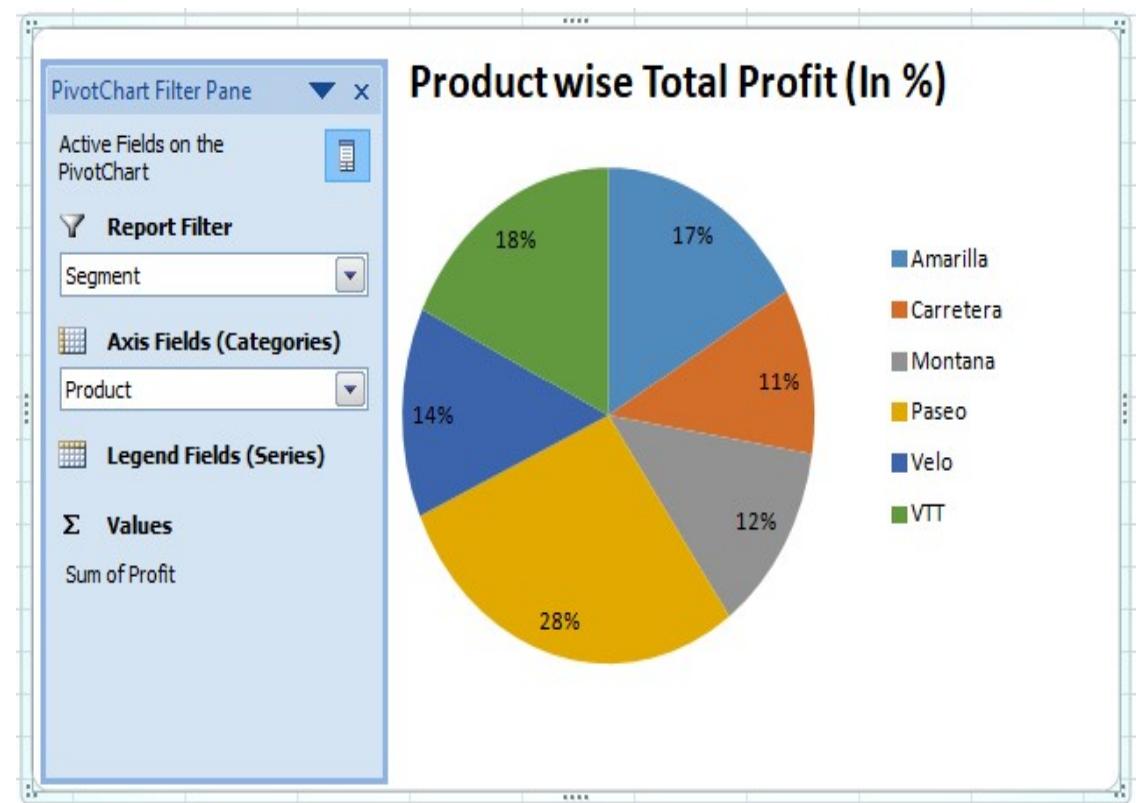
Graphical Analysis using Excel

- Using a line chart, total units Sold during the Month of a particular year is represented here.
- From the analysis, it can be seen that in 2013, maximum units sold in the month of October whereas minimum Units sold in month of September.
- Similarly, in 2014, maximum units sold in the month of October whereas minimum Units sold in month of May.
- During this period, the maximum units sold is ‘1,05,482’ Which belongs to October 2014 whereas minimum units sold is ‘50,601’ which belongs to September 2013.



Graphical Analysis using Excel

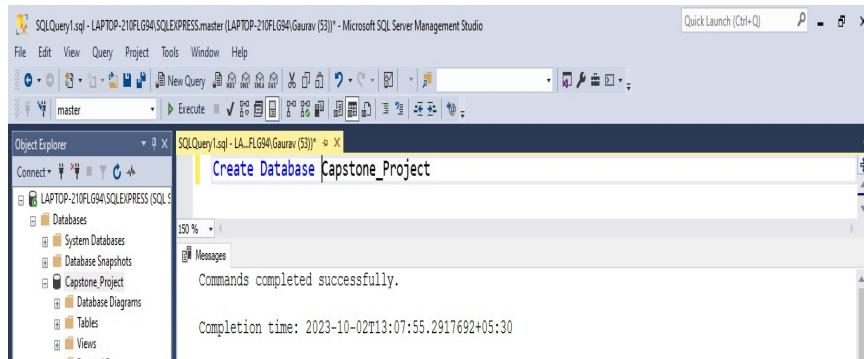
- Here, Product-wise total profit is represented using a Pie Chart.
- From the analysis, it can be seen that Product ‘Paseo’ has the largest contribution of about 28% in total profit, whereas “Carretera” has the lowest contribution of about 11%.
- A filter of Segment is added in the analysis, which may be used to visualize the Segment-wise profit contribution of a product.



Insertion of the Given Data into the SQL server

- Some relevant screenshots of the data insertion into a SQL DB and their successful execution

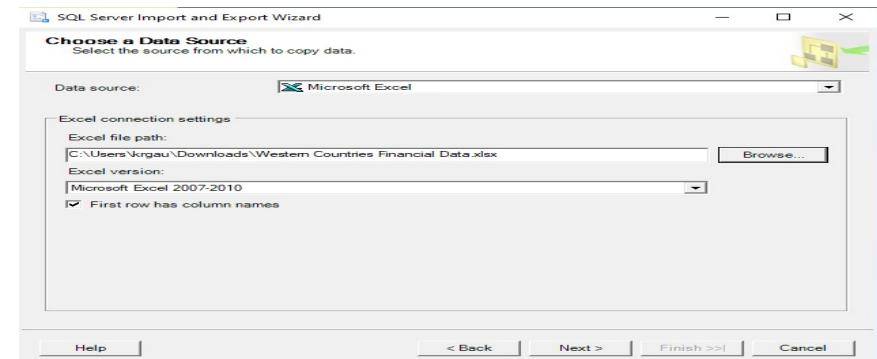
1. Database Creation



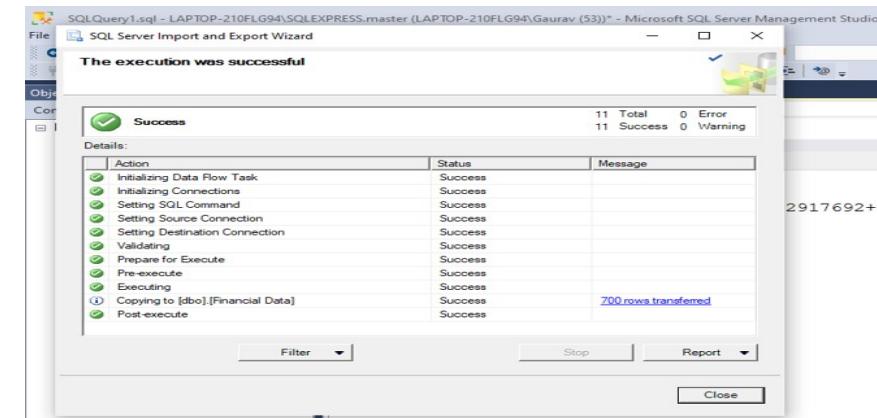
3. Preview Data

The screenshot shows the 'Select Source Tables and Views' step of the SQL Server Import and Export Wizard. It displays a preview of data from 'Sheet1\$' with columns: Segment, Country, Product, Discount Band, Units Sold, Manufacturing Price, Sale Price, and Gross. The data includes entries for various segments like Government, Midmarket, and Channel Partners across countries like Canada, Germany, France, and Mexico.

