



Chapter 6

Advanced POWER BI

POWER BI: Connecting two datasets

You can load and connect two data sources in POWER BI. Once you load, you should be able to see the names of the table under **FIELDS** panel. In **MODEL** view, you can choose to connect two data sources. In below snap, two data sources are being connected with respect to **CITY**

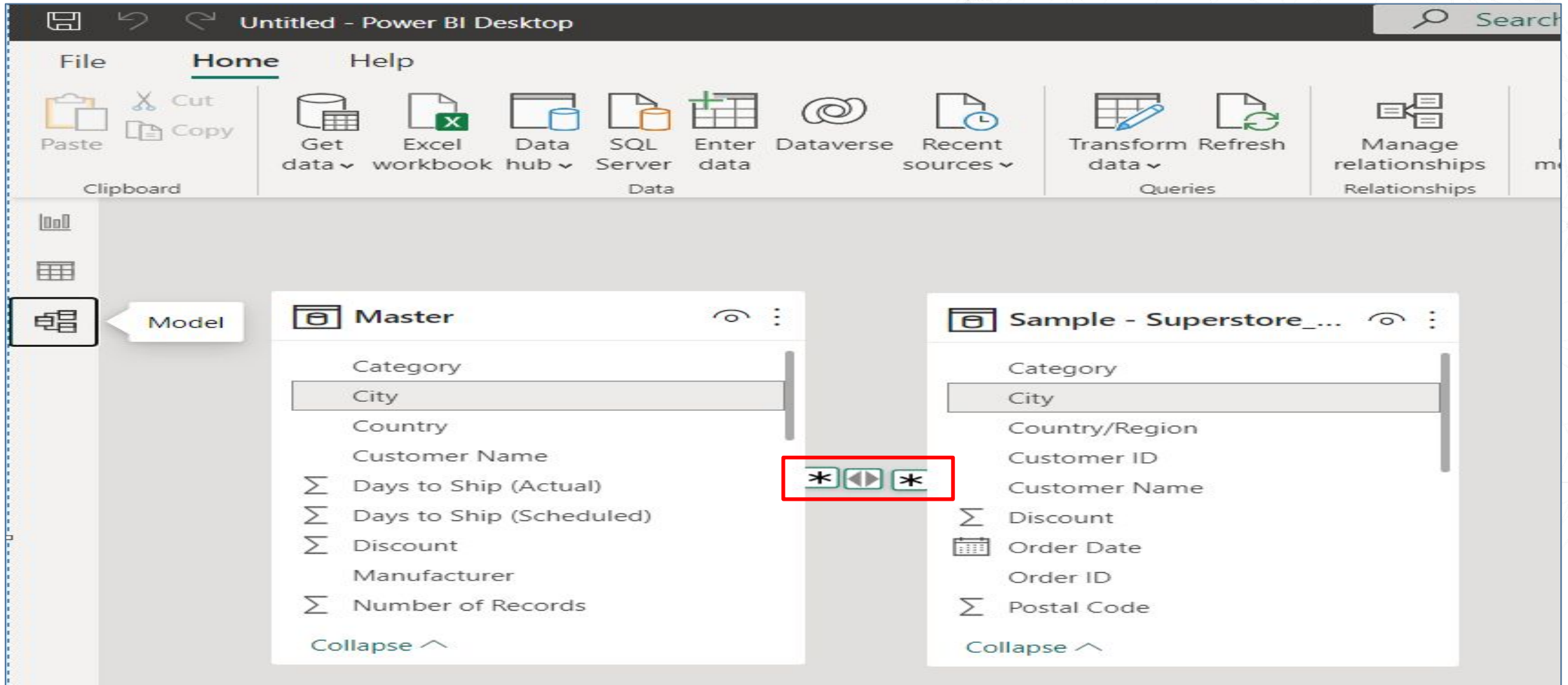
The screenshot shows the Power BI Desktop interface in the **MODEL** view. The **Fields** pane on the left lists two tables: **Master** and **Sample - Superstore_O...**. The **Master** table fields include Category, City, Country, Customer Name, Days to Ship (Actual), Days to Ship (Scheduled), Discount, Manufacturer, and Number of Records. The **Sample - Superstore_Orders** table fields include Category, City, Country/Region, Customer ID, Customer Name, Discount, Order Date, Order ID, and Postal Code. The **Create relationship** dialog box is open, showing the relationship between the **City** columns of the two tables. The cardinality is set to **Many to many (*:*)** and the cross filter direction is **Both**. A warning message at the bottom states: "This relationship has cardinality Many-Many. This should only be used if it is expected that neither column (City and City) contains unique values, and that the significantly different behavior of Many-many relationships is understood. Learn more".

