



CRASH COURSE NOTES



BY SATISH DHAWALE





What is Power BI?

Microsoft Power BI is a Powerful Business Intelligence (BI) platform that provides nontechnical business users with tools for aggregating, analyzing, visualizing and sharing data. It is used to create interactive dashboards on any kind of Data Sets.

Users can download an application as POWER BI DESKTOP for their use and they can learn to create dashboard

Let's learn How to Download and Install Power BI





How to Download and Install Power BI ?

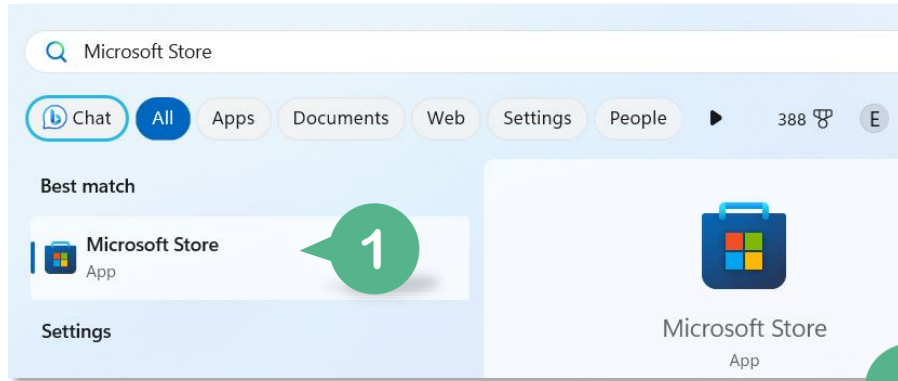
- 1 – Start Microsoft store in Your Computer / Laptop
- 2 – Search Power BI Desktop
- 3 – Click on GET button, now POWER BI will get installed in your system
- 4 – Now Click on Open to Start POWER BI

For Reference you can check next page screenshot....



Download and Install Power BI

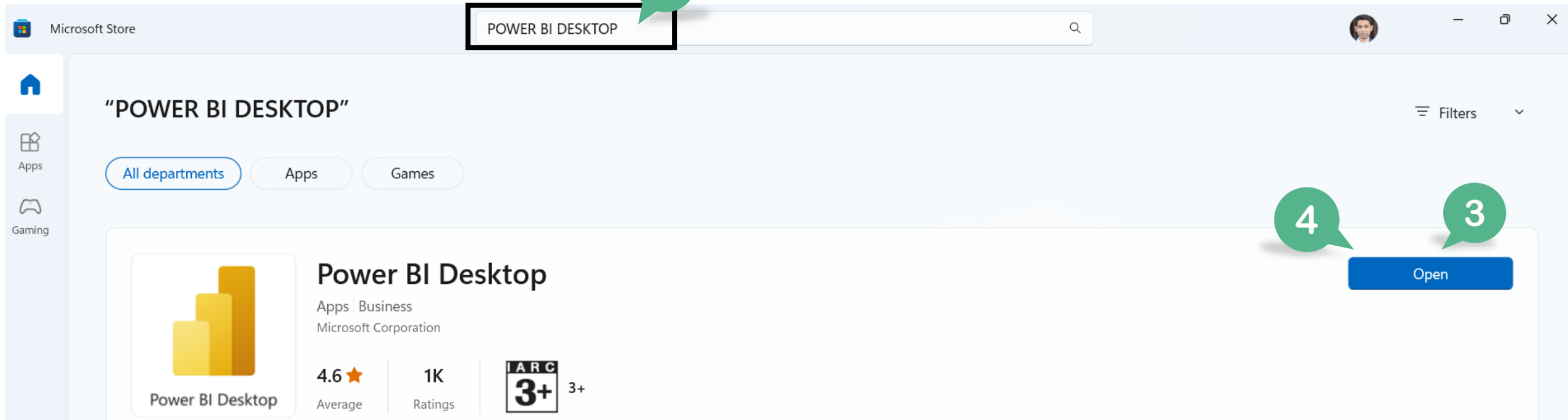
1. Start Microsoft Store



2. Search POWER BI Desktop on Microsoft Store and Press Enter

3. Click on Get Button to Install it.

4. Once Install Get Button will Replace with OPEN Button



1. Click on Close button no need Sign in

Power BI Desktop

Get data

Recent sources

Global Store SALES Dashboard.pbix
D: » Workshop » ONE DAY WORKSHOP

Global Store SALES Dashboard.pbix
D: » Workshop » POWER BI

Global Store Dashboard.pbix
D: » Workshop » POWER BI

65 - Practical use of Variables in DAX.p...
D: » Power BI » Project Files - PowerBI

Open other reports

Collaborate and share

Sign in to publish your reports, access certified datasets, and share insights on organizational content in the Power BI service.

Get started

Want to buy a Power BI license? [Buy now](#)

WHAT'S NEW

Take a look at what's new and improved in Power BI in this month's update.

POWER BI BLOG

Keep up to date with the latest news, resources, and updates from the Power BI team.

FORUMS

Visit the Power BI Forum to ask questions or interact with other users in the Power BI community.

TUTORIALS

Ready to learn more about Power BI?

Visualizations

Build visual

Filters

Values

Drill through

Cross-report

Keep all filters

Add data fields here

Add drill-through fields here

1

Power BI Interface - Explained

The image shows the Power BI Desktop interface with several key components labeled:

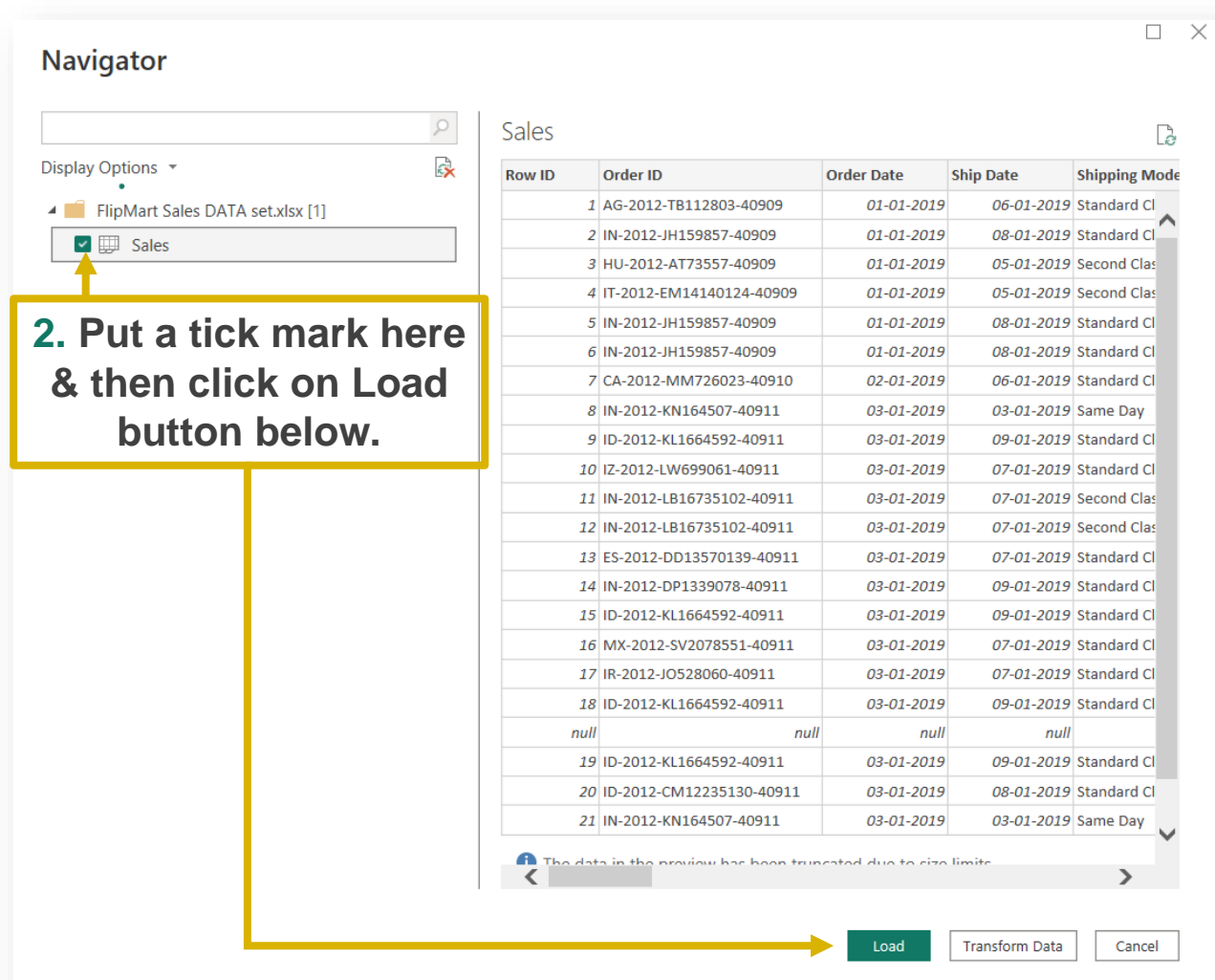
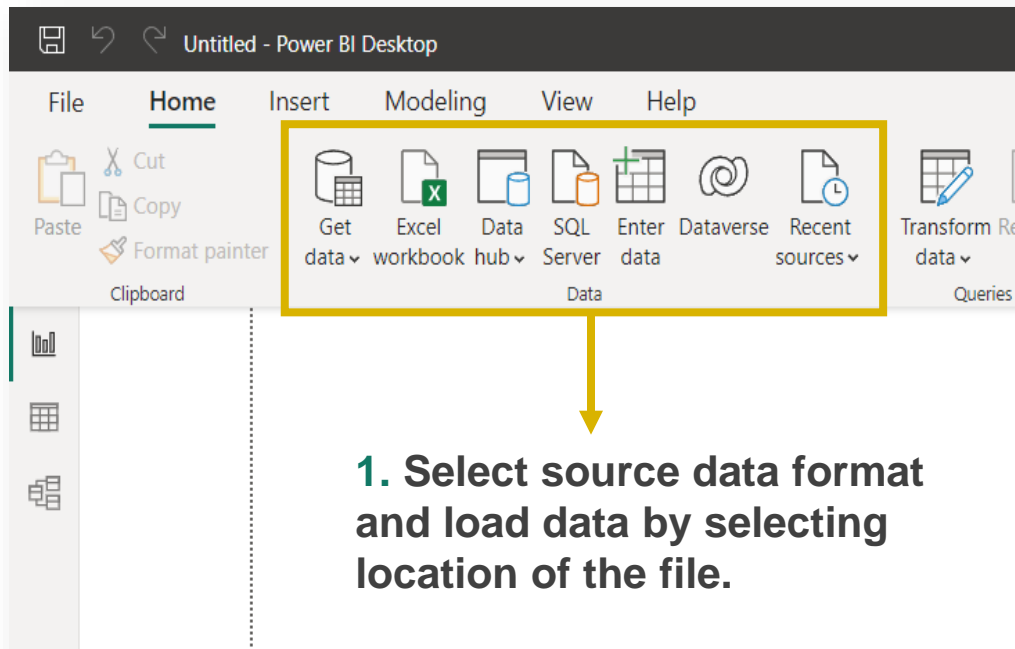
- Ribbon**: The top menu bar containing tabs like File, Home, Insert, Modeling, View, Optimize, and Help. It includes various tool groups such as Clipboard, Data, Queries, Visuals, Calculations, and Sensitivity.
- Filters Pane**: A pane on the right side of the interface, used to filter data fields on the page and across all pages.
- Workspace | Canvas**: The central area where you build your report. It includes a prompt to "Add data to your report" and a section for "Get data from another source" with options like "Import data from Excel", "Import data from SQL Server", "Paste data into a blank table", and "Try a sample dataset".
- Visuals Pane**: A pane on the right side of the interface, used to add and format visualizations. It includes a "Build visual" section with various chart types, a "Values" section for adding data fields, and a "Drill through" section for adding drill-through fields.
- Data Pane**: A pane on the right side of the interface, used to view and manage the data fields in your report. It includes a search bar and a message: "You haven't loaded any data yet. Get data".
- Pages**: The bottom section of the interface, used to manage the pages of your report. It shows "Page 1" and a "+" button to add new pages.