2. Choose the Source File



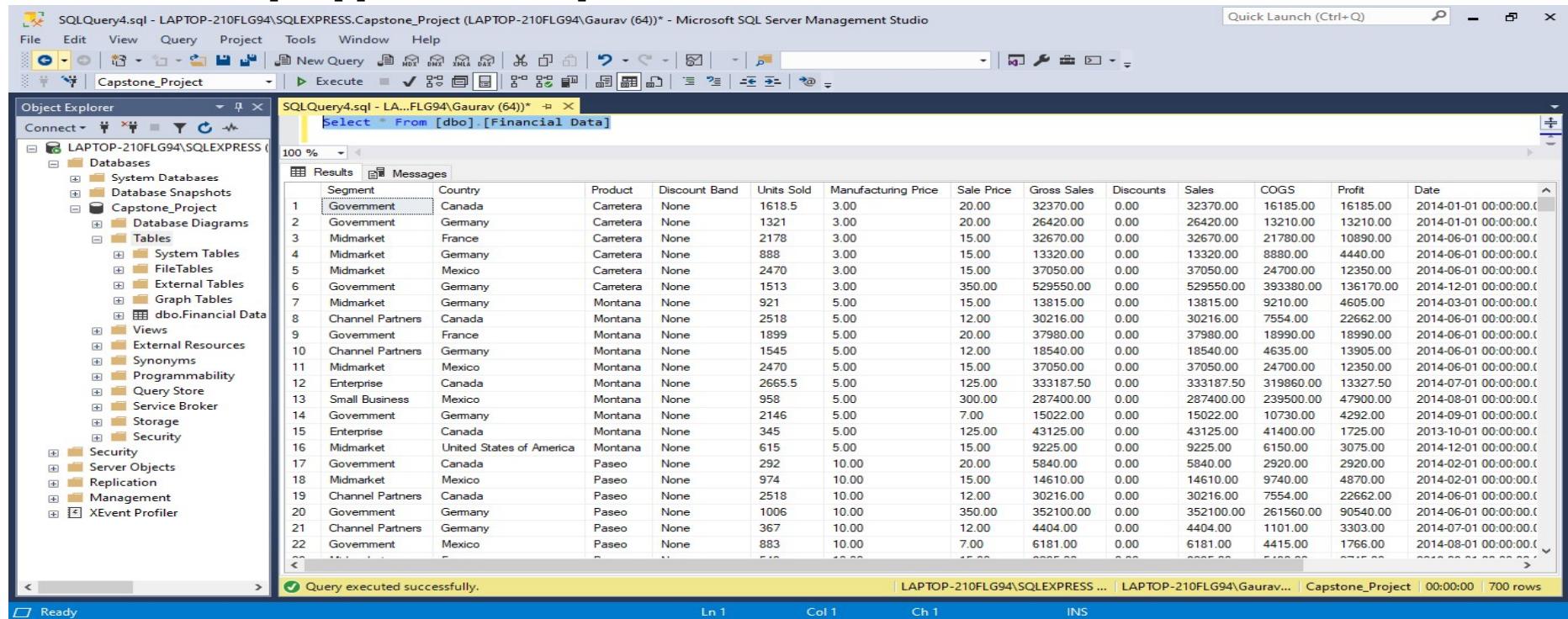
4. Successful Execution



SQL Queries on the Imported Data into the SQL Server

- Few Queries have been executed to verify the data properly imported into SQL database, which have been described in succeeding slides:-

1. Select * From [dbo].[Financial Data] => Returns data from all columns of table 'Financial Data'.

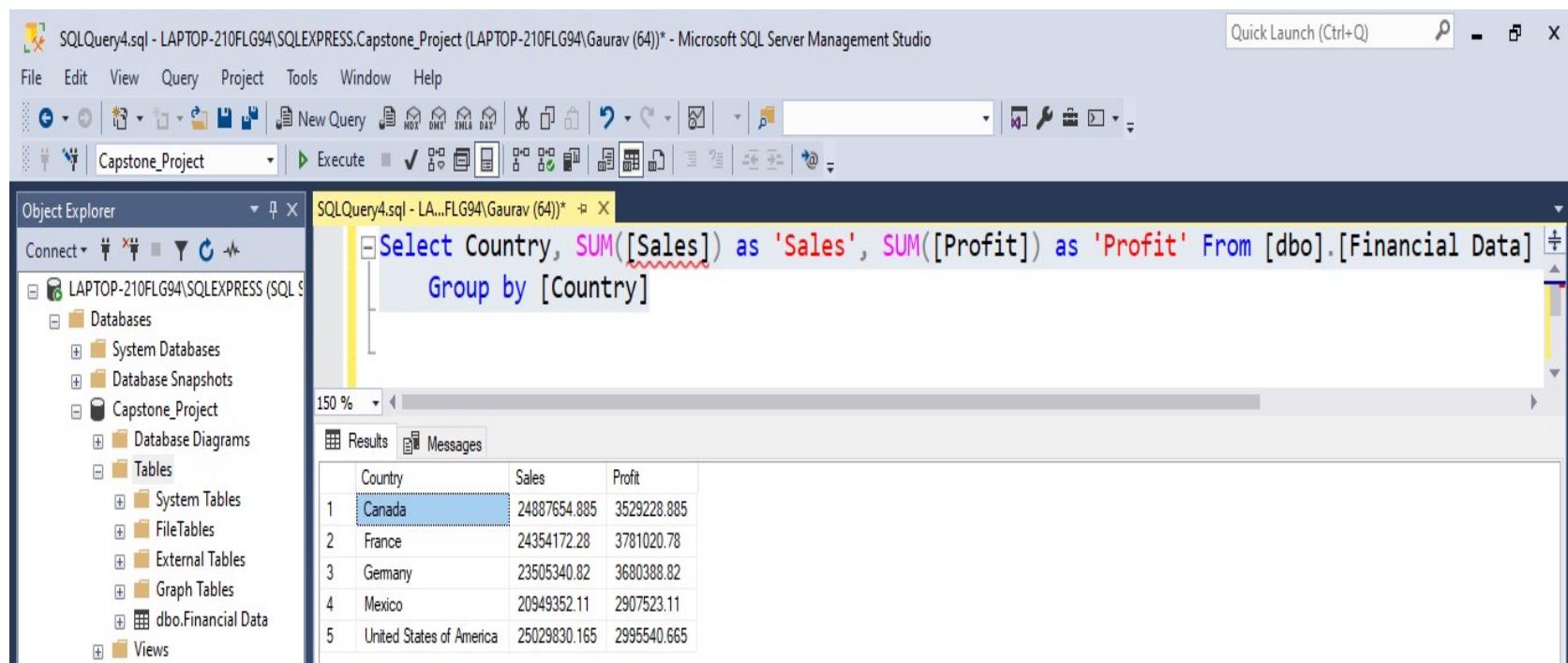


The screenshot shows the Microsoft SQL Server Management Studio interface. The title bar reads "SQLQuery4.sql - LAPTOP-210FLG94\SQLEXPRESS.Capstone_Project (LAPTOP-210FLG94\Gaurav (64))* - Microsoft SQL Server Management Studio". The left pane is the Object Explorer, showing the database structure for "LAPTOP-210FLG94\SQLEXPRESS\Capstone_Project", including databases, tables, and other objects. The right pane is the Results grid, displaying the output of the query "Select * From [dbo].[Financial Data]". The grid has 22 rows and 13 columns, with headers: Segment, Country, Product, Discount Band, Units Sold, Manufacturing Price, Sale Price, Gross Sales, Discounts, Sales, COGS, Profit, and Date. The data includes various segments like Government, Midmarket, and Channel Partners across countries like Canada, Germany, France, Mexico, and the United States. The last row of the grid shows "22 rows" and "700 rows" at the bottom.

Segment	Country	Product	Discount Band	Units Sold	Manufacturing Price	Sale Price	Gross Sales	Discounts	Sales	COGS	Profit	Date
1 Government	Canada	Camioneta	None	1618.5	3.00	20.00	32370.00	0.00	32370.00	16185.00	16185.00	2014-01-01 00:00:00.000
2 Government	Germany	Camioneta	None	1321	3.00	20.00	26420.00	0.00	26420.00	13210.00	13210.00	2014-01-01 00:00:00.000
3 Midmarket	France	Camioneta	None	2178	3.00	15.00	32670.00	0.00	32670.00	21780.00	10890.00	2014-06-01 00:00:00.000
4 Midmarket	Germany	Camioneta	None	888	3.00	15.00	13320.00	0.00	13320.00	8880.00	4440.00	2014-06-01 00:00:00.000
5 Midmarket	Mexico	Camioneta	None	2470	3.00	15.00	37050.00	0.00	37050.00	24700.00	12350.00	2014-06-01 00:00:00.000
6 Government	Germany	Camioneta	None	1513	3.00	350.00	529550.00	0.00	529550.00	393380.00	136170.00	2014-12-01 00:00:00.000
7 Midmarket	Germany	Montana	None	921	5.00	15.00	13815.00	0.00	13815.00	9210.00	4605.00	2014-03-01 00:00:00.000
8 Channel Partners	Canada	Montana	None	2518	5.00	12.00	30216.00	0.00	30216.00	7554.00	22662.00	2014-06-01 00:00:00.000
9 Government	France	Montana	None	1899	5.00	20.00	37980.00	0.00	37980.00	18990.00	18990.00	2014-06-01 00:00:00.000
10 Channel Partners	Germany	Montana	None	1545	5.00	12.00	18540.00	0.00	18540.00	4635.00	13905.00	2014-06-01 00:00:00.000
11 Midmarket	Mexico	Montana	None	2470	5.00	15.00	37050.00	0.00	37050.00	24700.00	12350.00	2014-06-01 00:00:00.000
12 Enterprise	Canada	Montana	None	2665.5	5.00	125.00	333187.50	0.00	333187.50	319860.00	13327.50	2014-07-01 00:00:00.000
13 Small Business	Mexico	Montana	None	958	5.00	300.00	287400.00	0.00	287400.00	239500.00	47900.00	2014-08-01 00:00:00.000
14 Government	Germany	Montana	None	2146	5.00	7.00	15022.00	0.00	15022.00	10730.00	4292.00	2014-09-01 00:00:00.000
15 Enterprise	Canada	Montana	None	345	5.00	125.00	43125.00	0.00	43125.00	41400.00	1725.00	2013-10-01 00:00:00.000
16 Midmarket	United States of America	Montana	None	615	5.00	15.00	9225.00	0.00	9225.00	6150.00	3075.00	2014-12-01 00:00:00.000
17 Government	Canada	Paseo	None	292	10.00	20.00	5840.00	0.00	5840.00	2920.00	2920.00	2014-02-01 00:00:00.000
18 Midmarket	Mexico	Paseo	None	974	10.00	15.00	14610.00	0.00	14610.00	9740.00	4870.00	2014-02-01 00:00:00.000
19 Channel Partners	Canada	Paseo	None	2518	10.00	12.00	30216.00	0.00	30216.00	7554.00	22662.00	2014-06-01 00:00:00.000
20 Government	Germany	Paseo	None	1006	10.00	350.00	352100.00	0.00	352100.00	261560.00	90540.00	2014-06-01 00:00:00.000
21 Channel Partners	Germany	Paseo	None	367	10.00	12.00	4404.00	0.00	4404.00	1101.00	3303.00	2014-07-01 00:00:00.000
22 Government	Mexico	Paseo	None	883	10.00	7.00	6181.00	0.00	6181.00	4415.00	1766.00	2014-08-01 00:00:00.000

SQL Queries on the Imported Data into the SQL Server

2. Select Country, SUM([Sales]) as 'Sales', SUM([Profit]) as 'Profit' From [dbo].[Financial Data]
Group by [Country] => Returns data for Country wise total Sales & Profit from Sales & Profit Column of table 'Financial Data'.



