Power BI Basics

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Part 2

Power BI Visuals

Visuals are tools which help us present the data in a compelling and insightful way, and help you show the important components of it. Visualizing data is one of the core parts and basic building blocks of Power BI. Well designed visuals are one of the most effective ways of presenting and sharing our data. For example, a chart or graph can be used to present data visually.

Common Visualizations in Power BI-

1. Maps
2. Card Visualization
3. Stacked area chart
4. Pie Chart
5. Bar Plot

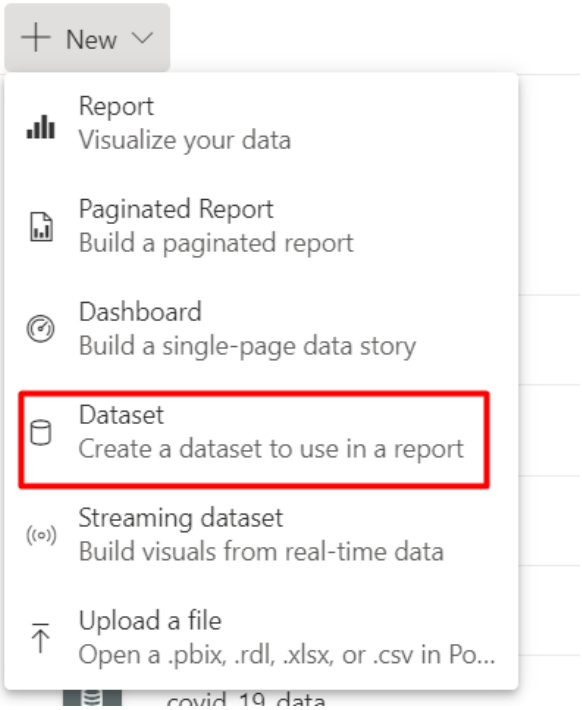
Relevance of Visualization

Data analysis and Data Science are one of the most sought-after skills of current times, having good visualizations helps in the process of efficient graphic interpretation of data.

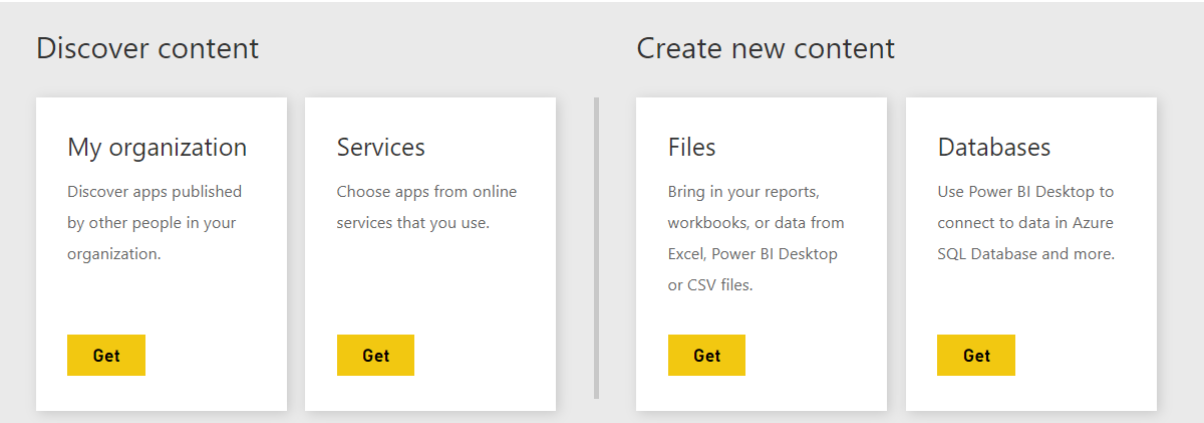
Human brain is easily able to process visual information; hence it is easier to use images, charts or graphs to understand and to visualize large amounts of complex data.

Getting data in Power BI

Here, let us take reference of Power BI Service. In your workspace, there will be an option “New”, select dataset from there.