Helps to you add filters to your visuals

Helps you add visuals to your dashboards & format it.

Shows all fields from your data

Loading your data



Navigator

Display Options ▾

FlipMart Sales DATA set.xlsx [1]

☒ Sales

2. Use this option if there is any transformation in data such as Remove blank rows/ remove errors

Sales

Row ID	Order ID	Order Date	Ship Date	Shipping Mode
1	AG-2012-TB112803-40909	01-01-2019	06-01-2019	Standard Cl
2	IN-2012-JH159857-40909	01-01-2019	08-01-2019	Standard Cl
3	HU-2012-AT73557-40909	01-01-2019	05-01-2019	Second Clas
4	IT-2012-EM14140124-40909	01-01-2019	05-01-2019	Second Clas
5	IN-2012-JH159857-40909	01-01-2019	08-01-2019	Standard Cl
6	IN-2012-JH159857-40909	01-01-2019	08-01-2019	Standard Cl
7	CA-2012-MM726023-40910	02-01-2019	06-01-2019	Standard Cl
8	IN-2012-KN164507-40911	03-01-2019	03-01-2019	Same Day
9	ID-2012-KL1664592-40911	03-01-2019	09-01-2019	Standard Cl
10	IZ-2012-LW699061-40911	03-01-2019	07-01-2019	Standard Cl
11	IN-2012-LB16735102-40911	03-01-2019	07-01-2019	Second Clas
12	IN-2012-LB16735102-40911	03-01-2019	07-01-2019	Second Clas
13	ES-2012-DD13570139-40911	03-01-2019	07-01-2019	Standard Cl
14	IN-2012-DP1339078-40911	03-01-2019	09-01-2019	Standard Cl
15	ID-2012-KL1664592-40911	03-01-2019	09-01-2019	Standard Cl
16	MX-2012-SV2078551-40911	03-01-2019	07-01-2019	Standard Cl
17	IR-2012-JO528060-40911	03-01-2019	07-01-2019	Standard Cl
18	ID-2012-KL1664592-40911	03-01-2019	09-01-2019	Standard Cl
	null	null	null	
19	ID-2012-KL1664592-40911	03-01-2019	09-01-2019	Standard Cl
20	ID-2012-CM12235130-40911	03-01-2019	08-01-2019	Standard Cl
21	IN-2012-KN164507-40911	03-01-2019	03-01-2019	Same Day

The data in the preview has been truncated due to size limits

Load

Transform Data

Cancel

1

2

3

1. Click on Home Tab

2. Click on Remove rows option

3. Remove Blank Rows

Remove Top Rows

Remove Bottom Rows

Remove Alternate Rows

Remove Duplicates

Remove Blank Rows

Remove Errors

Row ID	Order ID	Order Date	Shipping Mode	Customer ID	Customer Name
1	AG-2012-TB112803-40909	01-01-2019	Standard Class	TB-112803	Toby Braunha
2	IN-2012-JH159857-40909	01-01-2019	Standard Class	JH-159857	Joseph Holt
3	HU-2012-AT73557-40909	01-01-2019	Second Class	AT-73557	Annie Thurma
4	IT-2012-EM14140124-40909	01-01-2019	Second Class	EM-14140124	Eugene More
9		01-01-2019	Standard Class	JH-159857	Joseph Holt
9		01-01-2019	Standard Class	JH-159857	Joseph Holt
910		02-01-2019	Standard Class	MM-726023	Magdelene M
11		03-01-2019	Same Day	KN-164507	Kean Nguyen
11		03-01-2019	Standard Class	KL-1664592	Ken Lonsdale
11		03-01-2019	Standard Class	LW-699061	Lindsay Willia
11		03-01-2019	Standard Class	LW-699061	Lindsay Willia
11		03-01-2019	Second Class	LB-16735102	Larry Blacks
12		03-01-2019	Second Class	LB-16735102	Larry Blacks
13	ES-2012-DD13570139-40911	03-01-2019	Standard Class	DD-13570139	Dorothy Dicki
14	IN-2012-DP1339078-40911	03-01-2019	Standard Class	DP-1339078	Dennis Pardu
15	ID-2012-KL1664592-40911	03-01-2019	Standard Class	KL-1664592	Ken Lonsdale
16	MX-2012-SV2078551-40911	03-01-2019	Standard Class	SV-2078551	Stewart Visin
17	IR-2012-JO528060-40911	03-01-2019	Standard Class	JO-528060	Jas O'Carroll
18	ID-2012-KL1664592-40911	03-01-2019	Standard Class	KL-1664592	Ken Lonsdale
19	null	null	null	null	null
20	ID-2012-KL1664592-40911	03-01-2019	Standard Class	KL-1664592	Ken Lonsdale
21	ID-2012-CM12235130-40911	03-01-2019	Standard Class	CM-12235130	Chris McAfee
22	IN-2012-KN164507-40911	03-01-2019	Same Day	KN-164507	Kean Nguyen
23	IR-2012-NG835560-40911	03-01-2019	Second Class	NG-835560	Nat Gilpin
24	IR-2012-JO528060-40911	03-01-2019	Standard Class	JO-528060	Jas O'Carroll
25	TZ-2012-JG5115129-40911	03-01-2019	Standard Class	JG-5115129	Jack Garza
26	IZ-2012-LW699061-40911	03-01-2019	Standard Class	LW-699061	Lindsay Willia
27	IN-2012-LB16735102-40911	03-01-2019	Second Class	LB-16735102	Larry Blacks
28					

Query Settings

PROPERTIES

Name

Sales

All Properties

APPLIED STEPS

Source

Navigation

Promoted Headers

Changed Type

22 COLUMNS, 999+ ROWS

Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 19:53

FileHomeTransformAdd ColumnViewToolsHelp

Close & Apply

Apply

Close

Sales

New Source

Recent Sources

Enter Data

Data source settings

Manage Parameters

Refresh Preview

Advanced Editor

Manage

Choose Columns

Remove Columns

Keep Rows

Remove Rows

Sort

Split Column

Group By

Data Type: Whole Number

Use First Row as Headers

Replace Values

Merge Queries

Append Queries

Combine Files

Text Analytics

Vision

Azure Machine Learning

Close & Apply

Apply

Close

Sales

23

Row ID

AB C Order ID

Order Date

Ship Date

AB C Shipping Mode

AB C Customer ID

AB C Customer Name

1

AG-2012-TB112803-40909

01-01-2019

06-01-2019

Standard Class

TB-112803

Toby Braunha

2

IN-2012-JH159857-40909

01-01-2019

08-01-2019

Standard Class

JH-159857

Joseph Holt

3

HU-2012-AT73557-40909

01-01-2019

05-01-2019

Second Class

AT-73557

Annie Thurma

4

IT-2012-EM14140124-40909

01-01-2019

05-01-2019

Second Class

EM-14140124

Eugene More

5

IN-2012-JH159857-40909

01-01-2019

08-01-2019

Standard Class

JH-159857

Joseph Holt

6

IN-2012-JH159857-40909

01-01-2019

08-01-2019

Standard Class

JH-159857

Joseph Holt

7

CA-2012-MM726023-40910

02-01-2019

06-01-2019

Standard Class

MM-726023

Magdelene M

8

IN-2012-KN164507-40911

03-01-2019

03-01-2019

Same Day

KN-164507

Kean Nguyen

9

ID-2012-KL1664592-40911

03-01-2019

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07-01-2019

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LW-699061

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IN-2012-LB16735102-40911

03-01-2019

07-01-2019

Second Class

LB-16735102

Larry Blacks

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03-01-2019

09-01-2019

Standard Class

KL-1664592

Ken Lonsdale

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MX-2012-SV2078551-40911

03-01-2019

07-01-2019

Standard Class

SV-2078551

Stewart Visin

17

IR-2012-JO528060-40911

03-01-2019

07-01-2019

Standard Class

JO-528060

Jas O'Carroll

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ID-2012-KL1664592-40911

03-01-2019

09-01-2019

Standard Class

KL-1664592

Ken Lonsdale

19

ID-2012-KL1664592-40911

03-01-2019

09-01-2019

Standard Class

KL-1664592

Ken Lonsdale

20

ID-2012-CM12235130-40911

03-01-2019

08-01-2019

Standard Class

CM-12235130

Chris McAfee

21

IN-2012-KN164507-40911

03-01-2019

03-01-2019

Same Day

KN-164507

Kean Nguyen

22

IR-2012-NG835560-40911

03-01-2019

08-01-2019

Second Class

NG-835560

Nat Gilpin

23

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03-01-2019

07-01-2019

Standard Class

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Jas O'Carroll

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03-01-2019

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03-01-2019

07-01-2019

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03-01-2019

07-01-2019

Second Class

LB-16735102

Larry Blacks

27

IR-2012-JO528060-40911

03-01-2019

07-01-2019

Standard Class

JO-528060

Jas O'Carroll

28

22 COLUMNS, 999+ ROWS

Column profiling based on top 1000 rows

Query Settings

PROPERTIES

Name

Sales

All Properties

APPLIED STEPS

Source

Navigation

Promoted Headers

Changed Type

Removed Blank Rows

4. Close & Apply

22 COLUMNS, 999+ ROWS Column profiling based on top 1000 rows

PREVIEW DOWNLOADED AT 19:51

Notes Created by Satish Dhawale (7 Silver and 1 Gold Button Award winner From YouTube – 16 Years of Experienced)

Build visuals with your data

Select or drag fields from the **Data** pane onto the report canvas.