The screenshot shows the Microsoft SQL Server Management Studio interface. The title bar reads "SQLQuery4.sql - LAPTOP-210FLG94\SQLEXPRESS.Capstone_Project (LAPTOP-210FLG94\Gaurav (64))* - Microsoft SQL Server Management Studio". The menu bar includes File, Edit, View, Query, Project, Tools, Window, Help. The toolbar has various icons for file operations like New Query, Save, Print, etc. The Object Explorer on the left shows the database structure: "LAPTOP-210FLG94\SQLEXPRESS (SQL Server)" with "Databases", "Tables", and "dbo.Financial Data" selected. The main query editor window contains the following SQL code:

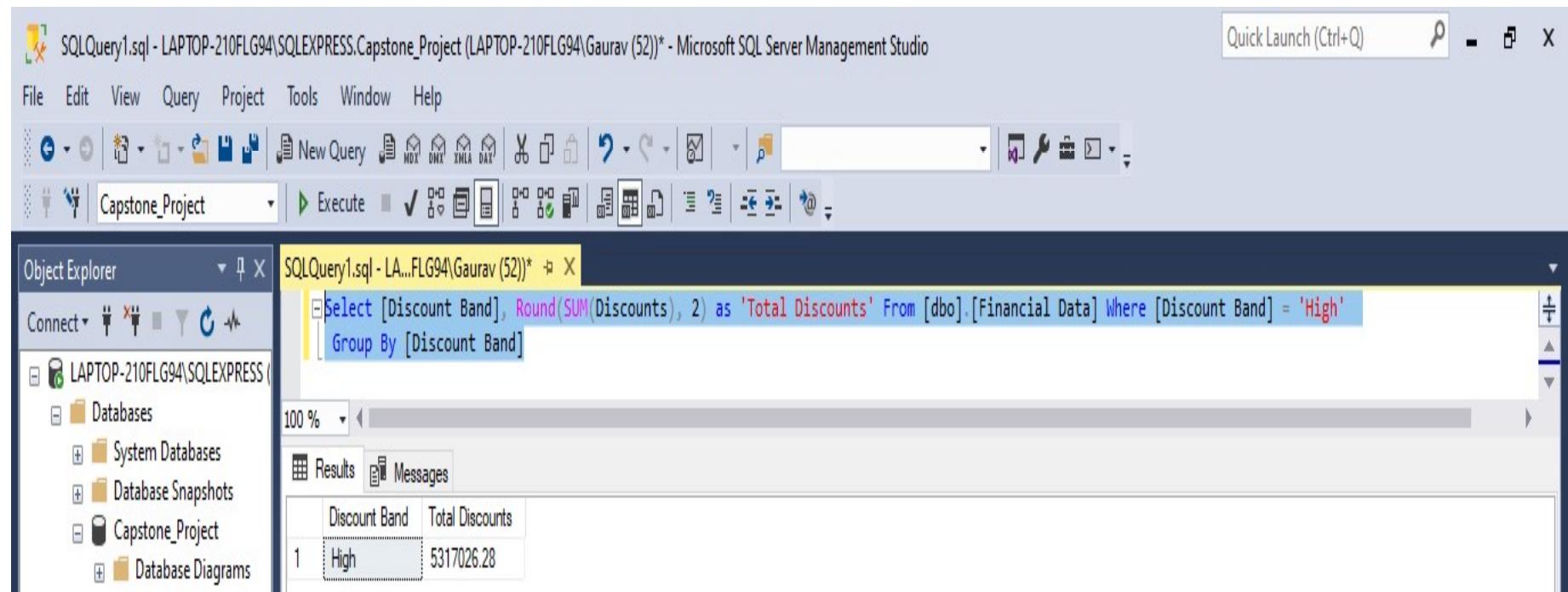
```
Select Country, SUM([Sales]) as 'Sales', SUM([Profit]) as 'Profit' From [dbo].[Financial Data]
Group by [Country]
```

The Results tab displays the query results in a table:

	Country	Sales	Profit
1	Canada	24887654.885	3529228.885
2	France	24354172.28	3781020.78
3	Germany	23505340.82	3680388.82
4	Mexico	20949352.11	2907523.11
5	United States of America	25029830.165	2995540.665

SQL Queries on the Imported Data into the SQL Server

3. Select [Discount Band], Round(SUM(Discounts), 2) as 'Total Discounts' From [dbo].[Financial Data]
Where [Discount Band] = 'High' Group By [Discount Band] => Returns data for total Discounts (rounded off two decimal points) for Discount Band 'High' from Discounts Column of table 'Financial Data'.



The screenshot shows the Microsoft SQL Server Management Studio interface. The title bar reads "SQLQuery1.sql - LAPTOP-210FLG94\SQLEXPRESS.Capstone_Project (LAPTOP-210FLG94\Gaurav (52))* - Microsoft SQL Server Management Studio". The menu bar includes File, Edit, View, Query, Project, Tools, Window, and Help. The toolbar has various icons for database management. The Object Explorer on the left shows a connection to "LAPTOP-210FLG94\SQLEXPRESS" with databases "System Databases", "Database Snapshots", "Capstone_Project", and "Database Diagrams". The main window displays a query results grid. The query in the results pane is:

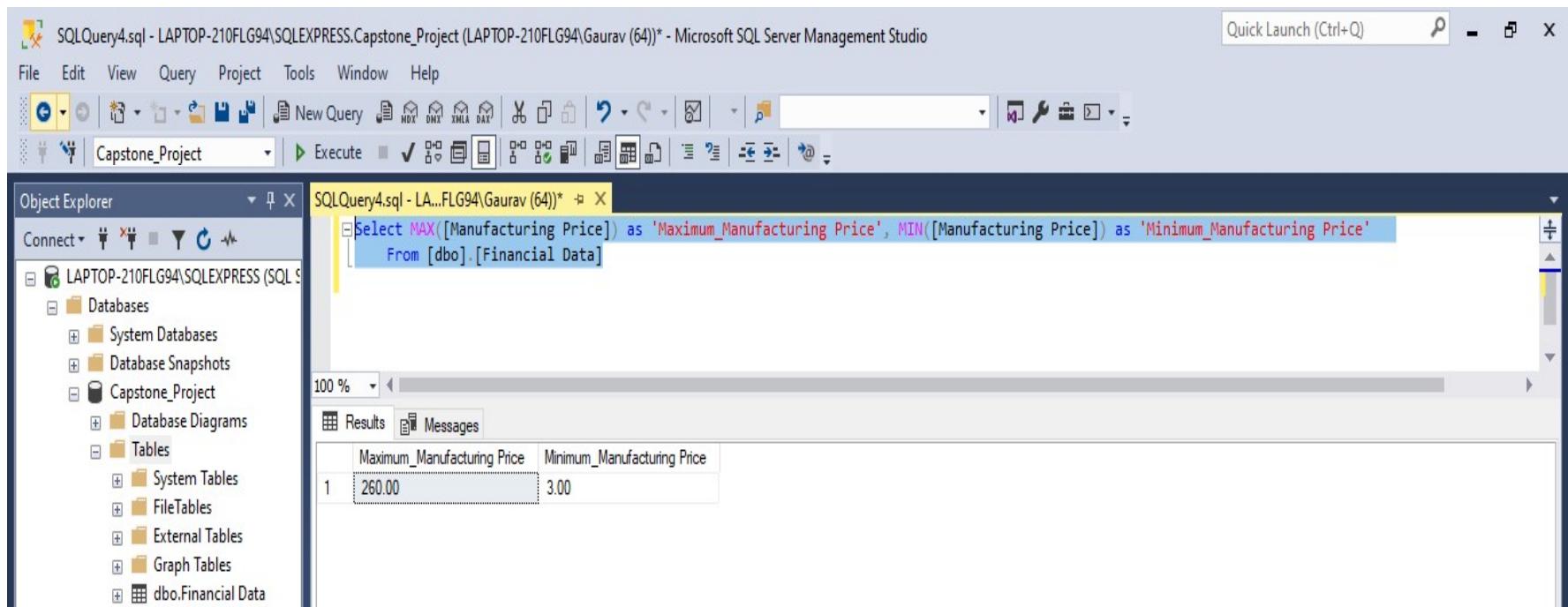
```
Select [Discount Band], Round(SUM(Discounts), 2) as 'Total Discounts' From [dbo].[Financial Data]
Where [Discount Band] = 'High'
Group By [Discount Band]
```

The results grid shows one row:

	Discount Band	Total Discounts
1	High	5317026.28

SQL Queries on the Imported Data into the SQL Server

4. Select MAX([Manufacturing Price]) as 'Maximum_Manufacturing Price', MIN([Manufacturing Price]) as 'Minimum_Manufacturing Price' From [dbo].[Financial Data] => Returns data for maximum & minimum manufacturing price from Discounts Column of table 'Financial Data'.