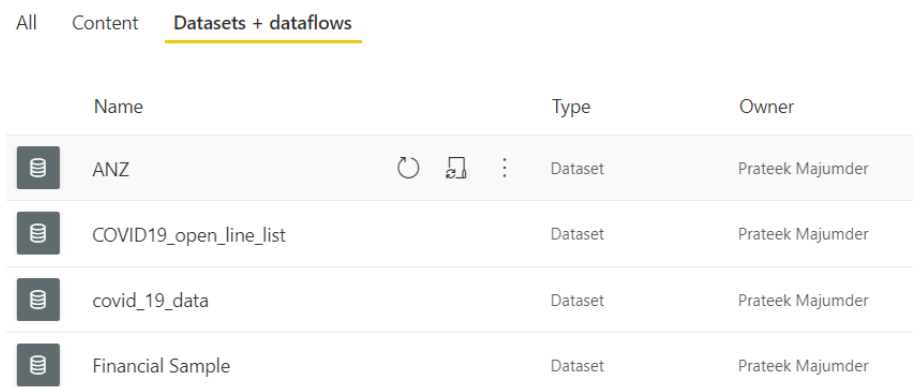


This will take to a new window, where one needs to select the data source.

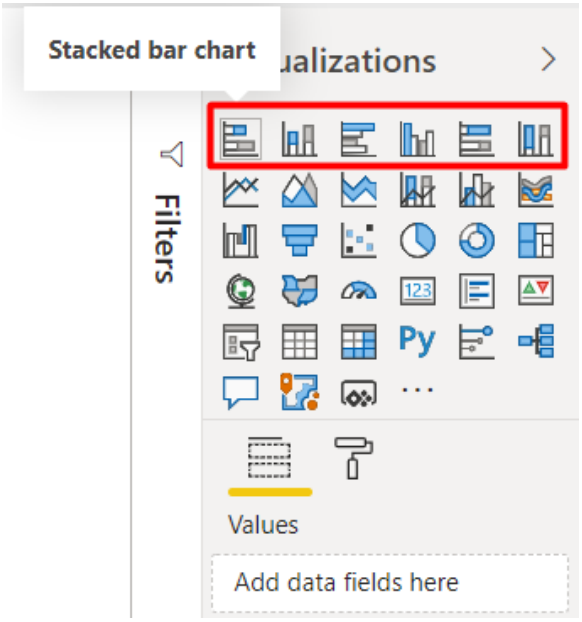


Depending on the type of work you do, you might take data from an online data source or a local csv file.

Your datasets and dataflows are listed in Datasets + Dataflows.



Bar Charts and Column Charts



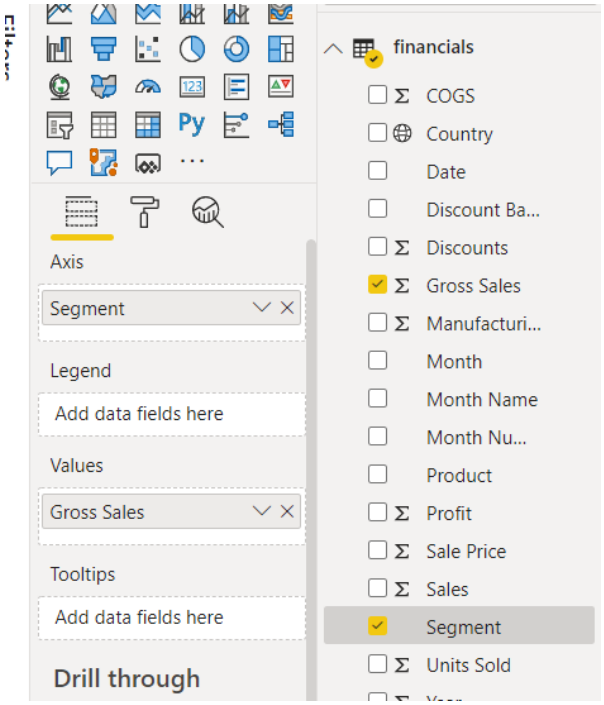
A bar chart is used when we want to show a distribution of data points or perform a comparison of metric values across different subgroups of your data. From a bar chart, we can see which groups highest or most common, and how other groups are compare against the others.

We take the Financial Sample data available for working with Power BI.