Category	City	Country	Customer Name	Discount	Number of Records	Order Date
Office Supplies	Chaville	France	Sam Craven	0	1	Wednesday, May 31, 201
Office Supplies	Viroflay	France	Joe Elijah	0	1	Wednesday, November 7, 201
Office Supplies	Viroflay	France	Joe Elijah	0	1	Wednesday, November 7, 201

Order Date	Order ID	Category	City	Country/Region	Customer ID	Customer Name
Wednesday, July 17, 2019	CA-2019-101343	Office Supplies	Los Angeles	United States	RA-19885	Ruben Ausn
Monday, December 21, 2020	CA-2020-163405	Office Supplies	Los Angeles	United States	BN-11515	Bradley Ngu
Monday, December 21, 2020	CA-2020-163405	Office Supplies	Los Angeles	United States	BN-11515	Bradley Ngu

POWER BI: Connecting two datasets

Once tables are connected, they will show a connecting line using arrows and snowflake icon. Arrows show if the connection is two way. Snowflake icon shows, connection can use information of many columns against CITY through both databases.



POWER BI: Maps

You can find globe like icon in **VISUALIZATION** panel as highlighted in below picture. This icon is of **MAP** visual. Once you click, you will be asked to add fields to populate visual. You can click and drag relevant fields as shown in below big rectangular box.

The screenshot displays the Microsoft Power BI interface. The main canvas shows a map visualization titled "Sum of Sales by Country and Country". The map displays data points for various countries, with a legend at the top indicating the color coding for each country. The 'Visualizations' panel on the right shows the 'Map' icon highlighted. The 'Fields' panel on the right shows the 'Location' field set to 'Country', the 'Legend' field set to 'Country', and the 'Sum of Sales' field added to the 'Bubble size' property.

POWER BI: Maps

You can also change MAP style by going to **FORMAT** tab as shown below. You can change switch view to DARK, ARIEL, LIGHT, GOOGLE EARTH and STREET level.

The screenshot displays the Microsoft Power BI interface. The main area shows a map titled "Sum of Sales by Country and Country" with a legend for various European countries. The right-hand pane is open to the "Format" tab, specifically the "Visual" sub-tab. A red box highlights the "Format your visual" button at the top of the pane. Another red box highlights the "Map settings" section, which includes a "Style" dropdown menu currently set to "Light". The "Fields" pane on the far right shows a list of data fields, with "Country" and "Sales" selected.

Sum of Sales by Country and Country

Country: France, Germany, United Kingdom, Italy, Spain, Austria, Netherlands, Belgium, Sweden, Switzerland, Finland, Norway, Ireland, Portugal, Denmark