Visualizations

 Build visual

Name	Sales
Storage mode	Import
Data refreshed	6/26/2023, 8:00:43 PM

Search

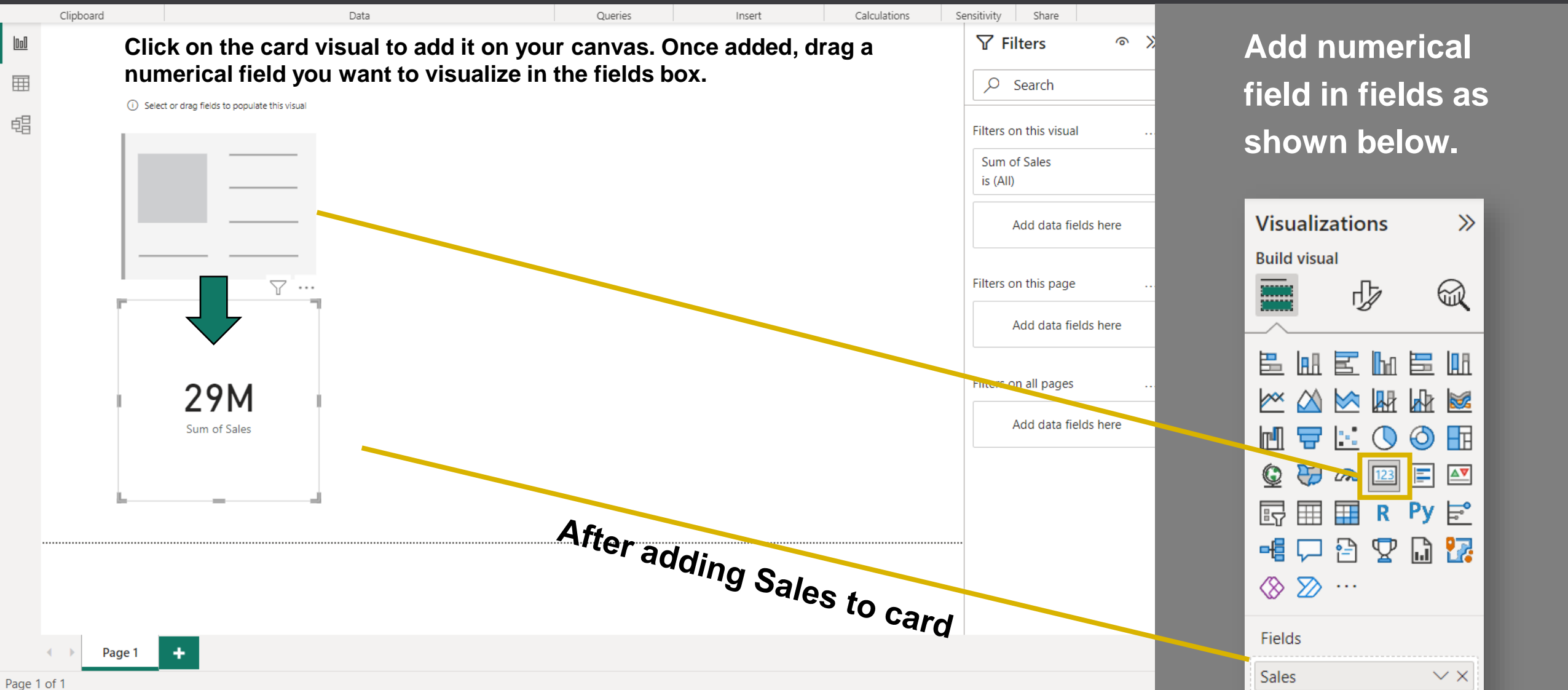
>  Sales

5. Click to see all Fields

Creating a card

Click on the card visual to add it on your canvas. Once added, drag a numerical field you want to visualize in the fields box.

Select or drag fields to populate this visual



The screenshot shows the Power BI interface. On the left, a card visual is displayed with the value '29M' and the label 'Sum of Sales'. A green arrow points from the card visual to the 'Sales' field in the 'Fields' box of the 'Visualizations' pane on the right. The 'Visualizations' pane shows a grid of visualization icons, with the 'Card' icon highlighted. The 'Fields' box at the bottom of the pane contains the 'Sales' field.

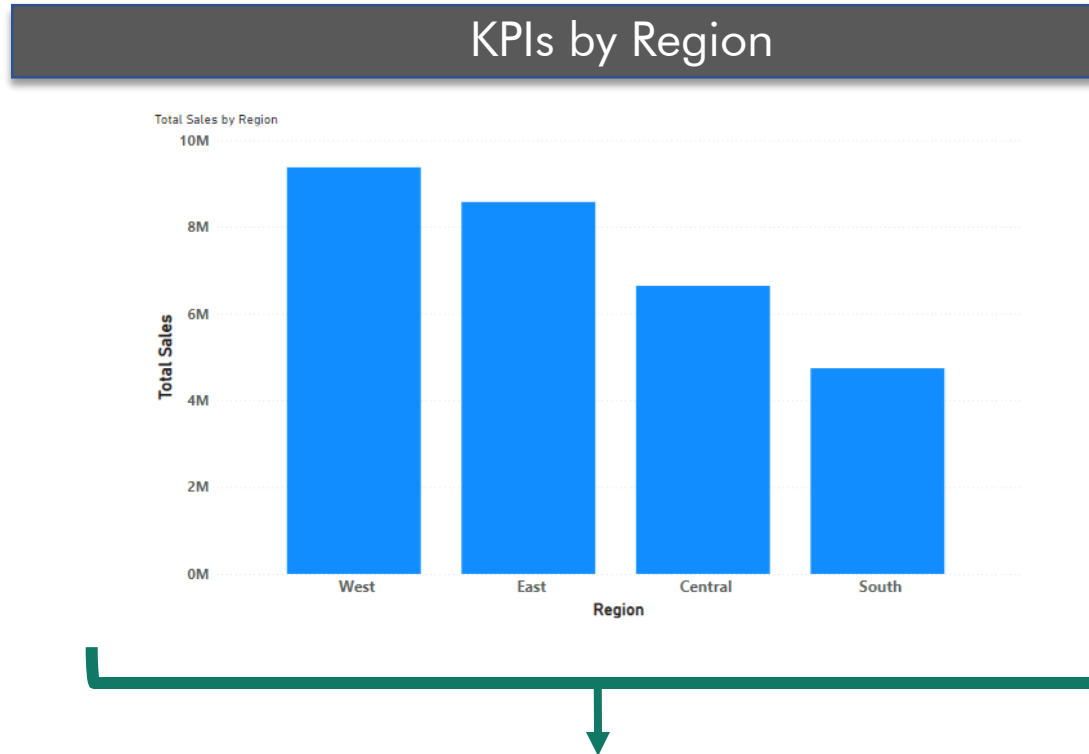
After adding Sales to card

Add numerical field in fields as shown below.

Creating a Column Chart - X-axis & Y-axis

**Total Sales is
your Y-axis**

Adding numerical
metric as Y-axis helps
the user understand
the extent of it by the
column height.



Region is your X-axis

Add the text based field that you want to see in the X-axis. As we are using a column chart, numerical metrics like sales, profit etc., will become Y-axis as we want the column HEIGHT to show the extent of that metric.

