

A black and white photograph showing two people in business attire. One person is pointing at a laptop screen displaying various charts and graphs. The other person is looking down at some papers on the desk. The background is a dark blue hexagonal grid.

Business Intelligence /Business Analyst /Data Analyst

By Kasfur Dhuniyan

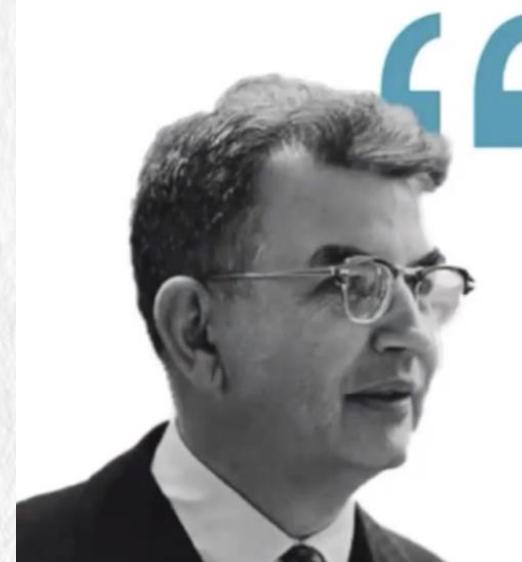


Module 01

Introduction and Installation of Power BI

MATHEMATICIAN CLIVE HUMBY

Data is the **New Oil**. Like Oil, **data is Valuable**, but if **Unrefined** it cannot really be used. It has to be changed into **Gas, Plastic, Chemicals, etc.** to create a **Valuable Entity** that **Drives Profitable Activity**.



If you torture the data long enough, it will confess to anything.

RONALD COASE

Introduction of Business Analyst

BUSINESS INTELLIGENCE (BI)/BUSINESS ANALYST

- ❑ it is a technology-driven process for analyzing data and delivering actionable information that helps executives, managers and workers make informed business decisions. As part of the BI process, organizations collect data from internal IT systems and external sources, prepare it for analysis, run queries against the data and create data visualizations, BI dashboards and reports to make the analytics results available to business users for operational decision-making and Strategic Planning
- ❑ The ultimate goal of BI initiatives is to drive better business decisions that enable organizations to increase revenue, improve operational efficiency and gain competitive advantages over business rivals. To achieve that goal, BI incorporates a combination of analytics, data management and reporting tools, plus various methodologies for managing and analyzing data.



Technical and Functional Requirements

Data analytics involves analyzing datasets to uncover trends and insights that are subsequently used to make informed organizational decision

- ❑ Working with business leaders and stakeholders to define a problem or business need
- ❑ Identifying and sourcing data
- ❑ Cleaning and preparing data for analysis
- ❑ Analyzing data for patterns and trends
- ❑ Visualizing data to make it easier to understand
- ❑ Presenting data in such a way that it tells a compelling story



SQL and NoSQL



R, Python, and MATLAB



Data Visualization



Microsoft Excel



Critical Thinking



Math and Statistics



Communication

What is Power BI and Its Importance and Peers Trend

BI Combines Business Analytics, Data Mining, Data Visualization, Data Tools & Infrastructure to help Organizations make more Data-driven Decisions.

BI is more than just Software -

it's a way to keep a Holistic and Real-time view of all your Relevant Business Data

BI Tools



**Microsoft
Power BI**



Tableau



Qlik sense

POWER BI DESKTOP



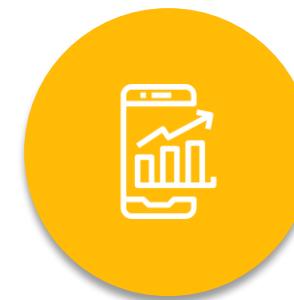
It is a Windows desktop application (Report Authoring Tool) which Lets you build queries, models and reports that visualize data.

POWER BI SERVICE



Power BI Service is cloud based Software as Service Application which allows us to create dashboards, Setup schedule data refreshes, Share the reports securely in the organization.

POWER BI MOBILE



It is an application (App) on mobile devices which allows you to interact with the reports and dashboard from Power BI Service.