The screenshot shows the Microsoft SQL Server Management Studio interface. The title bar reads "SQLQuery4.sql - LAPTOP-210FLG94\SQLEXPRESS.Capstone_Project (LAPTOP-210FLG94\Gaurav (64))* - Microsoft SQL Server Management Studio". The menu bar includes File, Edit, View, Query, Project, Tools, Window, Help. The toolbar has various icons for database management. The Object Explorer on the left shows the database structure: "LAPTOP-210FLG94\SQLEXPRESS (SQL Server)" with "Databases", "System Databases", "Database Snapshots", "Capstone_Project" with "Database Diagrams", "Tables", "System Tables", "FileTables", "External Tables", "Graph Tables", and "dbo.Financial Data". The main query window displays the following SQL code:

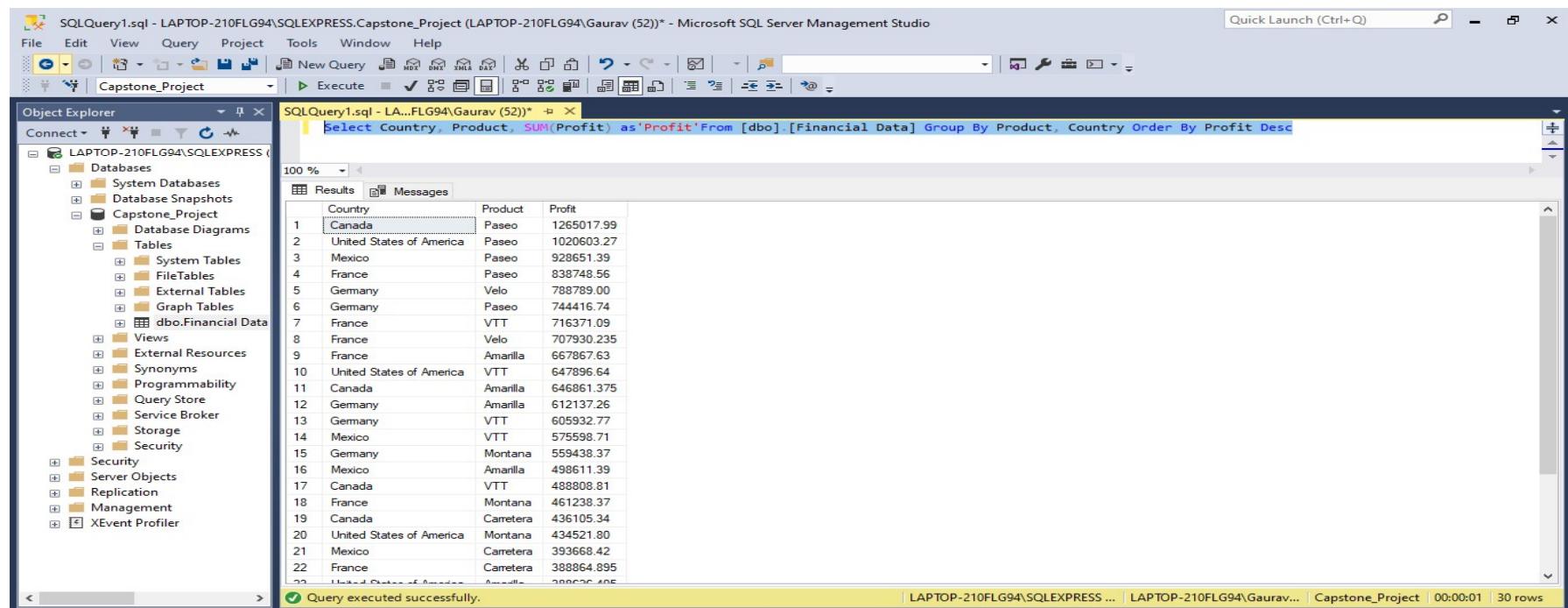
```
Select MAX([Manufacturing Price]) as 'Maximum_Manufacturing Price', MIN([Manufacturing Price]) as 'Minimum_Manufacturing Price'  
From [dbo].[Financial Data]
```

The Results tab shows the output of the query:

	Maximum_Manufacturing Price	Minimum_Manufacturing Price
1	260.00	3.00

SQL Queries on the Imported Data into the SQL Server

5. Select Country, Product, SUM(Profit) as 'Profit' From [dbo].[Financial Data] Group By Product, Country Order By Profit Desc => Returns data for total profit arranged in descending order & aggregated by country/product from Country, Product, Profit Column of table 'Financial Data'.



The screenshot shows the Microsoft SQL Server Management Studio interface. The title bar reads "SQLQuery1.sql - LAPTOP-210FLG94\SQLEXPRESS.Capstone_Project (LAPTOP-210FLG94\Gaurav (52)) - Microsoft SQL Server Management Studio". The left pane is the Object Explorer, showing the database structure for "Capstone_Project", including Databases, Tables (with "dbo.Financial Data" selected), Views, and Security. The right pane is the Results grid, displaying the output of the following query:

```
SELECT Country, Product, SUM(Profit) as 'Profit' From [dbo].[Financial Data] Group By Product, Country Order By Profit Desc
```

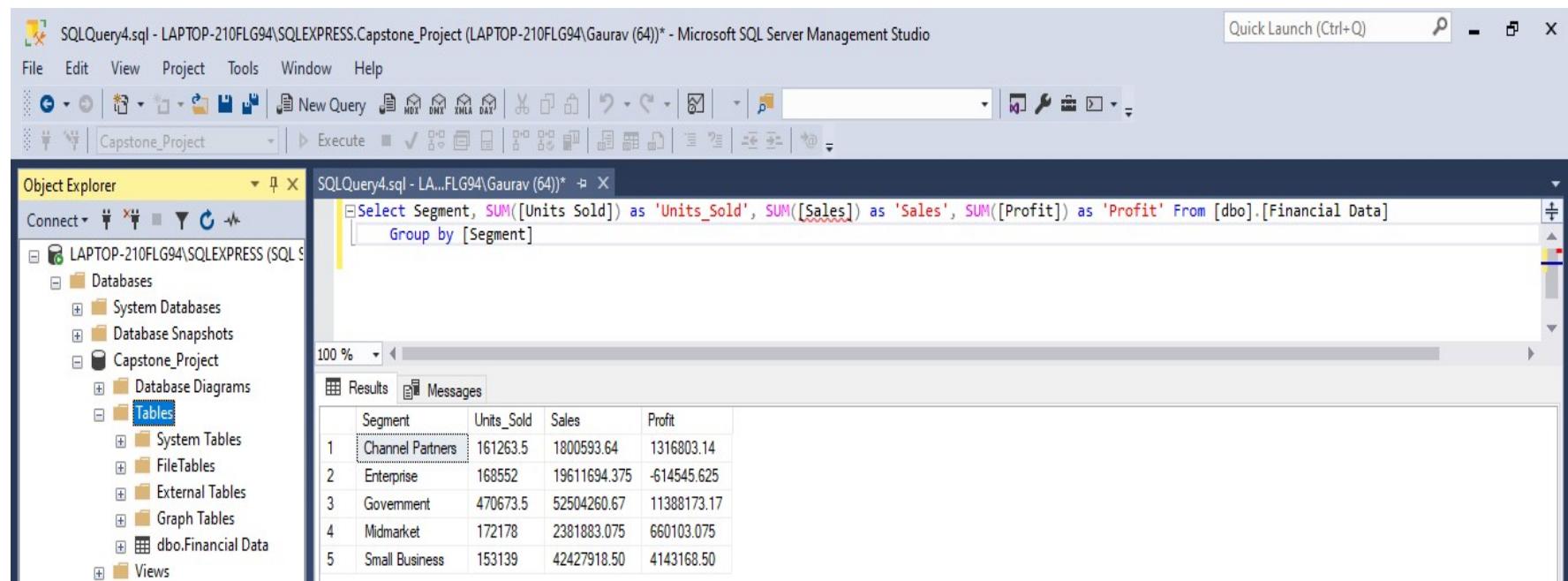
The results show 30 rows of data:

	Country	Product	Profit
1	Canada	Paseo	1265017.99
2	United States of America	Paseo	1020603.27
3	Mexico	Paseo	928651.39
4	France	Paseo	838748.56
5	Germany	Velo	788789.00
6	Germany	Paseo	744416.74
7	France	VTT	716371.09
8	France	Velo	707930.235
9	France	Amarilla	667867.63
10	United States of America	VTT	647896.64
11	Canada	Amarilla	646861.375
12	Germany	Amarilla	612137.26
13	Germany	VTT	605932.77
14	Mexico	VTT	575598.71
15	Germany	Montana	559438.37
16	Mexico	Amarilla	498611.39
17	Canada	VTT	488808.81
18	France	Montana	461238.37
19	Canada	Carretera	436105.34
20	United States of America	Montana	434521.80
21	Mexico	Carretera	393668.42
22	France	Carretera	388864.895
23	United States of America	Amarilla	388626.405

At the bottom of the results grid, a message says "Query executed successfully." and "30 rows".