**Add fields in X &
Y Axis as shown
below.**

X-axis

Region

Y-axis

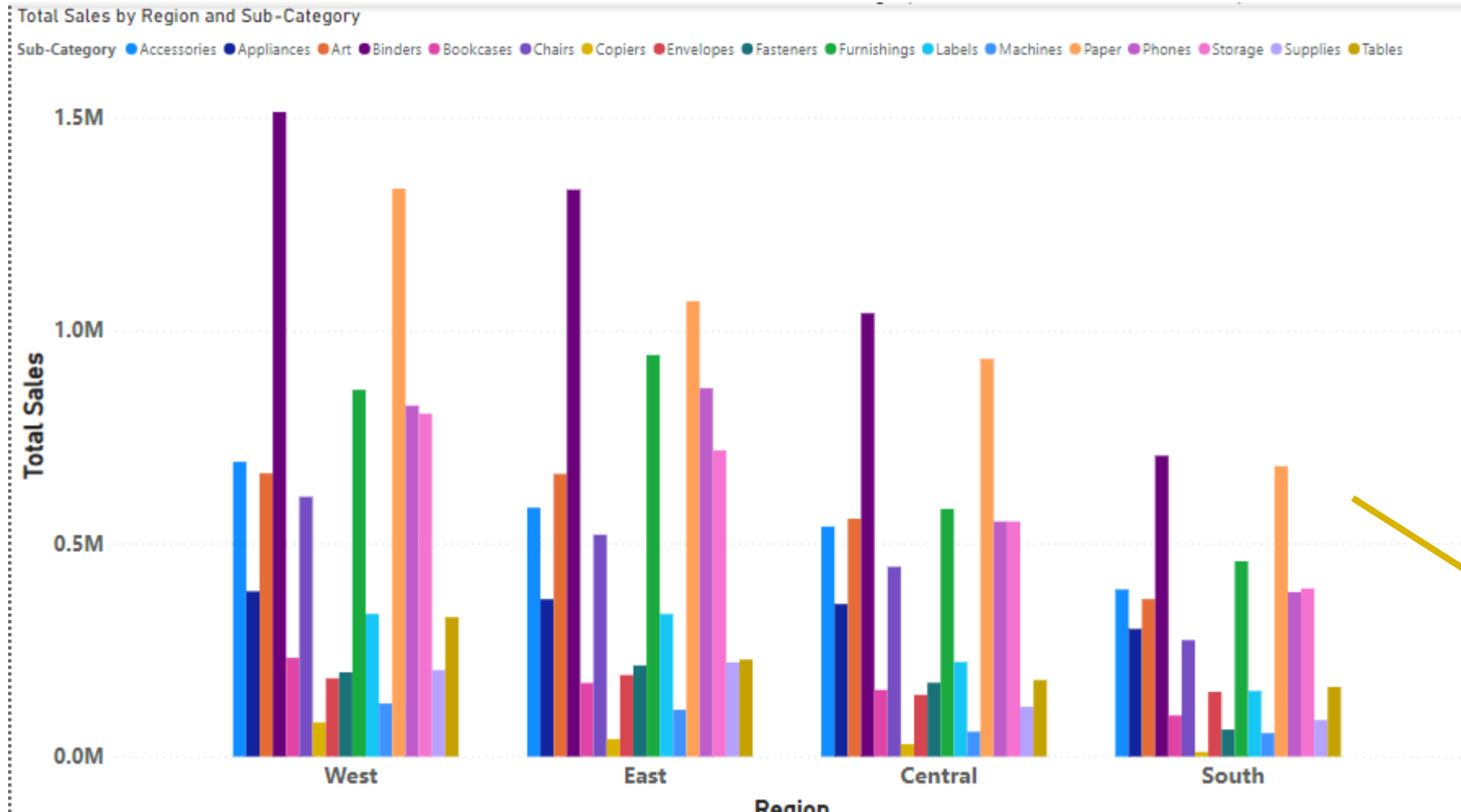
Total Sales

Legend

Add data fields here

Creating a Column Chart - Legend

Legend further divides your visual into different colors by adding a second level of breakdown.



Add fields in Legend as shown below.

X-axis

Region

Y-axis

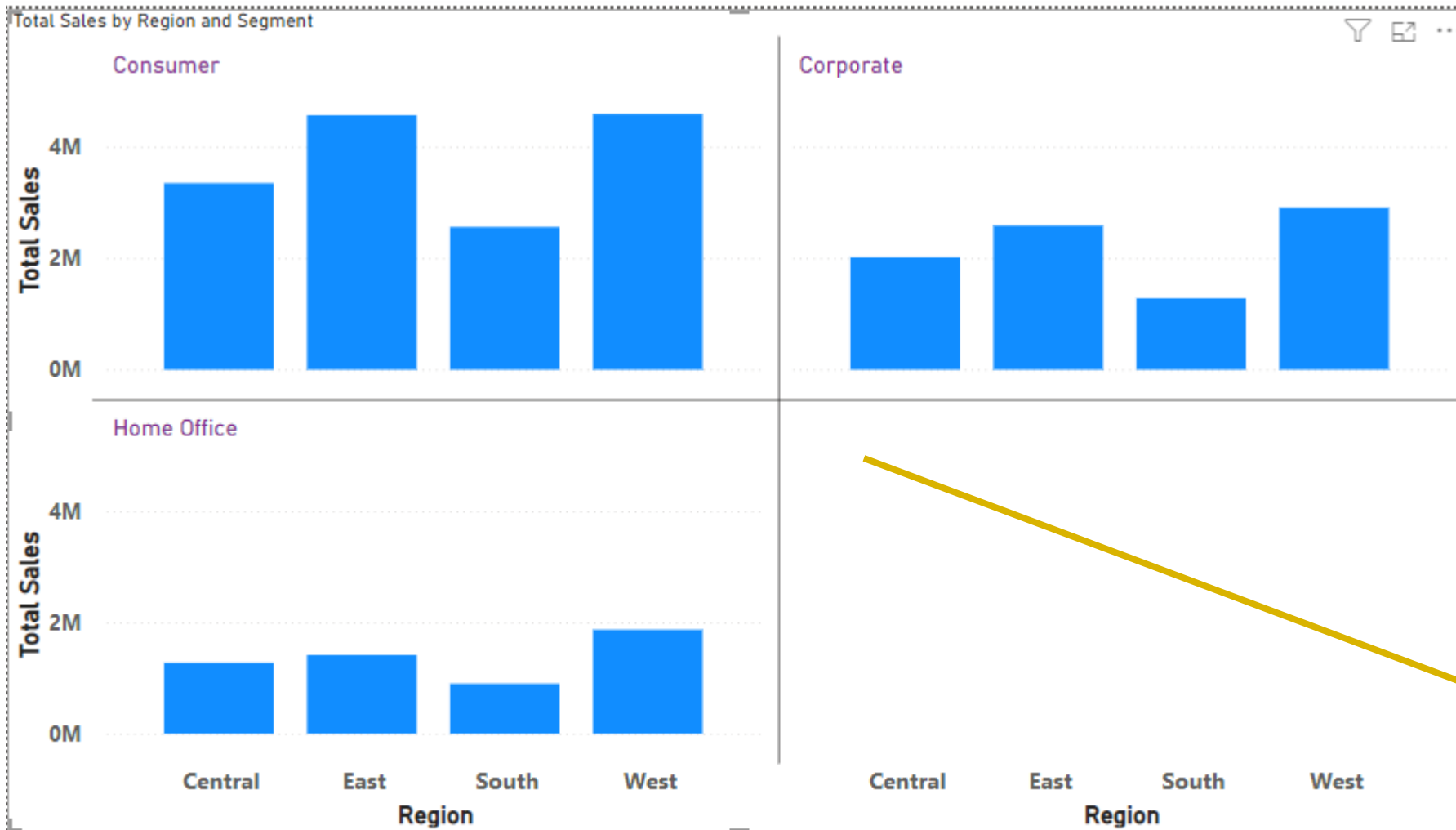
Total Sales

Legend

Sub-Category

Creating a Column Chart – SMALL MULTIPLES

Using Small Multiples, you can divide Regions into separate Charts acc to Segment



Add fields in Tooltips as shown below.

X-axis

Region

Y-axis

Total Sales

Legend

Add data fields here

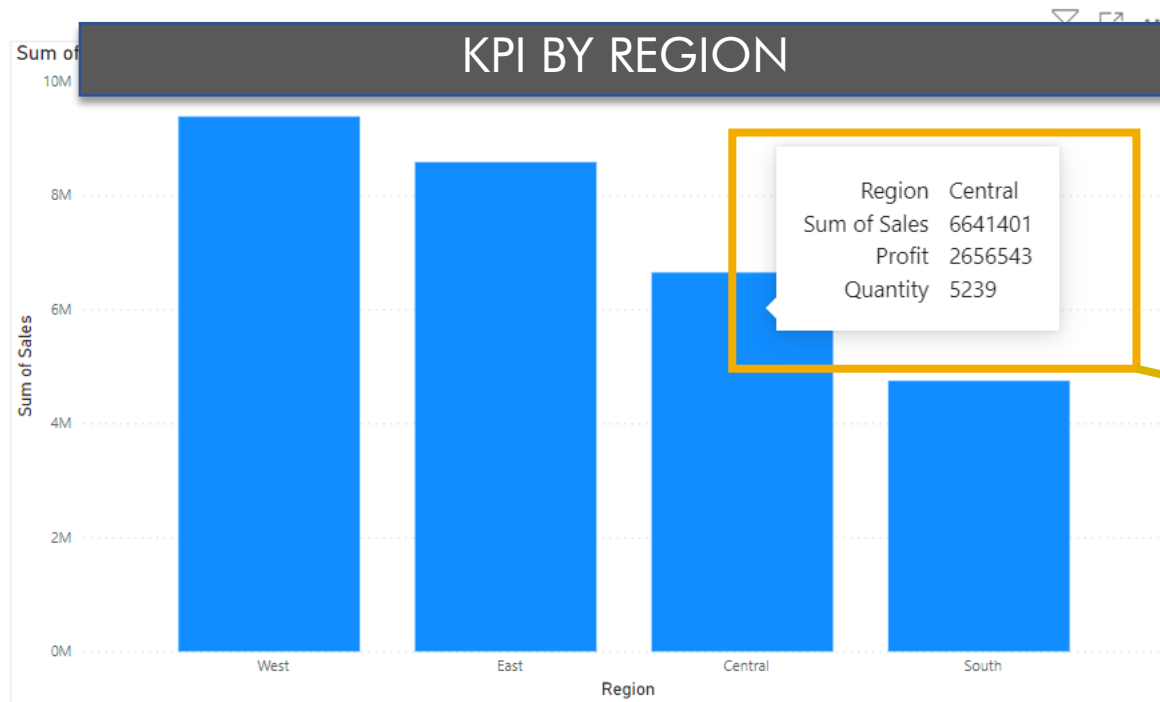
Small multiples

Segment

Creating a Column Chart - Tooltips

Any metric (numerical field) that you add in Tooltips will be visible to you when you hover over different elements of the visual.

For ex- After adding Profit to tooltips, whenever user hovers over ANY column of the column chart, they will see profit of that subcategory along with the Sales amount as well. Profit amount will only be visible as a value in the hover box and not as an additional column in the chart.



Add fields in Tooltips as shown below.