The Flow of Work in Power BI

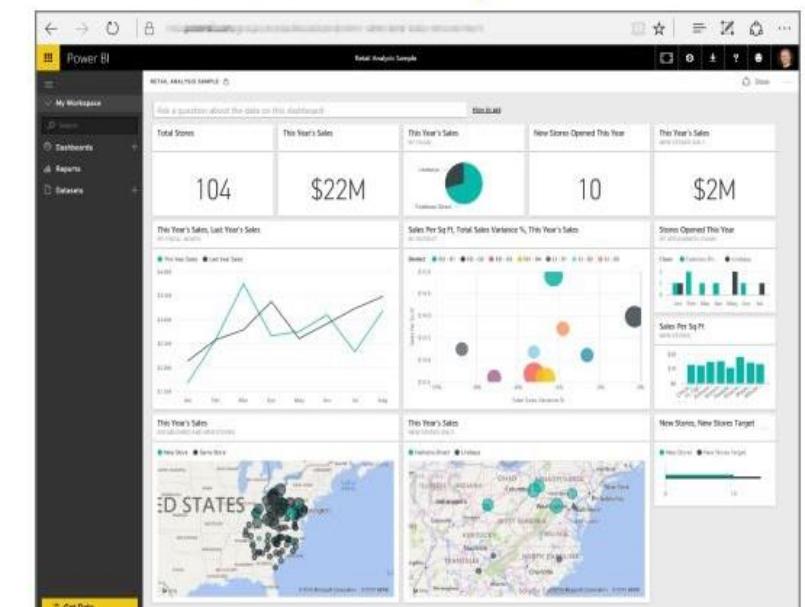
- A common flow of work in Power BI begins in **Power BI Desktop**, where a report is created. That report is then published to the **Power BI Service**, and then shared so users of **Power BI Mobile** apps can consume the information.
- It doesn't always happen that way, and that's okay, but we'll use that flow to help you learn the various parts of Power BI, and how they complement one another.

POWER BI DESKTOP:

Power BI Desktop is Report Authoring Tool that allows you to create Reports, Queries, Extract Transform and Load the Data from Data Sources and Model the Queries.



Power BI service



Power BI Mobile



Advantages of Power BI



Excel can handle Limited Amount Data as Compared to Power BI.



Power BI can connect to a Large Number of Data Sources, while Excel's Connectivity Capacity is limited. Also, unlike Excel, Power BI can be easily used from Mobile Devices.



Power BI Dashboards are more Visually Appealing, Interactive and Customizable than those in Excel.



In Excel you cannot Perform Data Modelling, Data Refresh.

Advantages of Power BI

DATA VISUALIZATION

Power BI allows users to create dynamic and visually appealing dashboards and reports to help users better understand their data

COLLABORATION

Power BI allows users to share their reports and dashboards with others in their organization, making it easy to collaborate and work together on data-driven projects

CUSTOMIZATION

Power BI offers a wide range of customization options, allowing users to tailor their reports and dashboards to meet their specific needs and preferences.

DATA INTEGRATION

Power BI integrates with a wide variety of data sources, making it easy to connect and analyze data from different sources. Real-time data analysis: With Power BI, users can analyze and visualize data in real-time, allowing them to quickly identify trends and make informed decisions

MOBILE ACCESS

Power BI offers a mobile app that allows users to access and view their reports and dashboards on their mobile devices, making it easy to stay connected and informed on the go

COST-EFFECTIVE

Power BI offers flexible pricing plans, including a free version, making it an affordable solution for businesses of all sizes and compared to tableau power bi is inexpensive



Installation of Power BI



- To check the system Requirements, Installation Files Detail, users have to navigate to “Advanced Download Options”.

Following are the System Requirements to Download Power BI Tool

**Supported Operating
Systems**

**Windows 10, Windows 7, Windows 8, Windows 8.1,
Windows Server 2008 R2, Windows Server 2012, Windows
Server 2012 R2**

**Microsoft Power BI Desktop Requires
Internet Explorer 9 or Higher**

**Microsoft Power BI Desktop is available for 32-bit (x86)
and 64-bit (x64) platforms**

Users can select a language in which they want to install Power BI and following files are available for download.