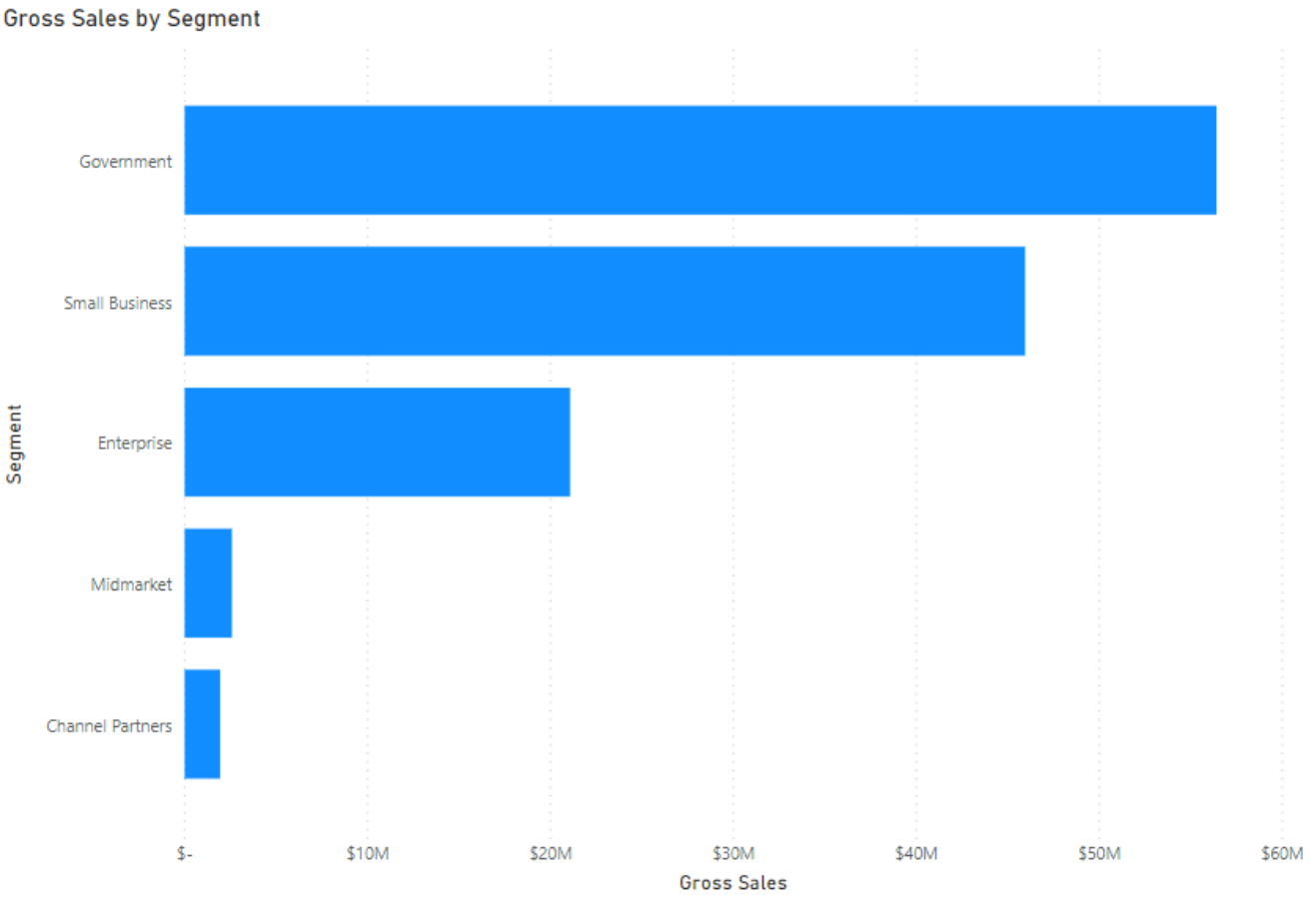
Segment	Country	Product	Discount Band	Units Sold	Manufactur	Sale Price	Gross Sales	Discounts	Sales	COGS	Profit	Date	Month Number	Month Name	Year
Government	Canada	Carretera	None	1618.5	$ 3.00	$ 20.00	$ 32,370.00	$ -	$ 32,370.00	$16,185.00	$ 16,185.00	01-01-2014	1	January	2014
Government	Germany	Carretera	None	1321	$ 3.00	$ 20.00	$ 26,420.00	$ -	$ 26,420.00	$13,210.00	$ 13,210.00	01-01-2014	1	January	2014
Midmarket	France	Carretera	None	2178	$ 3.00	$ 15.00	$ 32,670.00	$ -	$ 32,670.00	$21,780.00	$ 10,890.00	01-06-2014	6	June	2014
Midmarket	Germany	Carretera	None	888	$ 3.00	$ 15.00	$ 13,320.00	$ -	$ 13,320.00	$ 8,880.00	$ 4,440.00	01-06-2014	6	June	2014
Midmarket	Mexico	Carretera	None	2470	$ 3.00	$ 15.00	$ 37,050.00	$ -	$ 37,050.00	$24,700.00	$ 12,350.00	01-06-2014	6	June	2014
Government	Germany	Carretera	None	1513	$ 3.00	$ 350.00	$ 5,29,550.00	$ -	$ 5,29,550.00	#########	$ 1,36,170.00	01-12-2014	12	December	2014
Midmarket	Germany	Montana	None	921	$ 5.00	$ 15.00	$ 13,815.00	$ -	$ 13,815.00	$ 9,210.00	$ 4,605.00	01-03-2014	3	March	2014
Channel Partners	Canada	Montana	None	2518	$ 5.00	$ 12.00	$ 30,216.00	$ -	$ 30,216.00	$ 7,554.00	$ 22,662.00	01-06-2014	6	June	2014
Government	France	Montana	None	1899	$ 5.00	$ 20.00	$ 37,980.00	$ -	$ 37,980.00	$18,990.00	$ 18,990.00	01-06-2014	6	June	2014
Channel Partners	Germany	Montana	None	1545	$ 5.00	$ 12.00	$ 18,540.00	$ -	$ 18,540.00	$ 4,635.00	$ 13,905.00	01-06-2014	6	June	2014
Midmarket	Mexico	Montana	None	2470	$ 5.00	$ 15.00	$ 37,050.00	$ -	$ 37,050.00	$24,700.00	$ 12,350.00	01-06-2014	6	June	2014
Enterprise	Canada	Montana	None	2665.5	$ 5.00	$ 125.00	$ 3,33,187.50	$ -	$ 3,33,187.50	#########	$ 13,327.50	01-07-2014	7	July	2014