X-axis
Sub-Category

Y-axis
Sales

Legend
Add data fields here

Small multiples
Add data fields here

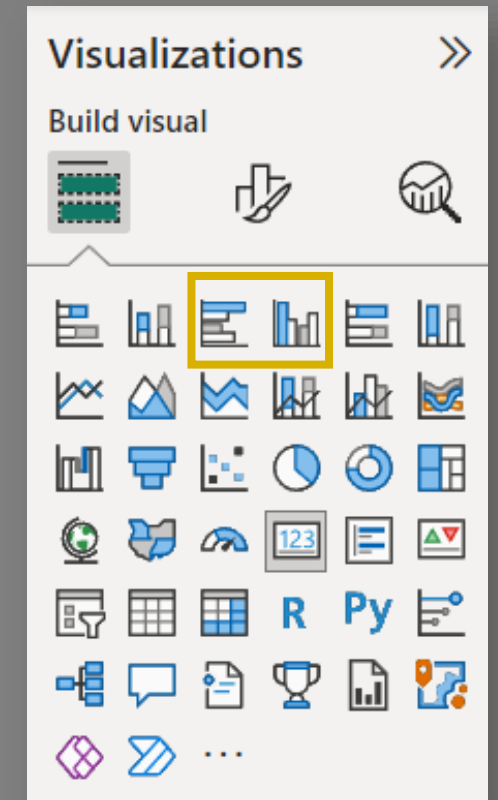
Tooltips
Profit
Quantity

Creating a Bar Chart from a Column Chart

To create a Bar Chart, all you have to do is create a Column Chart & then click on Bar Chart icon in Visualization Pane to convert it to a Bar Chart.



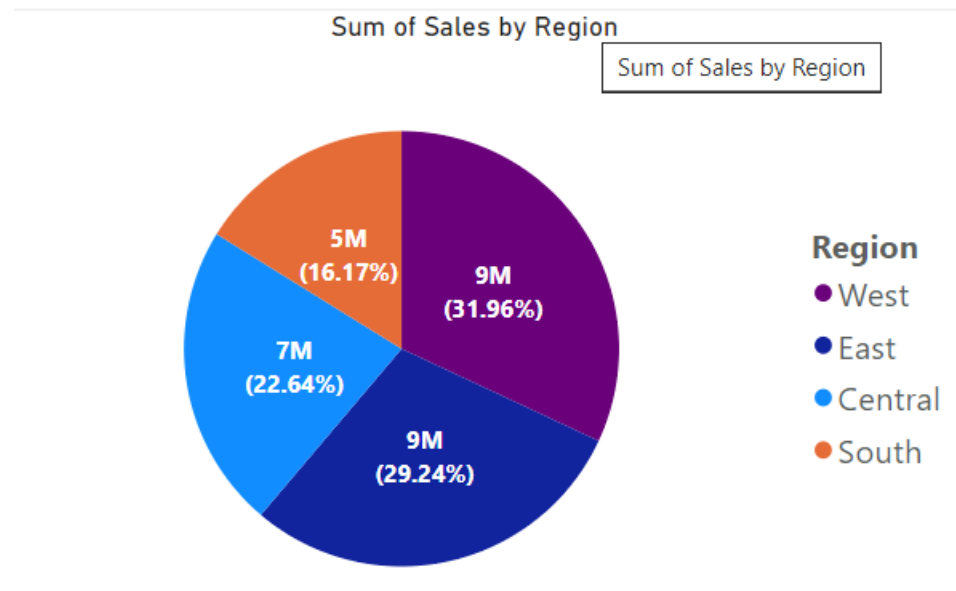
Switch from right icon to left icon.



Creating a Pie Chart

To create a Pie Chart, all you have to add your Region in Legend and Sales in Values

By doing the above you will get one line showing trend of the numerical field over your date range. If you want to break it into multiple lines based on another field, such as Shipping Mode, add it to the legend as shown below.



Once completed, this is how your inputs will look like.

Legend

Region

Values

Sum of Sales

Details

Add data fields here

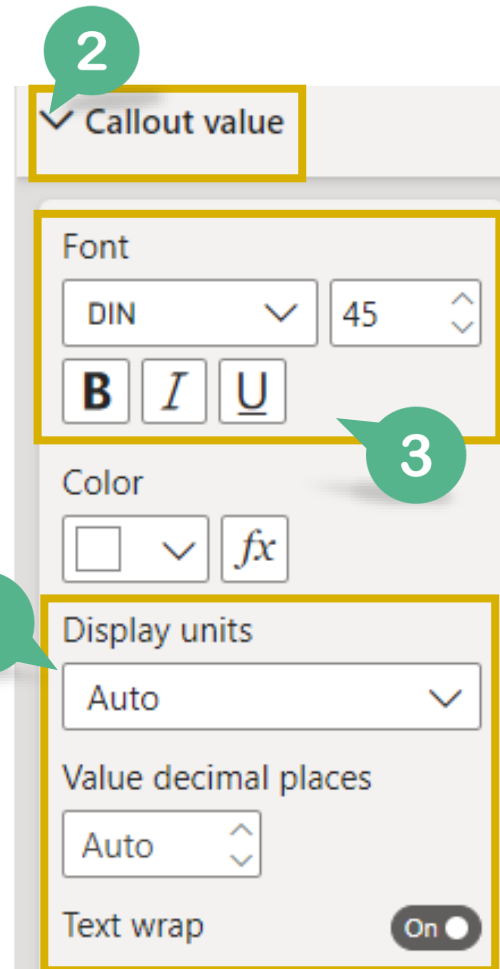
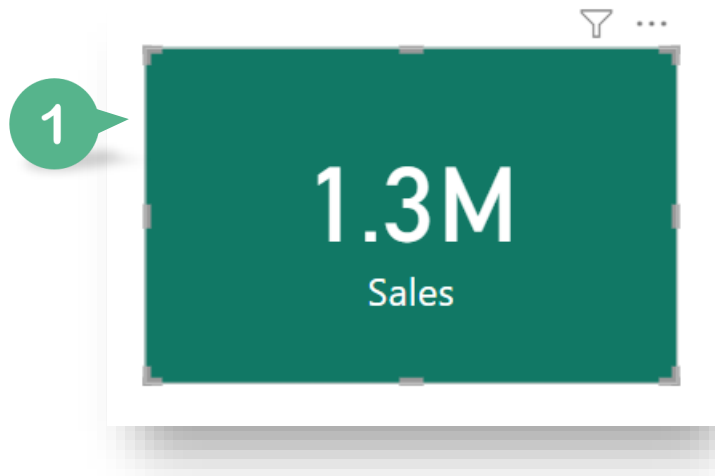
Tooltips

Add data fields here

FAQ: How to Font color & Size of the Cards

(or any other visual)

1. Select the visual by clicking on it.



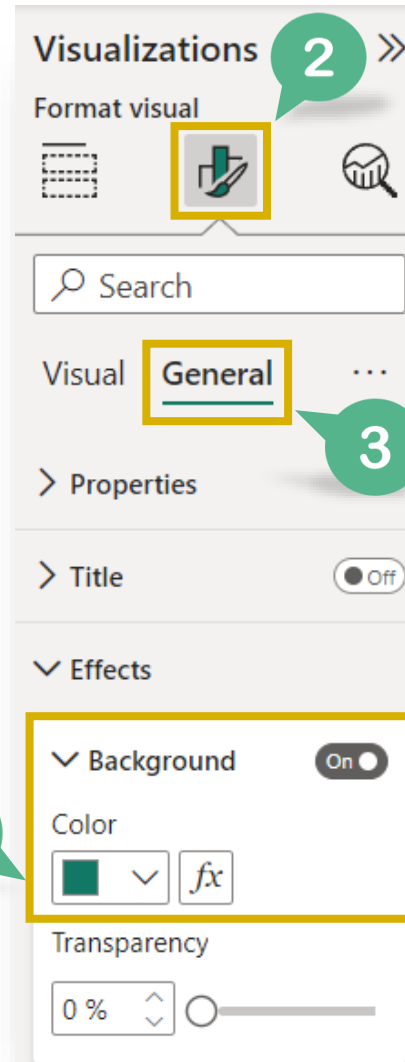
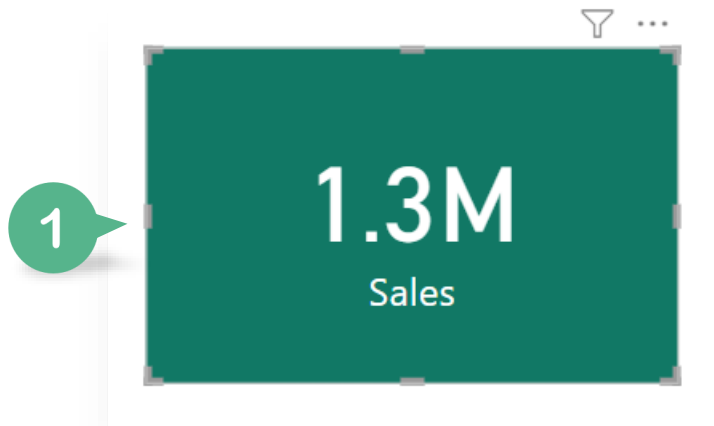
2. Click on the Format Visual icon under the Visualizations Pane and Click on Callout Value

3. Click on Font Tab and change the styles

4. Go To Display units and change the Unit

FAQ: How to change background of a Card (or any other visual)

1. Select the visual by clicking on it.



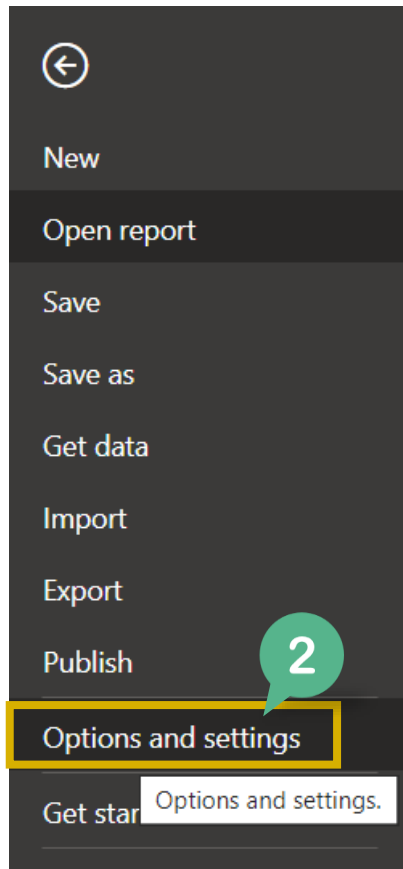
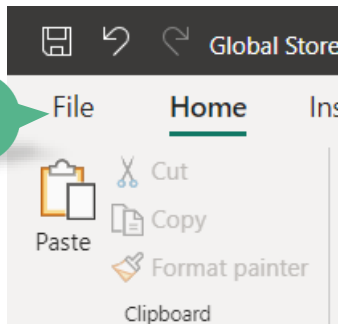
2. Click on the Format Visual icon under the Visualizations Pane.