Visual: Format your visual

Map settings

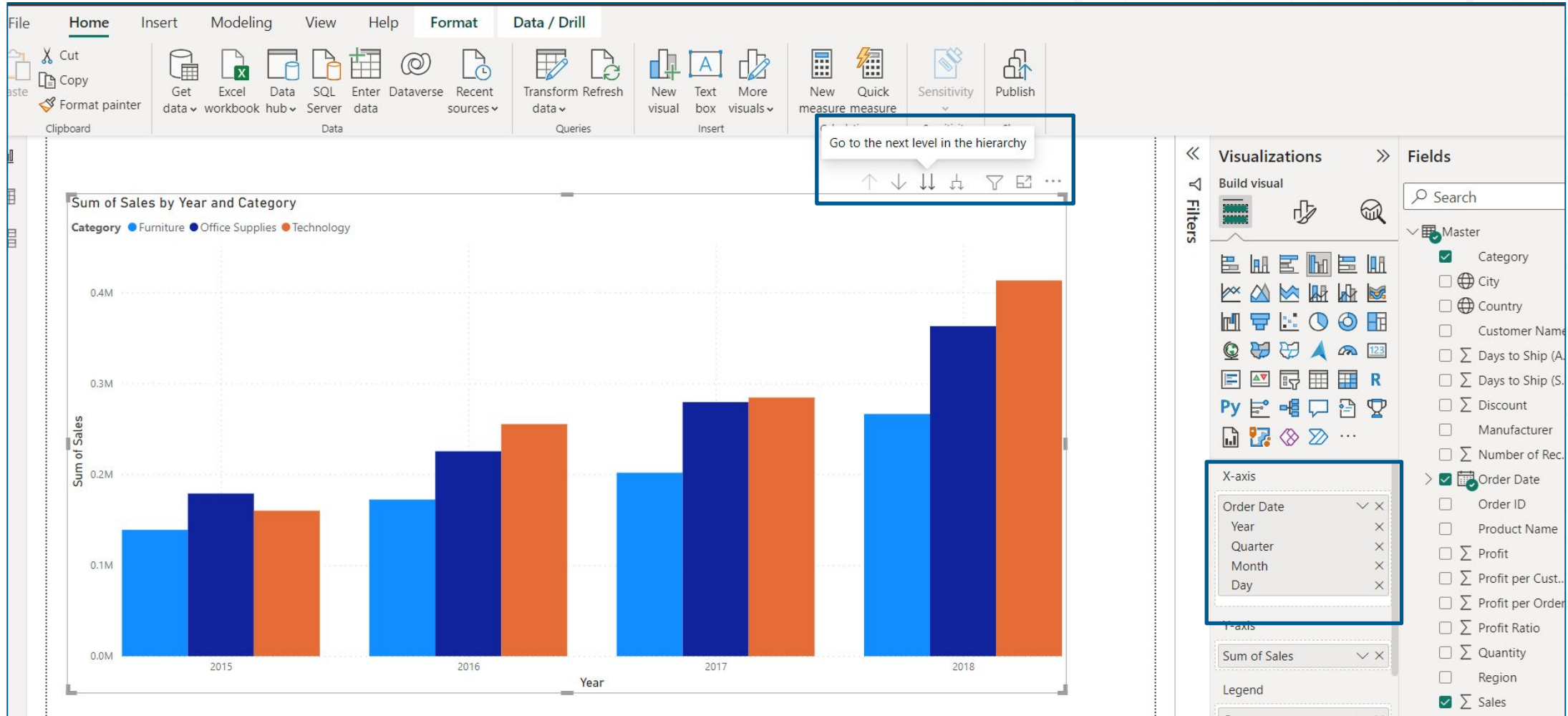
Style: Light

Fields

- Category
- City
- Country
- Customer Name
- Days to Ship (A...
- Days to Ship (S...
- Discount
- Manufacturer
- Number of Rec...
- Order Date
- Order ID
- Product Name
- Profit
- Profit per Cust...
- Profit per Order
- Profit Ratio
- Quantity
- Region
- Sales
- Sales Forecast
- Sales per Custo...
- Segment

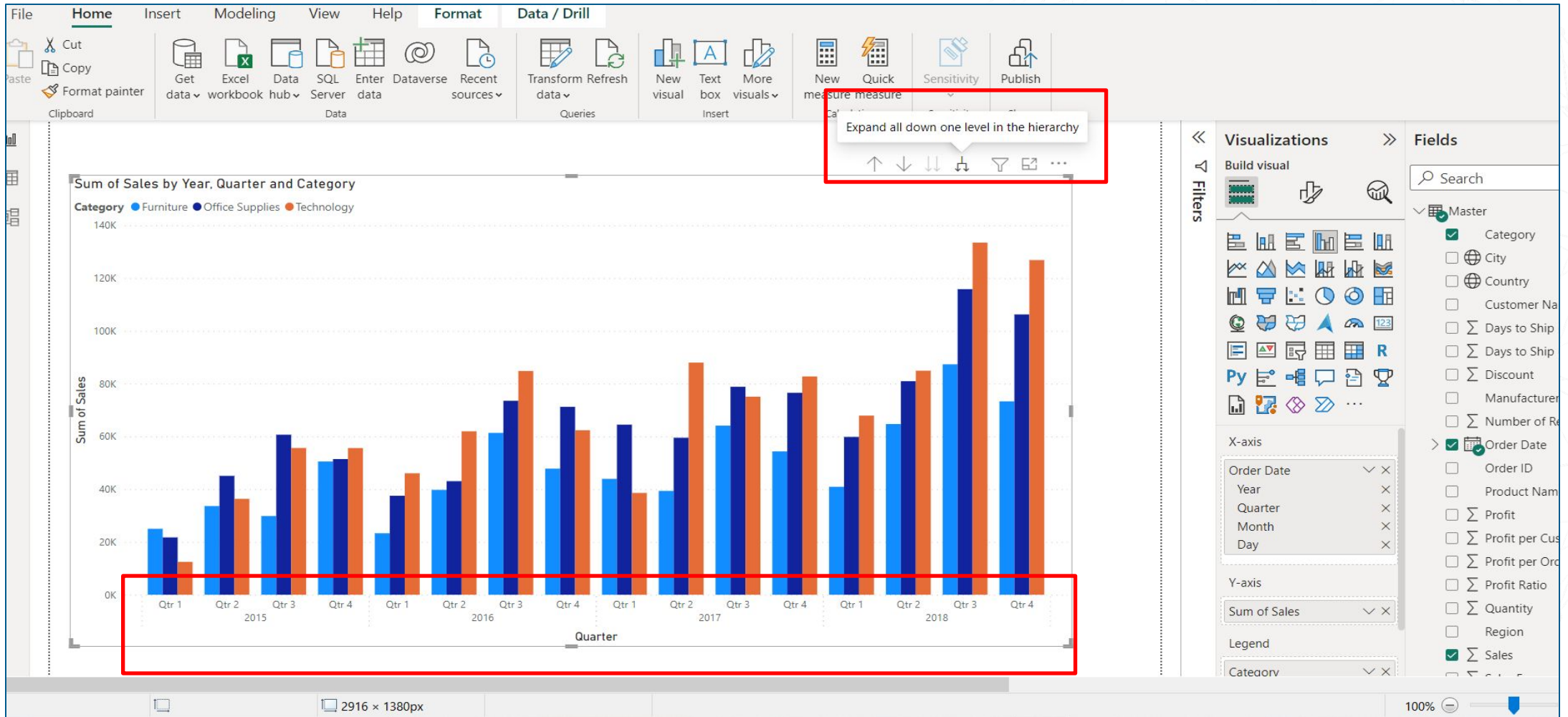
POWER BI: Time Series

POWER BI also offers you to drill down or drill up the visual as per the available data. In below snap, we can see that ORDER DATE data is available from year to quarter to month to day. This means we can drill down/up our visual to these levels. The below highlighted icon with the visual can be used to drill up or drill down.