Small Business	Mexico	Montana	None	958	$ 5.00	$ 300.00	$ 2,87,400.00	$ -	$ 2,87,400.00	#########	$ 47,900.00	01-08-2014	8	August	2014
Government	Germany	Montana	None	2146	$ 5.00	$ 7.00	$ 15,022.00	$ -	$ 15,022.00	$10,730.00	$ 4,292.00	01-09-2014	9	September	2014
Enterprise	Canada	Montana	None	345	$ 5.00	$ 125.00	$ 43,125.00	$ -	$ 43,125.00	$41,400.00	$ 1,725.00	01-10-2013	10	October	2013
Midmarket	United States of America	Montana	None	615	$ 5.00	$ 15.00	$ 9,225.00	$ -	$ 9,225.00	$ 6,150.00	$ 3,075.00	01-12-2014	12	December	2014
Government	Canada	Paseo	None	292	$ 10.00	$ 20.00	$ 5,840.00	$ -	$ 5,840.00	$ 2,920.00	$ 2,920.00	01-02-2014	2	February	2014
Midmarket	Mexico	Paseo	None	974	$ 10.00	$ 15.00	$ 14,610.00	$ -	$ 14,610.00	$ 9,740.00	$ 4,870.00	01-02-2014	2	February	2014
Channel Partners	Canada	Paseo	None	2518	$ 10.00	$ 12.00	$ 30,216.00	$ -	$ 30,216.00	$ 7,554.00	$ 22,662.00	01-06-2014	6	June	2014
Government	Germany	Paseo	None	1006	$ 10.00	$ 350.00	$ 3,52,100.00	$ -	$ 3,52,100.00	#########	$ 90,540.00	01-06-2014	6	June	2014
Channel Partners	Germany	Paseo	None	367	$ 10.00	$ 12.00	$ 4,404.00	$ -	$ 4,404.00	$ 1,101.00	$ 3,303.00	01-07-2014	7	July	2014
Government	Mexico	Paseo	None	883	$ 10.00	$ 7.00	$ 6,181.00	$ -	$ 6,181.00	$ 4,415.00	$ 1,766.00	01-08-2014	8	August	2014
Midmarket	France	Paseo	None	549	$ 10.00	$ 15.00	$ 8,235.00	$ -	$ 8,235.00	$ 5,490.00	$ 2,745.00	01-09-2013	9	September	2013
Small Business	Mexico	Paseo	None	788	$ 10.00	$ 300.00	$ 2,36,400.00	$ -	$ 2,36,400.00	#########	$ 39,400.00	01-09-2013	9	September	2013
Midmarket	Mexico	Paseo	None	2472	$ 10.00	$ 15.00	$ 37,080.00	$ -	$ 37,080.00	$24,720.00	$ 12,360.00	01-09-2014	9	September	2014