3. Click on the General Tab

4. Go to "Background" under the Effects Section & Change the color by clicking on **color icon**.

Add MAP Visual

1. Click on File Menu.

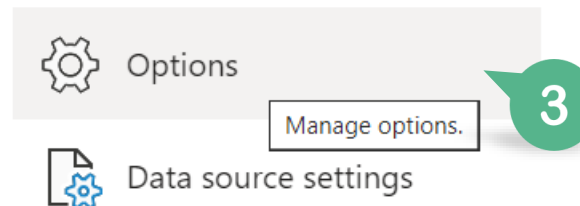


2. Click on Options and settings

3. Then Click on Options

4. Click on Security Options and Click on ...

Options and settings



Options

GLOBAL

- Data Load
- Power Query Editor
- DirectQuery
- R scripting
- Python scripting
- Security**
- Privacy
- Regional Settings
- Updates
- Usage Data
- Diagnostics
- Preview features
- Auto recovery
- Report settings

4

CURRENT FILE

- Data Load
- Regional Settings
- Privacy
- Auto recovery
- Published dataset settings
- Query reduction
- Report settings

Native Database Queries

- ☒ Require user approval for new native database queries

Certificate Revocation ⓘ

- ☐ Comprehensive check ⓘ
- ☒ Basic check ⓘ
- ☐ None ⓘ

[Learn more about certificate revocation](#)

Web Preview Warning Level ⓘ

Moderate ▾

Data Extensions

- ☒ (Recommended) Only allow Microsoft certified and other trusted third-party extensions to load
- ☐ (Not Recommended) Allow any extension to load without validation or warning

[Learn more about data extensions](#)

Custom visuals

- ☒ Show security warning when adding a custom visual to a report

ArcGIS for Power BI

- ☒ Use ArcGIS for Power BI

Map and Filled Map visuals

- ☒ Use Map and Filled Map visuals

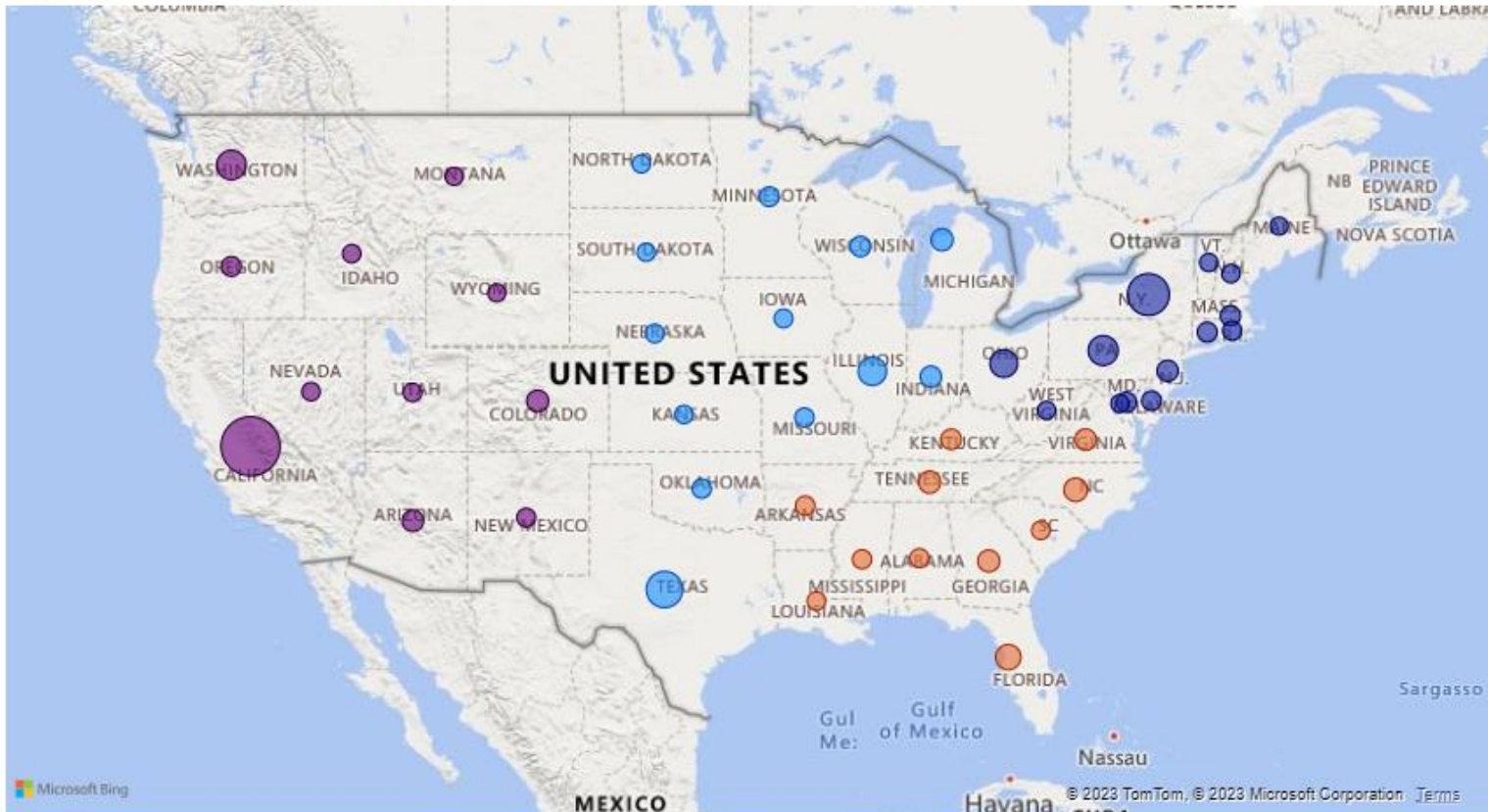
Check this option Use Map and Filed Map Visuals

Creating Map Chart

To create a Map Chart, all you have to do is add your **State/City/Country** Field in **Location** and **Sales** into **Bubble size** if you want show it **Region wise Colored** then add **Region** as a legend

Sum of Sales by State and Region

Region ● Central ● East ● South ● West



Location

State

Legend

Region

Latitude

Add data fields here

Longitude

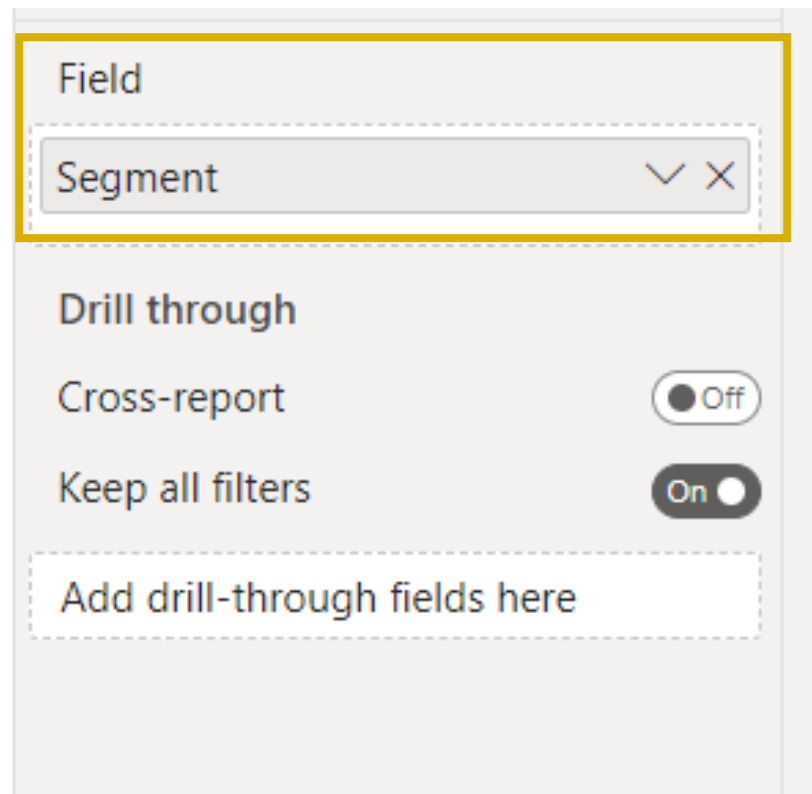
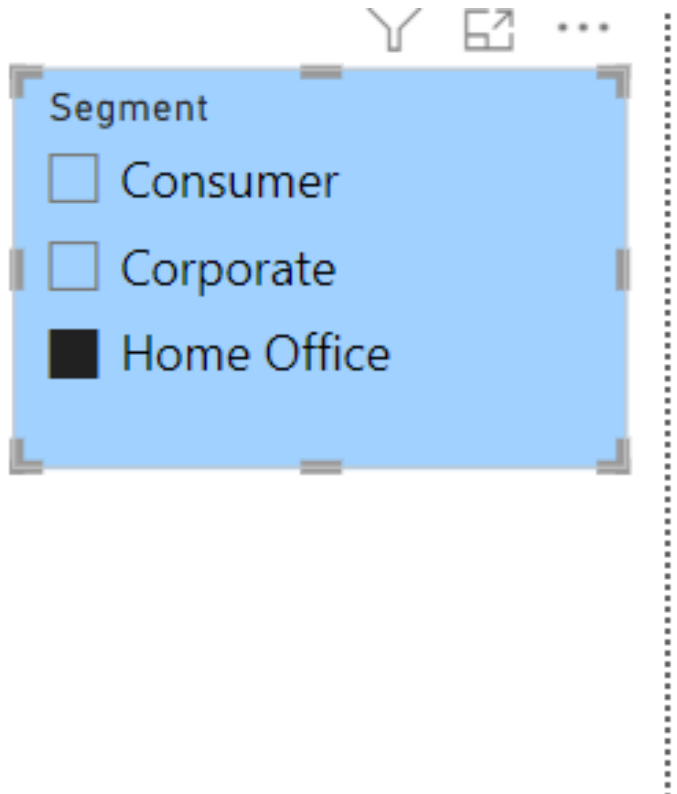
Add data fields here