POWER BI: Time Series

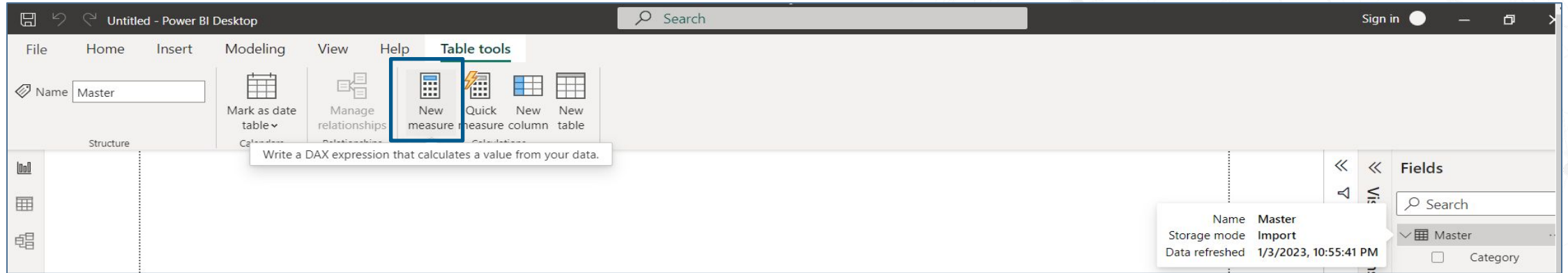
Below snap show drill down level of dates from year to quarters. It can further be drilled down to months and days.



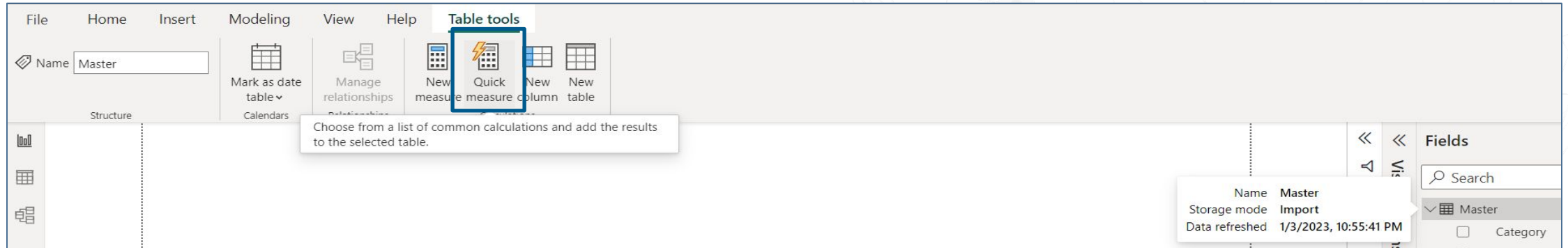
POWER BI: DAX

DAX stands for Data Analysis Expression. There are built in functions which helps to identify key data insights. In POWER BI, we call these formulas or functions as **MEASURES**. We can either create our own or use built in quick functions. DAX are usually represented with a icon of calculator in table under **FIELD** panel

To create Manual DAX



To use built in functions



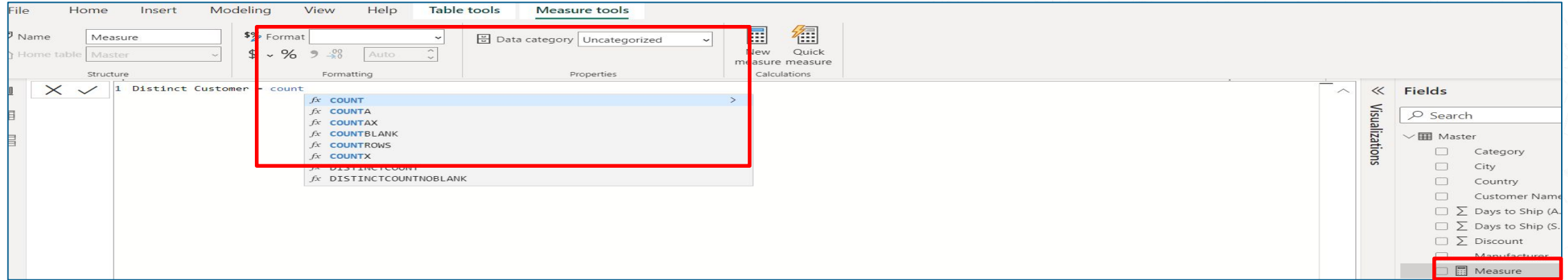
POWER BI: DAX

There are variety of functions available through which any formula can be created. POWER BI guides syntax during DAX preparation. Along with syntaxx, it also show available table/field information to be used. You can learn more about DAX expressions on below links.