Government	United States of America	Paseo	None	1143	$ 10.00	$ 7.00	$ 8,001.00	$ -	$ 8,001.00	$ 5,715.00	$ 2,286.00	01-10-2014	10	October	2014
Government	Canada	Paseo	None	1725	$ 10.00	$ 350.00	$ 6,03,750.00	$ -	$ 6,03,750.00	#########	$ 1,55,250.00	01-11-2013	11	November	2013
Channel Partners	United States of America	Paseo	None	912	$ 10.00	$ 12.00	$ 10,944.00	$ -	$ 10,944.00	$ 2,736.00	$ 8,208.00	01-11-2013	11	November	2013
Midmarket	Canada	Paseo	None	2152	$ 10.00	$ 15.00	$ 32,280.00	$ -	$ 32,280.00	$21,520.00	$ 10,760.00	01-12-2013	12	December	2013
Government	Canada	Paseo	None	1817	$ 10.00	$ 20.00	$ 36,340.00	$ -	$ 36,340.00	$18,170.00	$ 18,170.00	01-12-2014	12	December	2014
Government	Germany	Paseo	None	1513	$ 10.00	$ 350.00	$ 5,29,550.00	$ -	$ 5,29,550.00	#########	$ 1,36,170.00	01-12-2014	12	December	2014
Government	Mexico	Velo	None	1493	$ 120.00	$ 7.00	$ 10,451.00	$ -	$ 10,451.00	$ 7,465.00	$ 2,986.00	01-01-2014	1	January	2014
Enterprise	France	Velo	None	1804	$ 120.00	$ 125.00	$ 2,25,500.00	$ -	$ 2,25,500.00	#########	$ 9,020.00	01-02-2014	2	February	2014
Channel Partners	Germany	Velo	None	2161	$ 120.00	$ 12.00	$ 25,932.00	$ -	$ 25,932.00	$ 6,483.00	$ 19,449.00	01-03-2014	3	March	2014
Government	Germany	Velo	None	1006	$ 120.00	$ 350.00	$ 3,52,100.00	$ -	$ 3,52,100.00	#########	$ 90,540.00	01-06-2014	6	June	2014
Channel Partners	Germany	Velo	None	1545	$ 120.00	$ 12.00	$ 18,540.00	$ -	$ 18,540.00	$ 4,635.00	$ 13,905.00	01-06-2014	6	June	2014
Enterprise	United States of America	Velo	None	2821	$ 120.00	$ 125.00	$ 3,52,625.00	$ -	$ 3,52,625.00	#########	$ 14,105.00	01-08-2014	8	August	2014
Enterprise	Canada	Velo	None	345	$ 120.00	$ 125.00	$ 43,125.00	$ -	$ 43,125.00	$41,400.00	$ 1,725.00	01-10-2013	10	October	2013