Bubble size

Sum of Sales

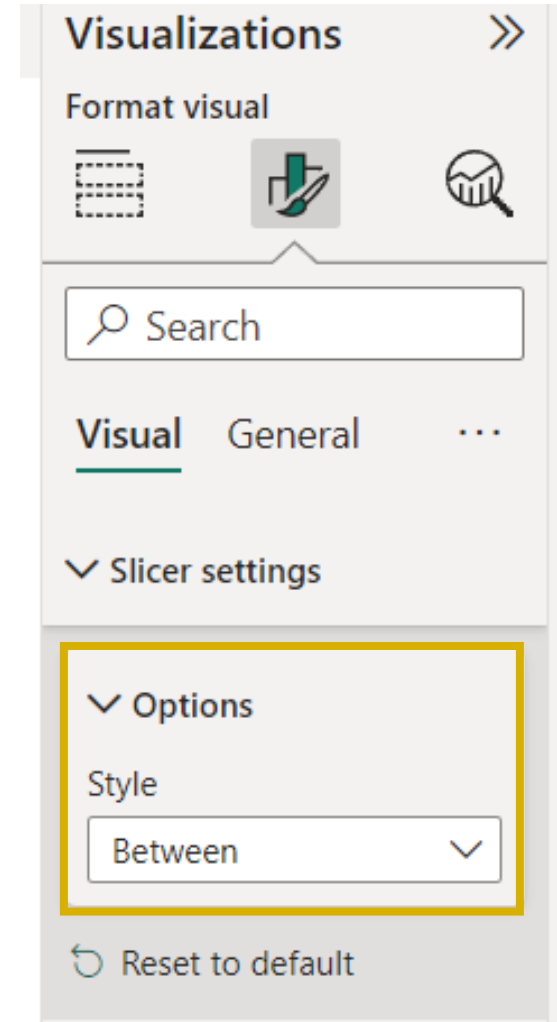
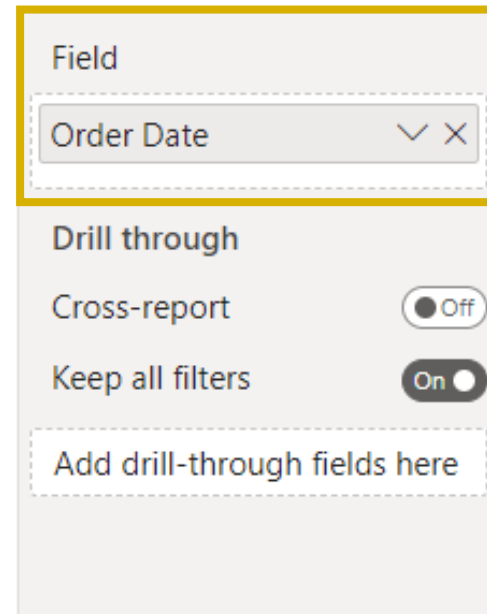
Creating Slicer

To create a Slicers, all you have to do is add Segment / Region / Country / City / State etc. inside field



Creating date Slider

To create a Date Slicers, all have to do is add Order Date inside field section. Then change the formatting from format visuals – Slicer Settings – Options - style – Between



FAQ: How to add Table Visuals

1. Add Table visual by clicking on it.

The screenshot shows the Power BI interface. On the left, a table visual displays data with columns: Sub-Category, Sales, Profit, and Transactions. The table includes rows for Binders, Paper, Furnishings, Phones, Storage, Art, Accessories, Chairs, Appliances, Labels, and a Total row. On the right, the 'Visualizations' pane is open, showing various chart and table icons. A green circle with the number '1' highlights the table icon in the 'Build visual' section. Below the icons, the 'Columns' section lists the fields added to the table: Sub-Category, Sales, Profit, and Transactions. A green circle with the number '2' highlights the 'Columns' section.

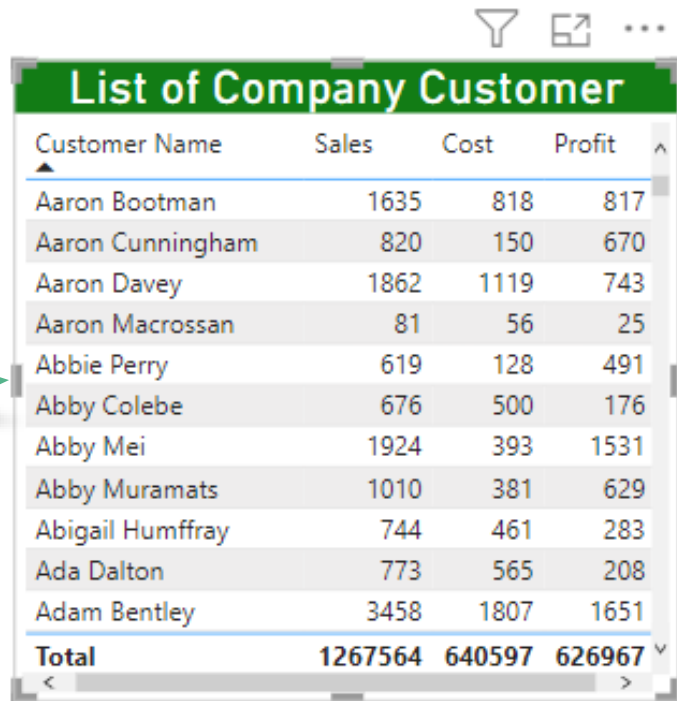
Sub-Category	Sales	Profit	Transactions
Binders	4590756	1836316	915
Paper	4017479	1606997	825
Furnishings	2843286	1137317	573
Phones	2626490	1050609	519
Storage	2469893	987954	498
Art	2256620	902642	465
Accessories	2208422	883359	461
Chairs	1849430	739761	355
Appliances	1415113	566050	279
Labels	1045515	418198	211
Total	29334755	11733906	5900

2. Add Fields like, Sub – Category, Sales, Profit, Transactions etc.

3

FAQ: How to add / change title of a visual

1. Select the visual by clicking on it.



Customer Name	Sales	Cost	Profit
Aaron Bootman	1635	818	817
Aaron Cunningham	820	150	670
Aaron Davey	1862	1119	743
Aaron Macrossan	81	56	25
Abbie Perry	619	128	491
Abby Colebe	676	500	176
Abby Mei	1924	393	1531
Abby Muramats	1010	381	629
Abigail Humffray	744	461	283
Ada Dalton	773	565	208
Adam Bentley	3458	1807	1651
Total	1267564	640597	626967

Visualizations

Format visual



Visual

General

> Properties

▼ Title

On

Text

List of Company Cus

fx

Heading

Heading 3

Font

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Text color



fx

Background color



fx

Horizontal alignment



2. Click on the Format Visual icon under the Visualizations Pane.

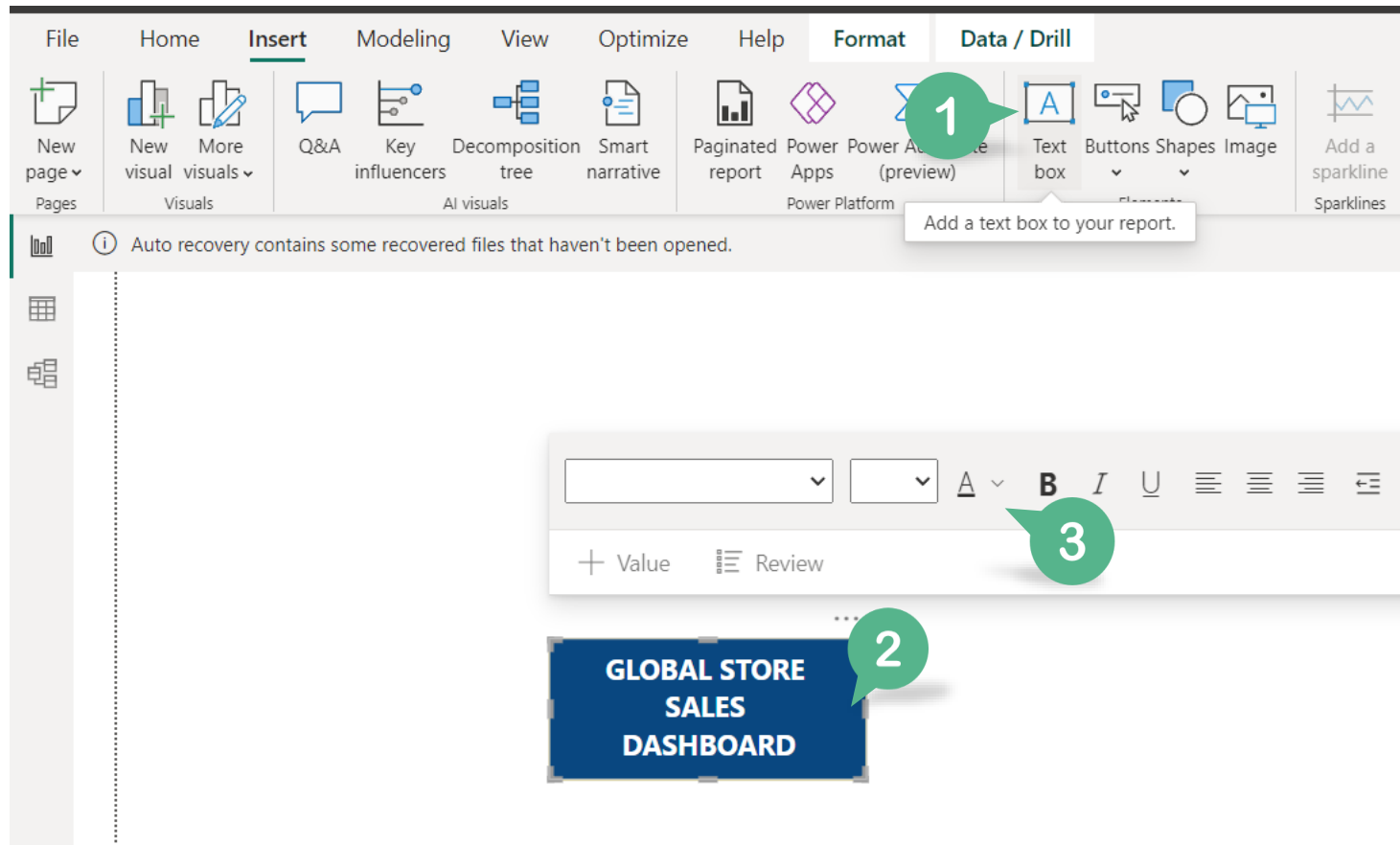
3. Click on the General Tab

4. Enable title & add your title under "Text"

Tip: You can further format title by adding background, changing font style, etc., by using the options below "text".