SQL Queries on the Imported Data into the SQL Server

6. Select Segment, SUM([Units Sold]) as 'Units_Sold', SUM([Sales]) as 'Sales', SUM([Profit]) as 'Profit'
From [dbo].[Financial Data] Group by [Segment] => Returns data for total units sold, sales & profit aggregated by Segment from Segment, Units Sold, Sales, Profit Column of table 'Financial Data'.



The screenshot shows the Microsoft SQL Server Management Studio interface. The title bar reads "SQLQuery4.sql - LAPTOP-210FLG94\SQLEXPRESS.Capstone_Project (LAPTOP-210FLG94\Gaurav (64))* - Microsoft SQL Server Management Studio". The menu bar includes File, Edit, View, Project, Tools, Window, Help. The toolbar has various icons for file operations like New Query, Save, Print, etc. The Object Explorer on the left shows the database structure: LAPTOP-210FLG94\SQLEXPRESS (SQL Server), Capstone_Project, Tables (selected), and other objects like Databases, System Tables, etc. The main window displays a query in the SQL Query Editor: "Select Segment, SUM([Units Sold]) as 'Units_Sold', SUM([Sales]) as 'Sales', SUM([Profit]) as 'Profit' From [dbo].[Financial Data] Group by [Segment]". Below the editor is a Results grid showing the output:

	Segment	Units_Sold	Sales	Profit
1	Channel Partners	161263.5	1800593.64	1316803.14
2	Enterprise	168552	19611694.375	-614545.625
3	Government	470673.5	52504260.67	11388173.17
4	Midmarket	172178	2381883.075	660103.075
5	Small Business	153139	42427918.50	4143168.50

SQL Queries on the Imported Data into the SQL Server

7. `ALTER TABLE [dbo].[Financial Data] ALTER COLUMN [Date] date;` => Use to change the data type from datetime to date

Select Date, Count(Date) as 'No. Of transactions' From [dbo].[Financial Data] Group By [Date] =>
Returns data for total no. of transactions aggregated by Date Column of table 'Financial Data'.

SQLQuery2.sql - LA...FLG94\Gaurav (59)* X

```
select Date, Count(Date) as 'No. Of transactions' From [dbo].[Financial Data] Group By [Date]
```

100 %

Results Messages

	Date	No. Of transactions
1	2013-09-01 00:00:00.000	35
2	2013-10-01 00:00:00.000	70
3	2013-11-01 00:00:00.000	35
4	2013-12-01 00:00:00.000	35
5	2014-01-01 00:00:00.000	35
6	2014-02-01 00:00:00.000	35
7	2014-03-01 00:00:00.000	35
8	2014-04-01 00:00:00.000	35
9	2014-05-01 00:00:00.000	35
10	2014-06-01 00:00:00.000	70
11	2014-07-01 00:00:00.000	35
12	2014-08-01 00:00:00.000	35
13	2014-09-01 00:00:00.000	35
14	2014-10-01 00:00:00.000	70
15	2014-11-01 00:00:00.000	35
16	2014-12-01 00:00:00.000	70

SQLQuery2.sql - LA...FLG94\Gaurav (59)* X

```
ALTER TABLE [dbo].[Financial Data]
ALTER COLUMN [Date] date;

Select Date, Count(Date) as 'No. Of transactions' From [dbo].[Financial Data] Group By [Date]
```

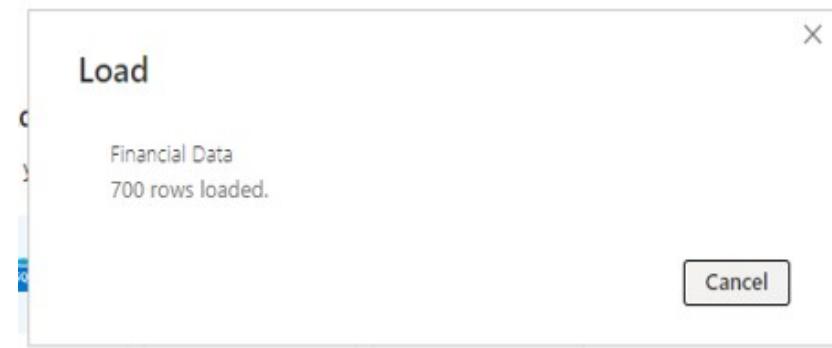
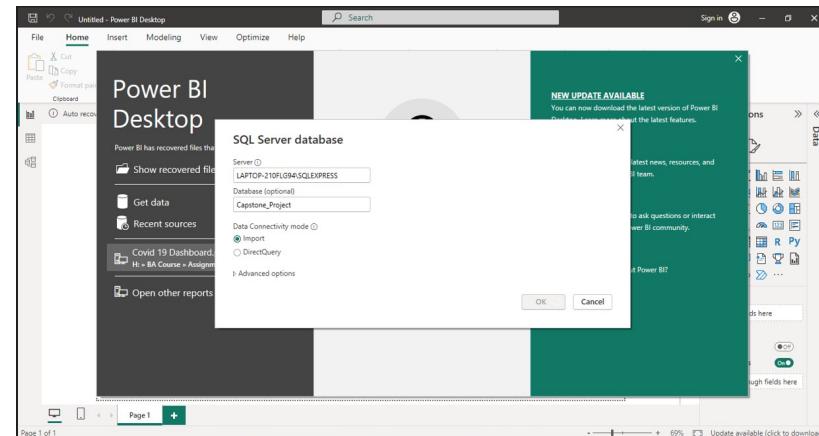
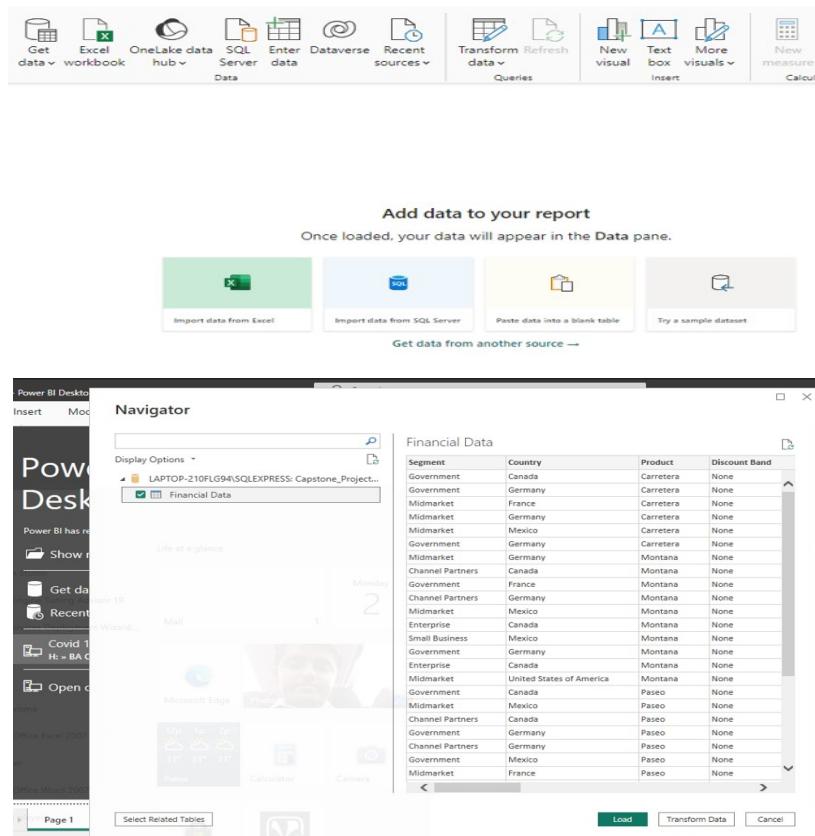
100 %

Results Messages

	Date	No. Of transactions
1	2013-10-01	70
2	2014-02-01	35
3	2014-05-01	35
4	2014-09-01	35
5	2014-06-01	70
6	2014-01-01	35
7	2014-11-01	35
8	2014-08-01	35
9	2013-12-01	35
10	2014-07-01	35
11	2014-10-01	70
12	2014-04-01	35
13	2013-09-01	35
14	2014-12-01	70
15	2013-11-01	35
16	2014-03-01	35