The data when looked at using Excel does not make much sense, let us try to use Power BI.

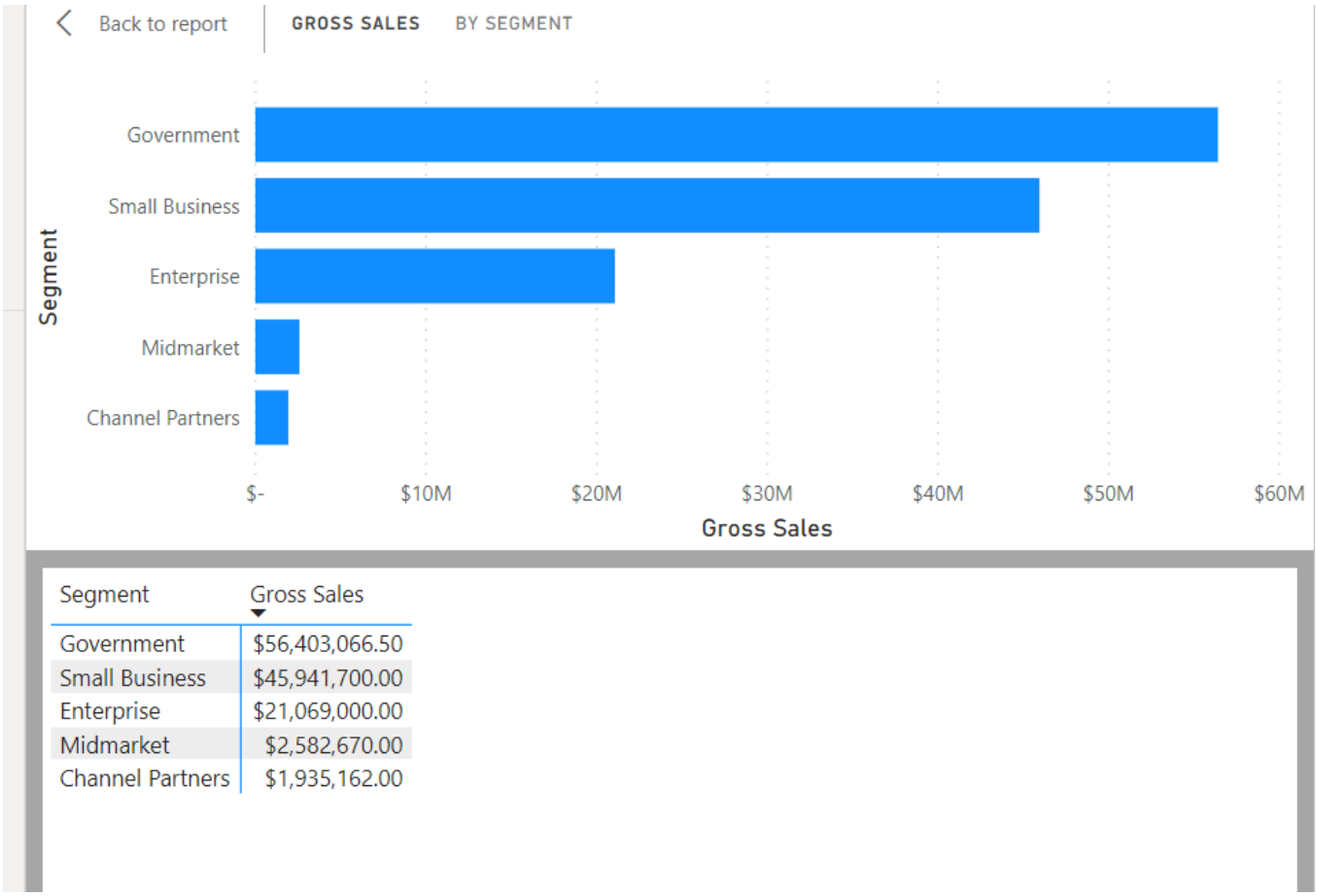
We add the clustered bar chart, then the Gross Sales are assigned to values, and Segment (where Sales are made) are added to Axis.