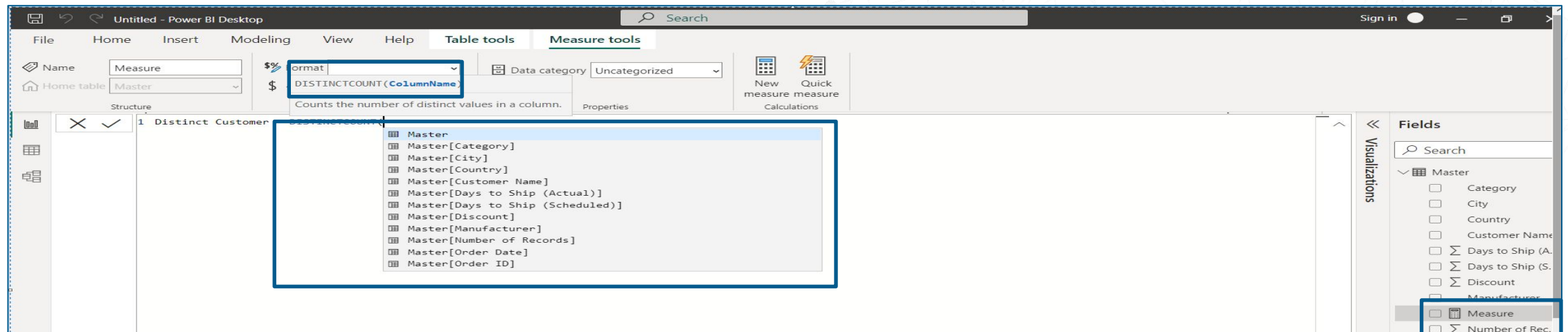
<https://dax.guide/>

<https://learn.microsoft.com/en-us/training/modules/create-measures-dax-power-bi/>