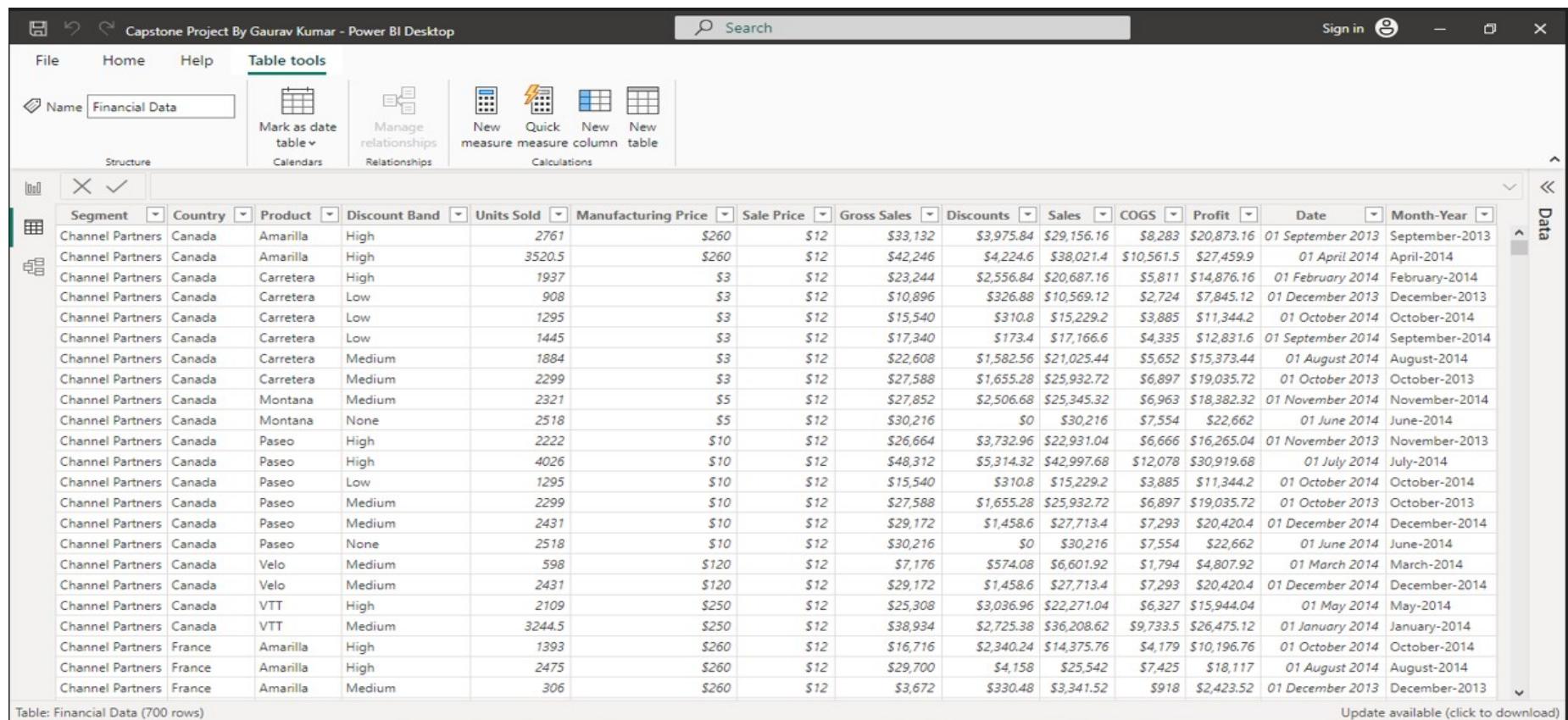
Import the Data from the SQL Database into PowerBI

- Some relevant screenshots to import the data from SQL Server to Power BI and their successful Loading



Import the Data from the SQL Database into PowerBI

- View of Data in Power BI:-



The screenshot shows the Power BI Desktop interface with the title bar "Capstone Project By Gaurav Kumar - Power BI Desktop". The "Table tools" ribbon is selected, showing options like "Mark as date table", "Manage relationships", and "Calculations". A data grid below displays 700 rows of financial data with columns including Segment, Country, Product, Discount Band, Units Sold, Manufacturing Price, Sale Price, Gross Sales, Discounts, Sales, COGS, Profit, Date, and Month-Year.

Segment	Country	Product	Discount Band	Units Sold	Manufacturing Price	Sale Price	Gross Sales	Discounts	Sales	COGS	Profit	Date	Month-Year
Channel Partners	Canada	Amarilla	High	2761	\$260	\$12	\$33,132	\$3,975.84	\$29,156.16	\$8,283	\$20,873.16	01 September 2013	September-2013
Channel Partners	Canada	Amarilla	High	3520.5	\$260	\$12	\$42,246	\$4,224.6	\$38,021.4	\$10,561.5	\$27,459.9	01 April 2014	April-2014
Channel Partners	Canada	Carretera	High	1937	\$3	\$12	\$23,244	\$2,556.84	\$20,687.16	\$5,811	\$14,876.16	01 February 2014	February-2014
Channel Partners	Canada	Carretera	Low	908	\$3	\$12	\$10,896	\$326.88	\$10,569.12	\$2,724	\$7,845.12	01 December 2013	December-2013
Channel Partners	Canada	Carretera	Low	1295	\$3	\$12	\$15,540	\$310.8	\$15,229.2	\$3,885	\$11,344.2	01 October 2014	October-2014
Channel Partners	Canada	Carretera	Low	1445	\$3	\$12	\$17,340	\$173.4	\$17,166.6	\$4,335	\$12,831.6	01 September 2014	September-2014
Channel Partners	Canada	Carretera	Medium	1884	\$3	\$12	\$22,608	\$1,582.56	\$21,025.44	\$5,652	\$15,373.44	01 August 2014	August-2014
Channel Partners	Canada	Carretera	Medium	2299	\$3	\$12	\$27,588	\$1,655.28	\$25,932.72	\$6,897	\$19,035.72	01 October 2013	October-2013
Channel Partners	Canada	Montana	Medium	2321	\$5	\$12	\$27,852	\$2,506.68	\$25,345.32	\$6,963	\$18,382.32	01 November 2014	November-2014
Channel Partners	Canada	Montana	None	2518	\$5	\$12	\$30,216	\$0	\$30,216	\$7,554	\$22,662	01 June 2014	June-2014
Channel Partners	Canada	Paseo	High	2222	\$10	\$12	\$26,664	\$3,732.96	\$22,931.04	\$6,666	\$16,265.04	01 November 2013	November-2013
Channel Partners	Canada	Paseo	High	4026	\$10	\$12	\$48,312	\$5,314.32	\$42,997.68	\$12,078	\$30,919.68	01 July 2014	July-2014
Channel Partners	Canada	Paseo	Low	1295	\$10	\$12	\$15,540	\$310.8	\$15,229.2	\$3,885	\$11,344.2	01 October 2014	October-2014
Channel Partners	Canada	Paseo	Medium	2299	\$10	\$12	\$27,588	\$1,655.28	\$25,932.72	\$6,897	\$19,035.72	01 October 2013	October-2013
Channel Partners	Canada	Paseo	Medium	2431	\$10	\$12	\$29,172	\$1,458.6	\$27,713.4	\$7,293	\$20,420.4	01 December 2014	December-2014
Channel Partners	Canada	Paseo	None	2518	\$10	\$12	\$30,216	\$0	\$30,216	\$7,554	\$22,662	01 June 2014	June-2014
Channel Partners	Canada	Velo	Medium	598	\$120	\$12	\$7,176	\$574.08	\$6,601.92	\$1,794	\$4,807.92	01 March 2014	March-2014
Channel Partners	Canada	Velo	Medium	2431	\$120	\$12	\$29,172	\$1,458.6	\$27,713.4	\$7,293	\$20,420.4	01 December 2014	December-2014
Channel Partners	Canada	VTT	High	2109	\$250	\$12	\$25,308	\$3,036.96	\$22,271.04	\$6,327	\$15,944.04	01 May 2014	May-2014
Channel Partners	Canada	VTT	Medium	3244.5	\$250	\$12	\$38,934	\$2,725.38	\$36,208.62	\$9,733.5	\$26,475.12	01 January 2014	January-2014
Channel Partners	France	Amarilla	High	1393	\$260	\$12	\$16,716	\$2,340.24	\$14,375.76	\$4,179	\$10,196.76	01 October 2014	October-2014
Channel Partners	France	Amarilla	High	2475	\$260	\$12	\$29,700	\$4,158	\$25,542	\$7,425	\$18,117	01 August 2014	August-2014
Channel Partners	France	Amarilla	Medium	306	\$260	\$12	\$3,672	\$330.48	\$3,341.52	\$918	\$2,423.52	01 December 2013	December-2013

Table: Financial Data (700 rows)

Update available (click to download)