This gives the following bar plot.

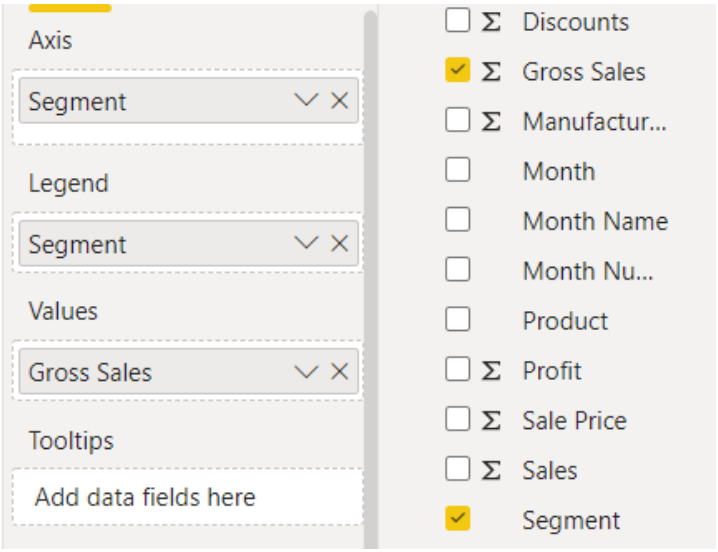


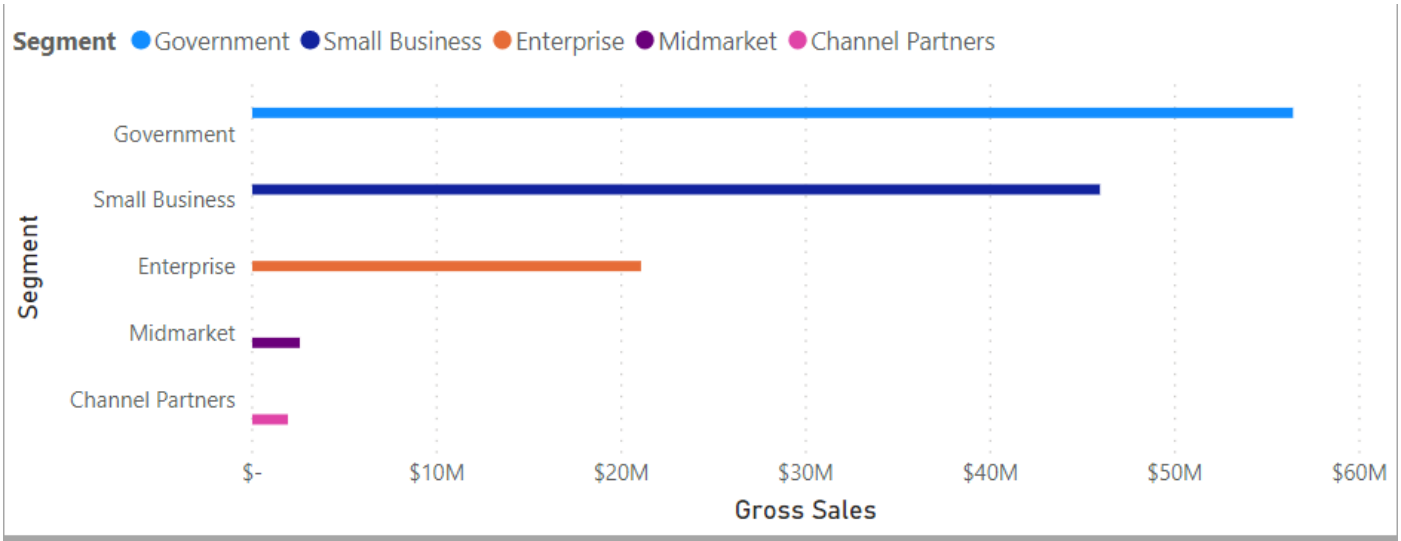
Right clicking and selecting “Show as a table will give more detailed analysis.”



Segment	Gross Sales
Government	$56,403,066.50
Small Business	$45,941,700.00
Enterprise	$21,069,000.00
Midmarket	$2,582,670.00
Channel Partners	$1,935,162.00

Now, we shall add Segment to the legend. This gives us more detailed and color separations, which are better to look at.





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More insights on such charts-

1. The primary variable of a bar chart is its categorical variable. A categorical variable takes discrete values, which can be thought of as labels. For example, while dealing with data of automobile industry, they can be Labels like car company, Porsche, Ferrari, BMW etc. Point to be kept in mind is that the groups must distinct and well defined.

2. The secondary variable will be numeric in nature. The secondary variable's values determine the length of each bar. Taking the example of automobile industry, the value can be the sales of a company in a year or number of cars manufactured etc.

3. Bar charts are the most simple charts one can make, but can give important inferences, hence a powerful tool for data analysis.