POWER BI DAX has variety of functions

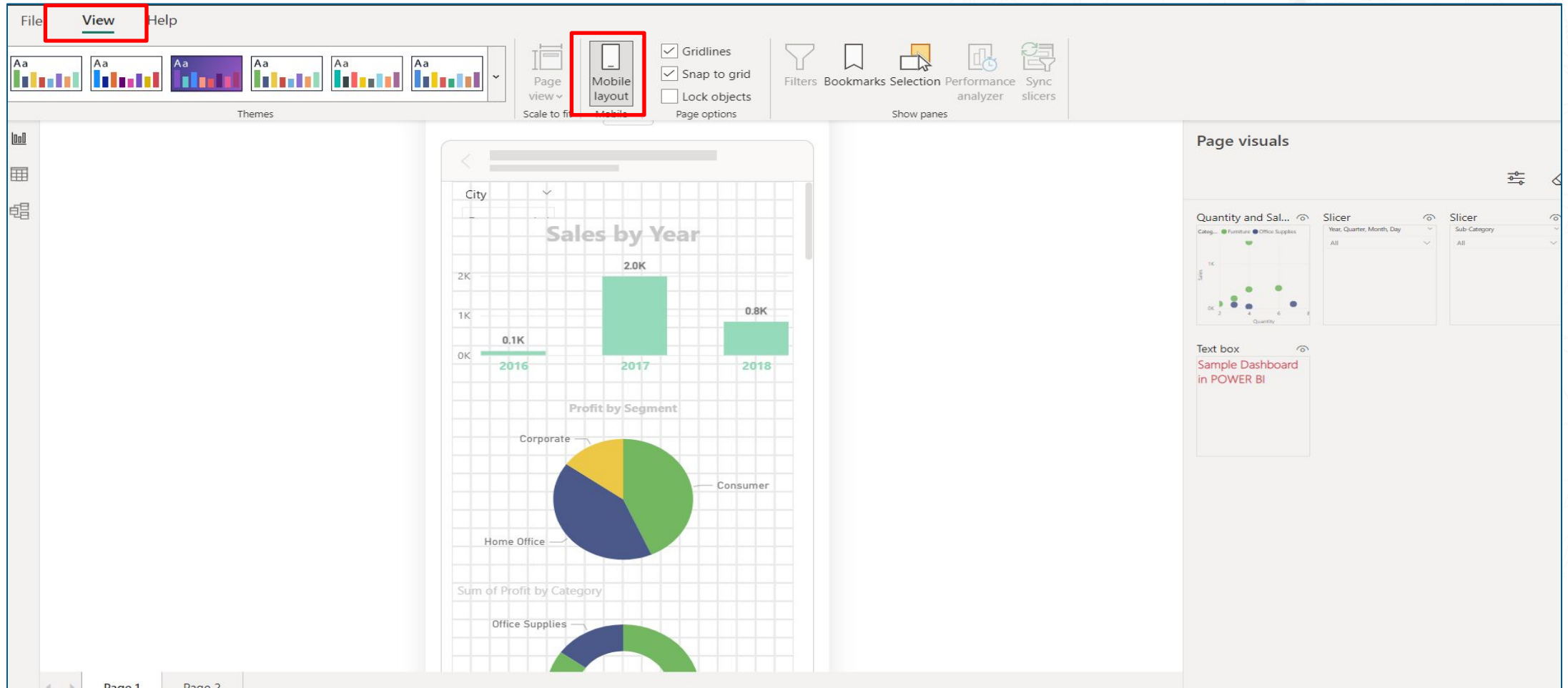


POWER BI also guides for DAX Syntax and