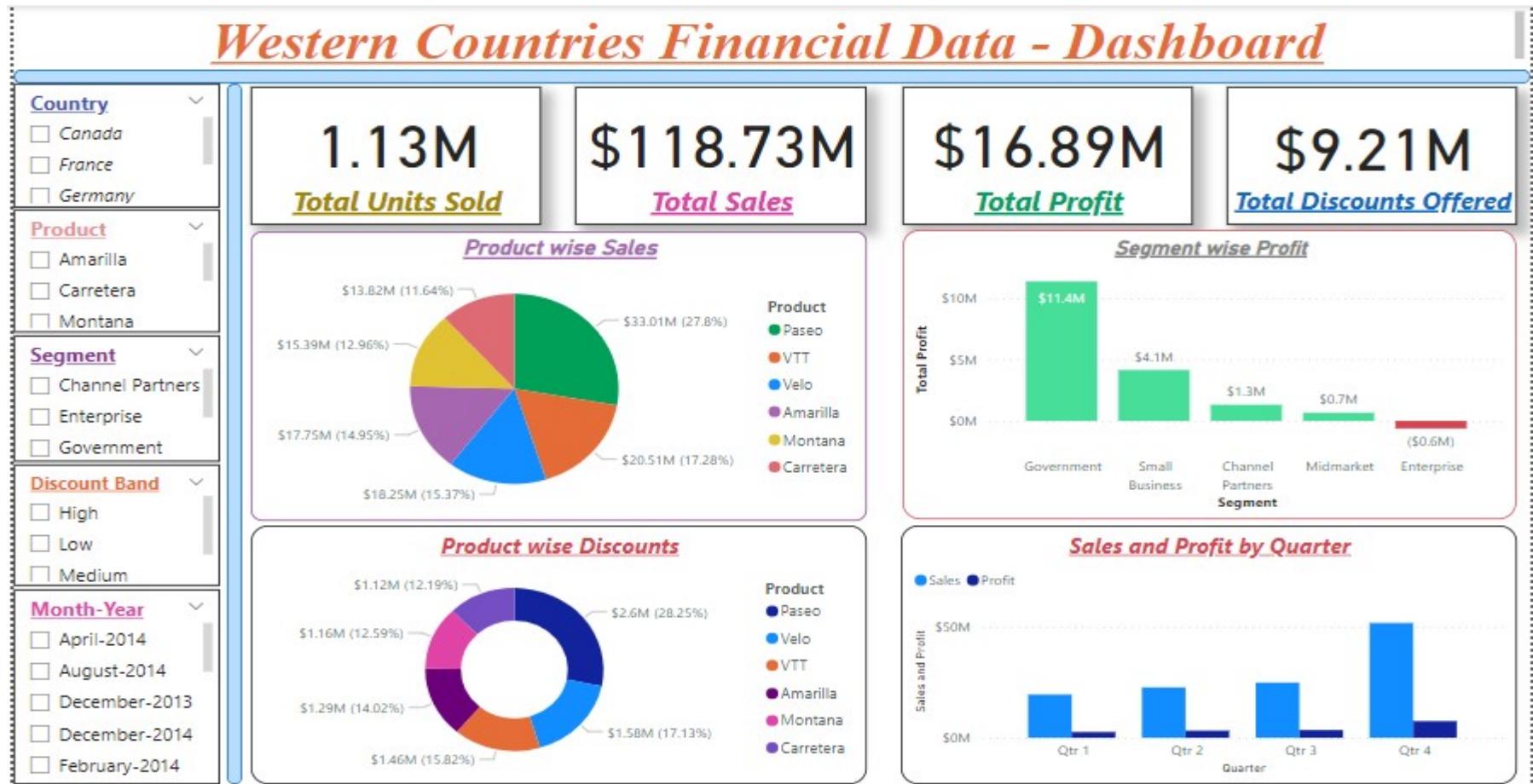
Import the Data from the SQL Database into PowerBI

- Data cleaning or creation of measured for data analysis :-
 - Checked for any duplicates
 - Merged Column Month & Year to Month-Year
 - Remove the Column Month Number
 - Changed the data type

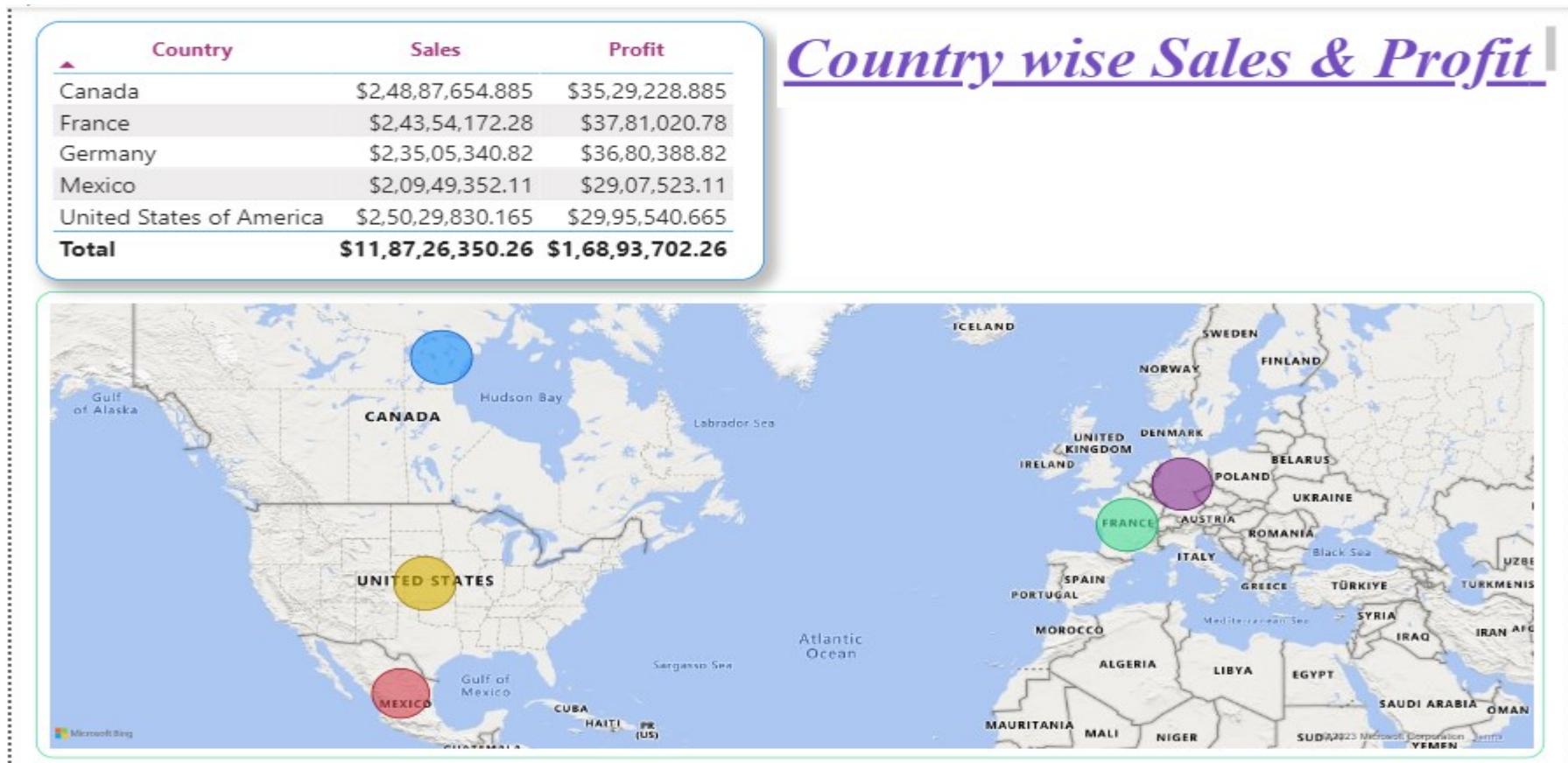
The screenshot shows the Power Query Editor interface with the following details:

- File Bar:** Home, Transform, Add Column, View, Tools, Help.
- Toolbars:** Close & Apply, New Source, Recent Sources, Enter Data, Data source settings, Manage Parameters, Refresh Preview, Advanced Editor, Properties, Choose Columns, Remove Columns, Keep Rows, Remove Rows, Reduce Rows, Sort, Split Column, Group By, Data Type: Text, Use First Row as Headers, Merge Queries, Append Queries, Combine Files, Text Analytics, Vision, Azure Machine Learning, AI Insights.
- Queries [1]:** Financial Data
- Table View:** A table with columns: Segment, Country, Product, Discount Band, Units Sold, Manufacturing Pr. The table contains 24 rows of data, mostly from Canada, with some from France and other countries like Amarilla, Carretera, Paseo, Velo, and VTT.
- Properties Panel:** Shows the query name is "Financial Data".
- Applied Steps Panel:** Shows the steps taken:
 - Source
 - Navigation
 - Changed Type
 - Removed Columns
 - Merged Columns
 - Removed DuplicatesThe "Removed Duplicates" step is currently selected.