FAQ: How to add Text Box in Visual

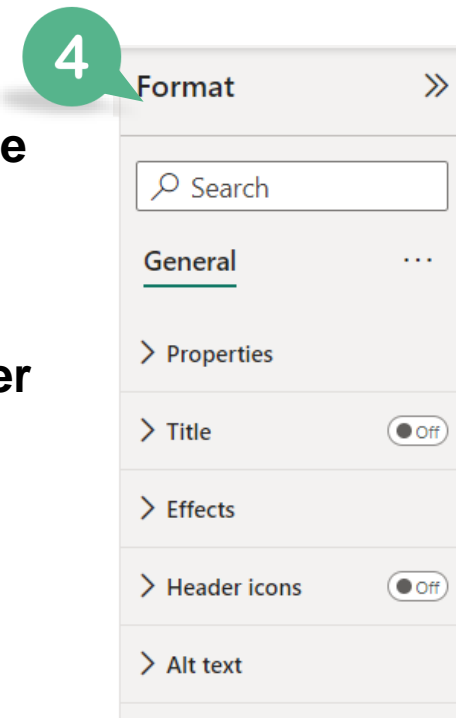
1. Click on Insert tab – Click on Text Box



2. Click inside text box type text

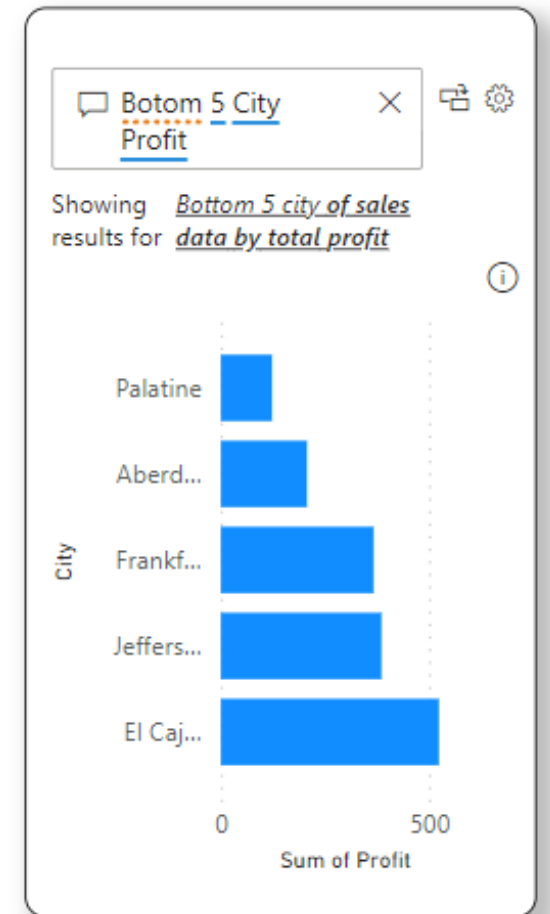
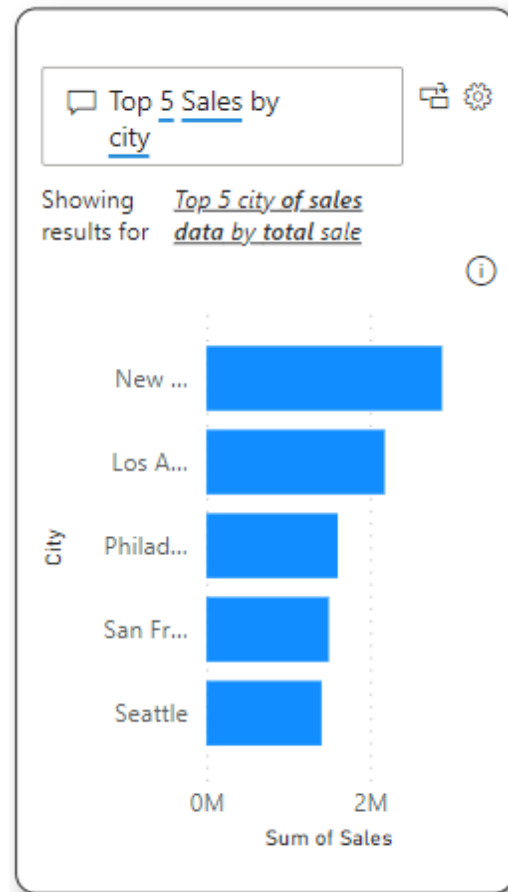
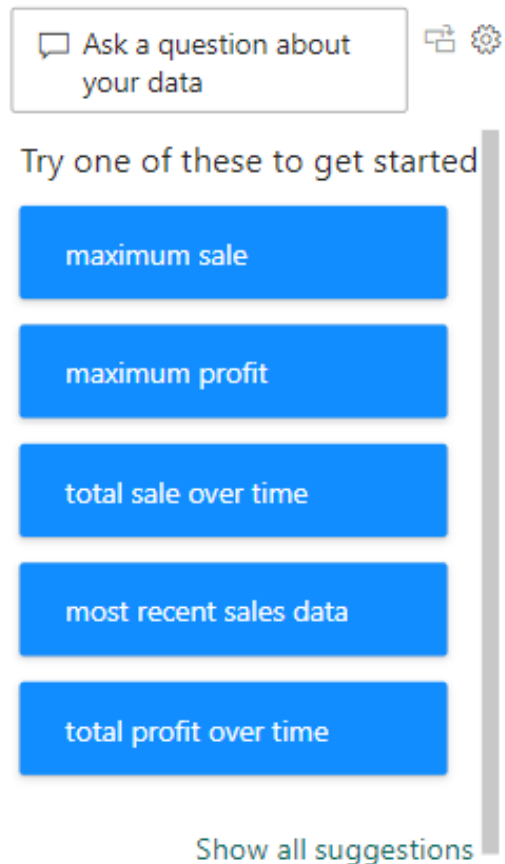
3. Click to apply text color and formatting

4. Format Pane allow you to change background color and other formatting for text box



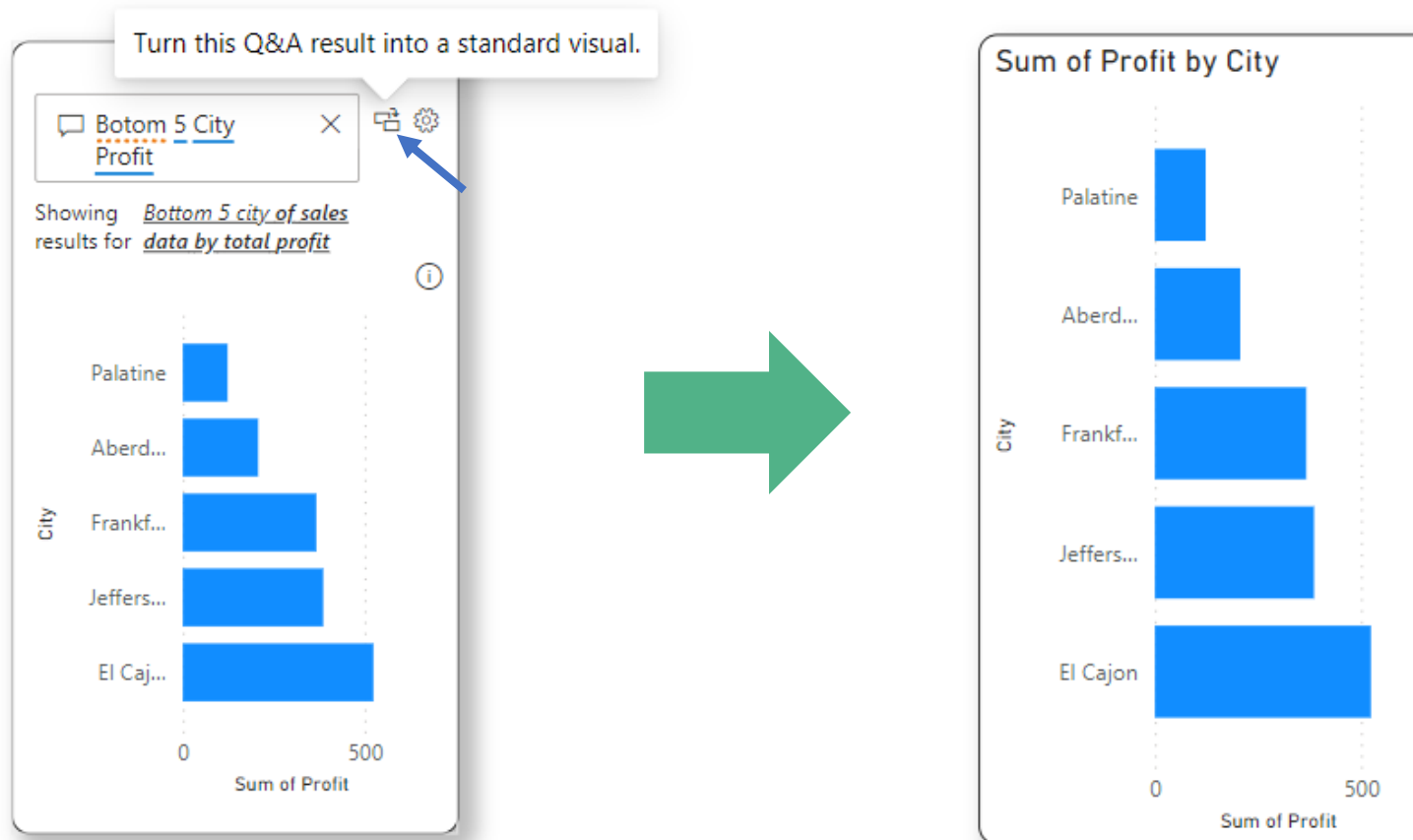
AI in Power BI

To use AI Features of Power BI – Just double click on canvas blank area – you will get Ask a questions about your data option, now type your question there like shown in image.2 & 3.



AI in Power BI

To Turn this Q&A result into a Standard Visual your need to click on this option



Refresh Dashboard to Get update Records

1. Click on Home Tab

2. Click on Refresh Dashboard