Field suggestions



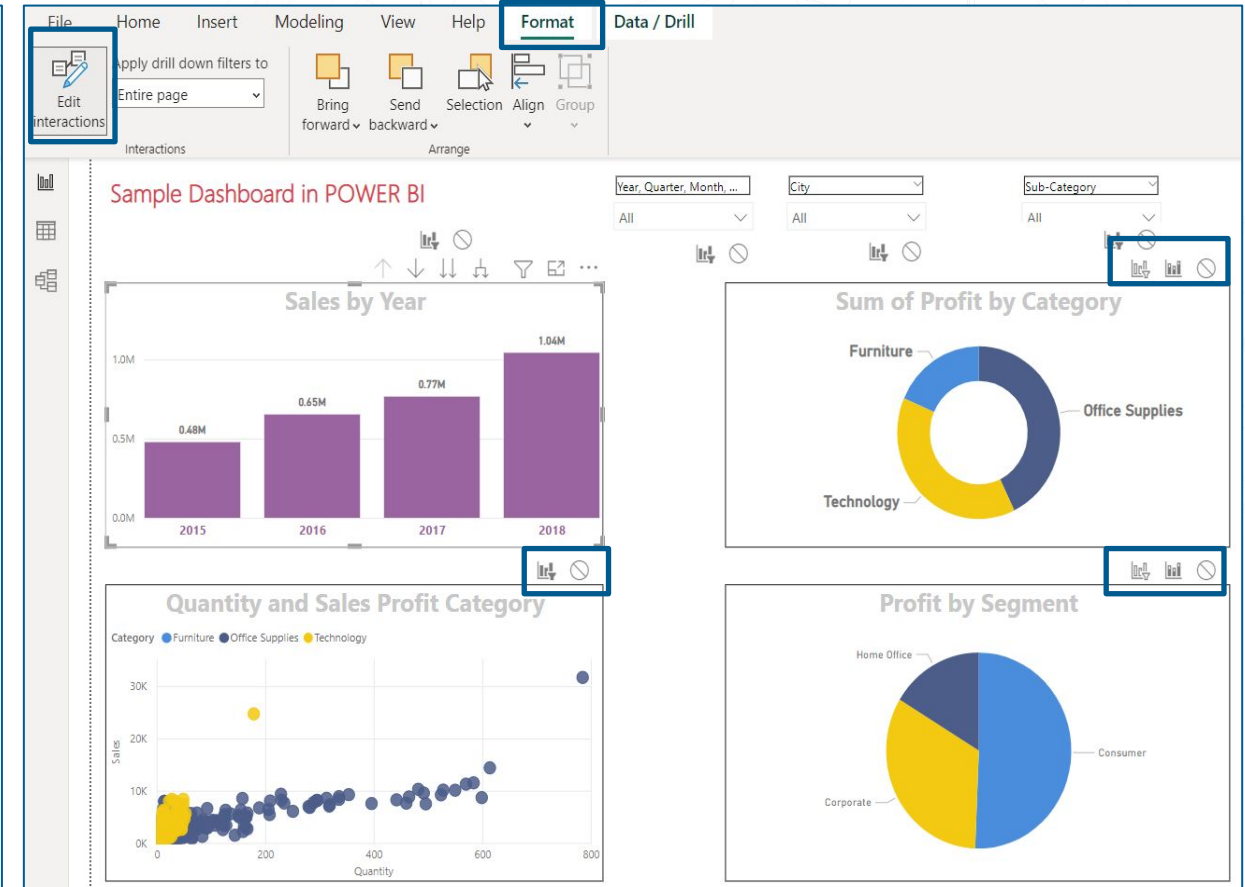
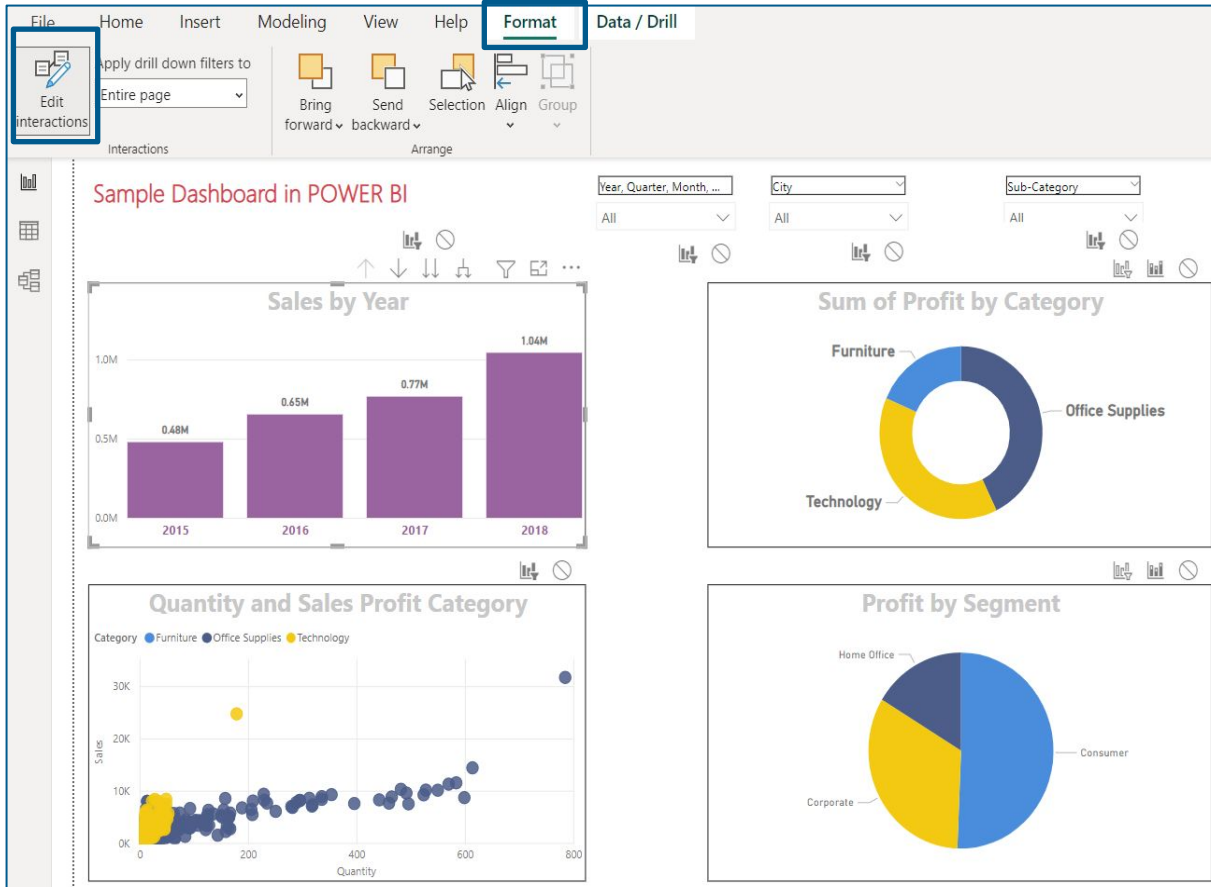
POWER BI: Mobile View