Interactive Dashboard by using visualization tools



Interactive Dashboard by using visualization tools



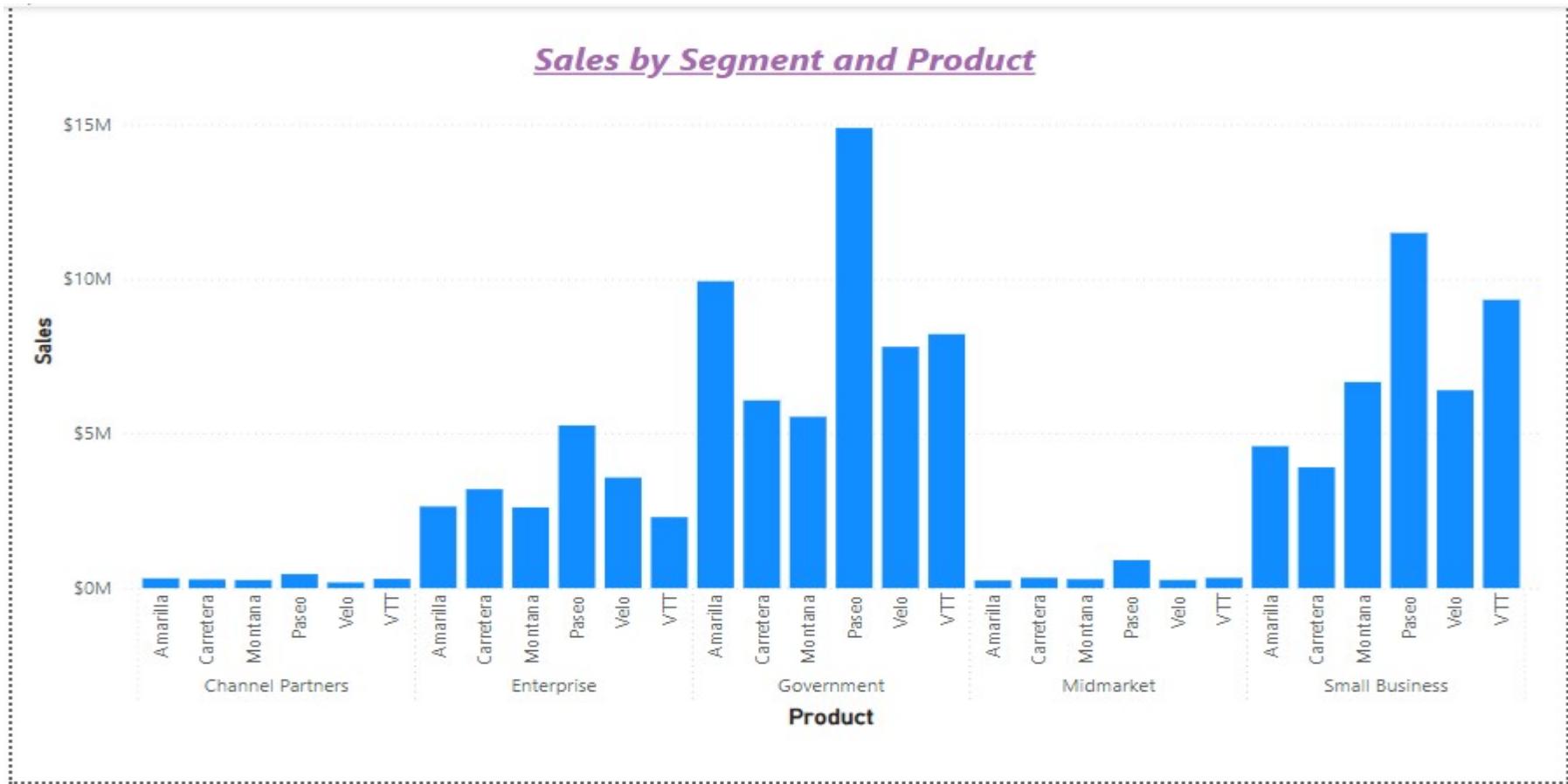
Interactive Dashboard by using visualization tools



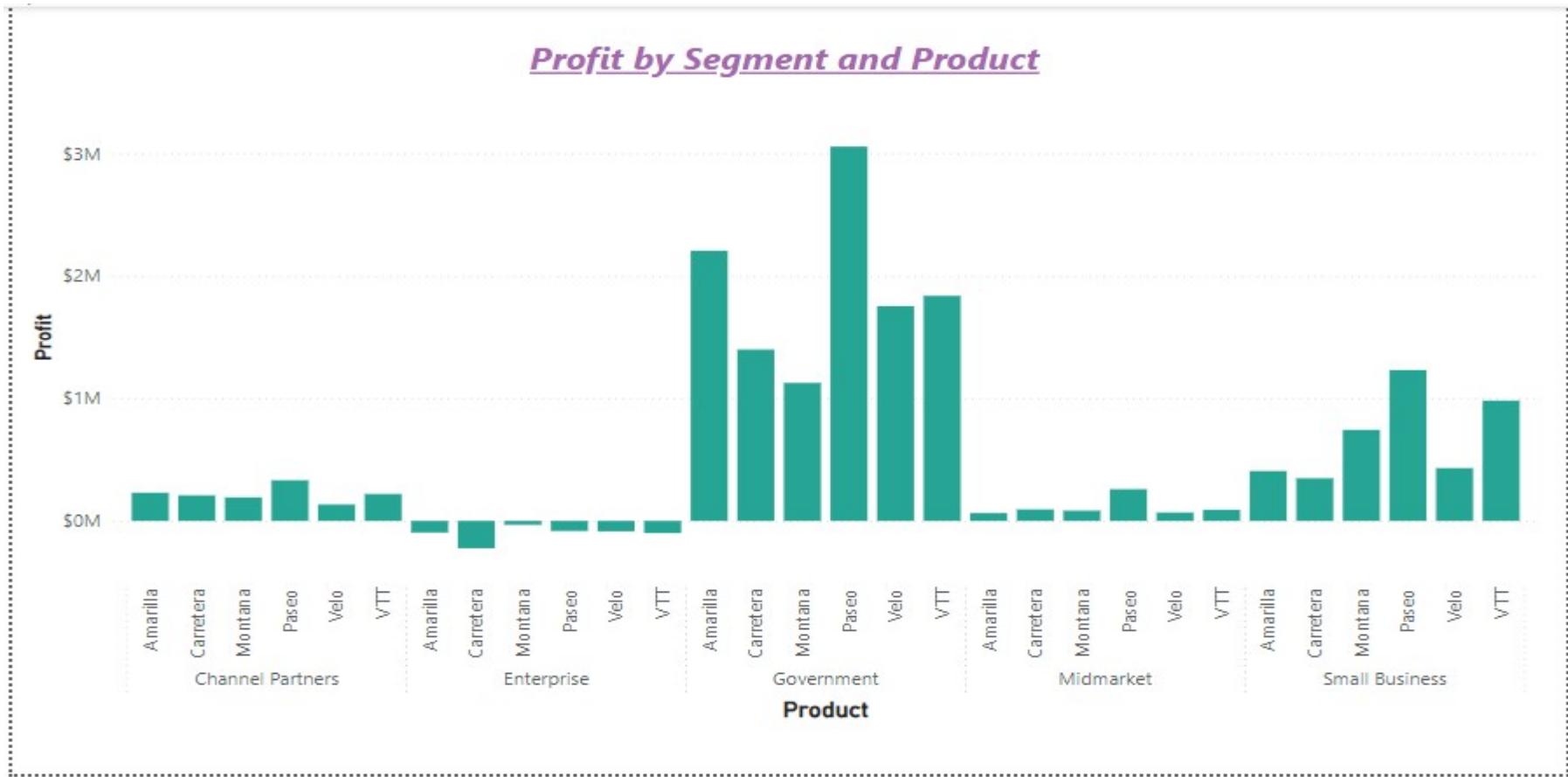
Interactive Dashboard by using visualization tools



Interactive Dashboard by using visualization tools



Interactive Dashboard by using visualization tools



Interactive Dashboard by using visualization tools



Interactive Dashboard by using visualization tools



Conclusion and Inferences

- Total number of units sold during the period ‘September 2014 to December 2014’ is more than the ‘September 2013 to December 2013’. It can be seen that in the said period there is an increase observed for September (about 13%), October (about 10%) & December (about 93%) month of 2014 with respect to 2013 whereas in November month (about -15%) it decreases. Similar trend is followed for the profit and sales also (percentage change may be differ).
- Maximum number of units sold corresponding to Discount band having ‘High’ and it has the contribution about 36%, whereas maximum profit (about 37% of total profit) made corresponding to ‘Low’ Discount band.
- Every segment has made a profit except the ‘Enterprise’. Enterprise has made loss(negative profit) for every product. Segment ‘Government’ has made the maximum profit and maximum sales.
- Quarter 4 has the maximum sales and profit.
- From country wise profit analysis, it can be seen that “France” has the maximum profit of about 23% of total profit followed by Germany about 22%, Canada about 21%, USA 18% & Mexico 17%.
- Bottom 3 products for Units Sold, COGS, Sales, and Profit are Velo, Montana & Carretera.
- Maximum number of transactions done in June, October, and December.

Endnotes

Reference Links:-

1. Excel File



Western
Countries Financial Data

2. Power BI File



Capstone Project