In **VIEW** toolbar, we have option of **MOBILE LAYOUT**. This options helps to create dashboard view on mobile. POWER BI allows you to adjust your visuals which can be easily viewed on mobile.



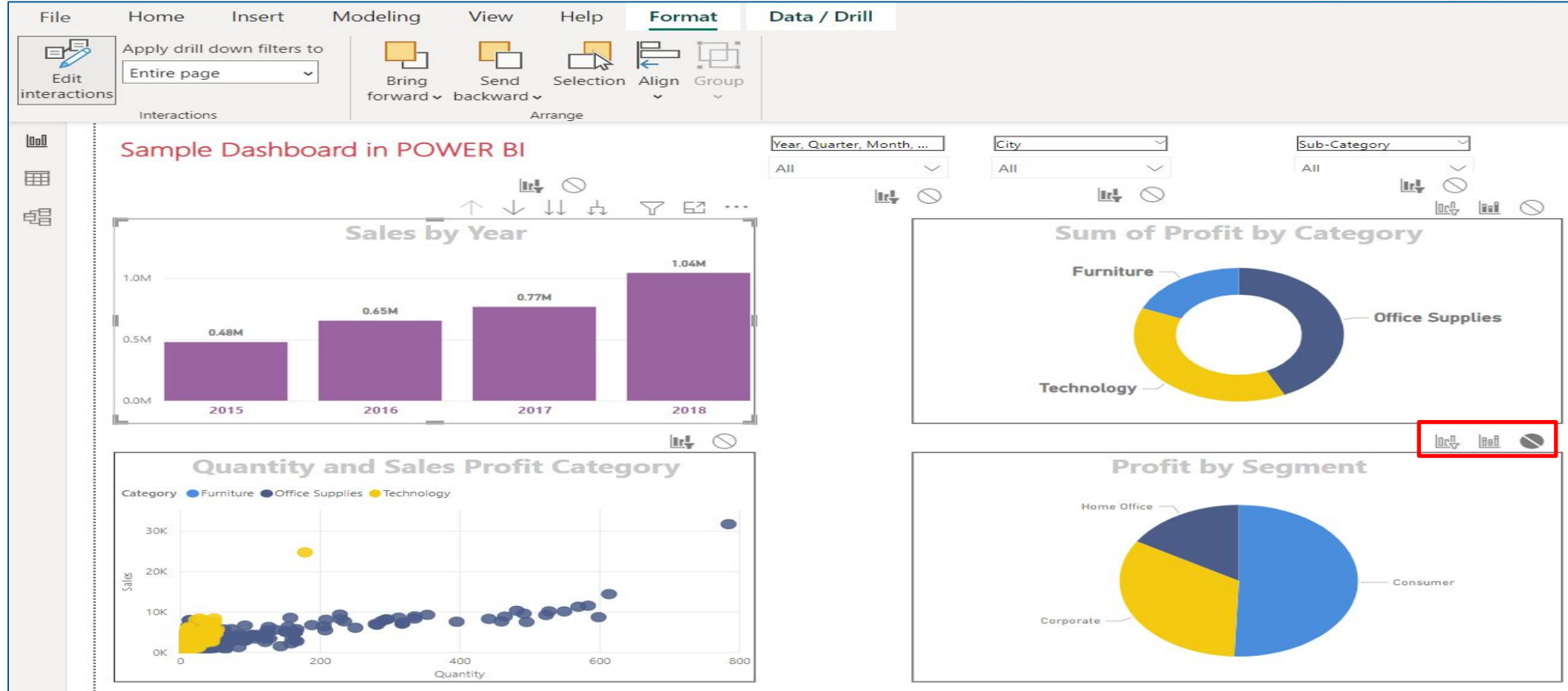
POWER BI: Interactive Visuals

By default, visuals of POWER BI are already interactive. To find which visuals are interactive, 1). click on particular visual: 2). Go to **FORMAT->EDIT INTERACTION**. Now you will see small icons with each visuals. You can find this in below snapshot. If these icons are enabled, this means that all visuals are interactive.



POWER BI: Interactive Visuals

Once you are able to see interaction icons with each visual, now you can choose visual which you do not want to be interactive. To do this, click on small circle icon. It will be colored black after your selection. This means, for all interactive activities, this visual will **NOT** be interactive..



POWER BI: Designing Dashboards

You can design your dashboard in two steps. First to make cosmetic changes to each visual. Secondly, got to **FORMAT PAGE** and see appropriate background settings. You can also use built in **THEMES** of POWER BI. To use that, go to **VIEW** menu and you will find bunch of different color themes. Choose appropriate one.

The screenshot displays the Microsoft Power BI desktop application interface. The top ribbon includes the 'View' tab, which is highlighted with a red box. Below the ribbon, a sample dashboard titled 'Sample Dashboard in POWER BI' is shown. It contains four visualizations: a bar chart 'Sales by Year' (2015-2018), a donut chart 'Sum of Profit by Category' (Furniture, Office Supplies, Technology), a scatter plot 'Quantity and Sales Profit Category', and a pie chart 'Profit by Segment' (Home Office, Corporate, Consumer). The right-hand pane, also highlighted with a red box, is the 'Visualizations' pane. It shows the 'Format page' tab selected, with options for 'Page information', 'Canvas settings', 'Canvas background', and 'Wallpaper'. The 'Wallpaper' section is expanded, showing settings for Color, Image, Image fit, and Transparency.

Sample Dashboard in POWER BI

Sales by Year

Year	Sales
2015	0.48M
2016	0.65M
2017	0.77M
2018	1.04M

Sum of Profit by Category

Category	Profit
Furniture	High
Office Supplies	Medium
Technology	Low

Quantity and Sales Profit Category

Category	Quantity	Sales
Furniture	0-200	0-10K
Office Supplies	0-200	0-10K
Technology	0-200	0-10K
Office Supplies	200-400	10-20K
Office Supplies	400-600	10-20K
Office Supplies	600-800	10-20K

Profit by Segment

Segment	Profit
Home Office	Low
Corporate	Medium
Consumer	High

POWER BI: Final Tips

Know your Purpose and Audience

Most viewed spot is left top corner. Keep important visual there.

Avoid too many visuals/clutter in one dashboard.

Use appropriate color theme and font sizes

Make visuals interactive

Make efficient use of SLICERS

Keep dashboard spacious

Use contrast of colors to make visual attractive

Do check data validity after creating DAX



`</talentlabs >`

Thank you