Installation of Power BI

This is the Link to directly Download Power BI Files -



Click here

The screenshot shows the Microsoft Power BI Desktop download page. A teal arrow points to the "Select Language:" dropdown menu, which is open and displays a list of languages including English, Basque, Bulgarian, Catalan, Chinese (Simplified), Chinese (Traditional), Croatian, Czech, Danish, Dutch, English (selected), Estonian, Finnish, French, Galician, German, Greek, Hindi, Hungarian, Indonesian, and Italian. To the right of the dropdown is a large red "Download" button. Below the dropdown, there is a brief description of Power BI Desktop: "combines state-of-the-art query and modeling built-in. Create reports helps you empower others with timely critical insight". At the bottom left, there is a "Details" section with a note: "Note: There are multiple files available. Select the files you need." and a "Version:" label showing "2.48.4792.721".

The screenshot shows the Microsoft download details page for the selected file. It displays the following information:

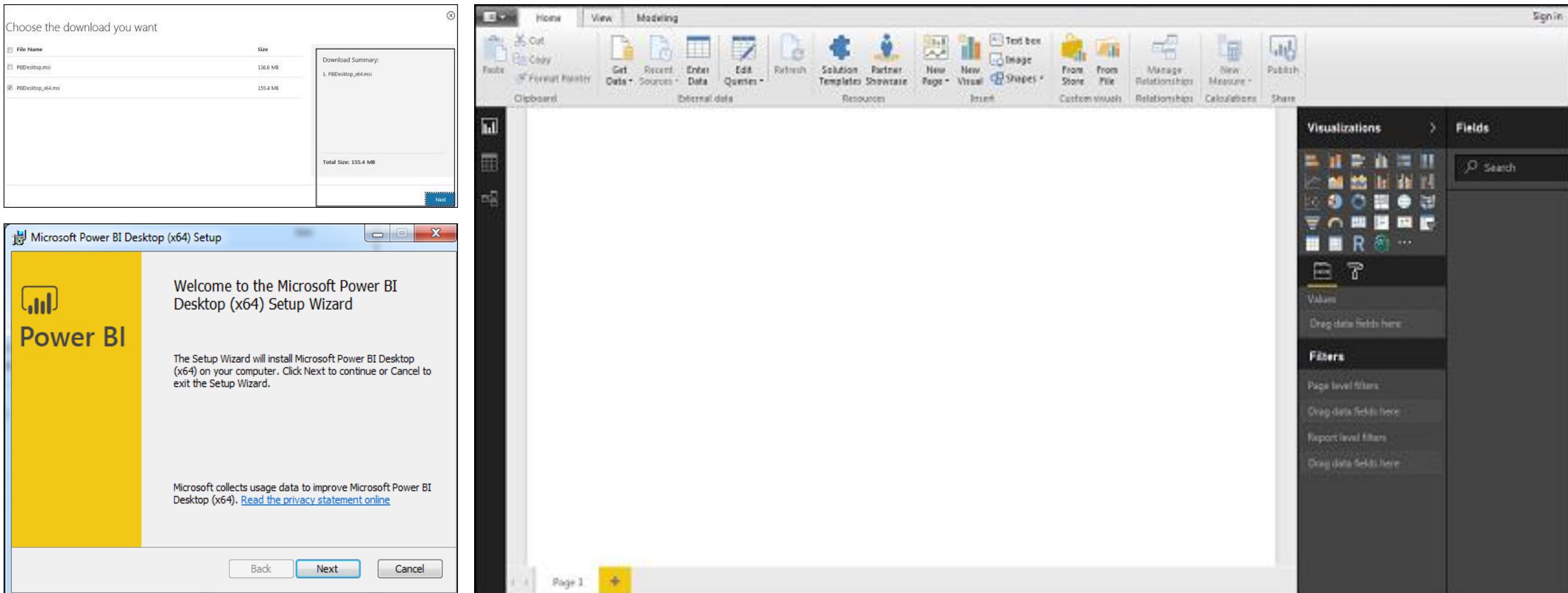
- Version:** 2.48.4792.721
- Date Published:** 7/12/2017
- File Name:** PBIDesktop.msi
PBIDesktop_x64.msi
- File Size:** 136.6 MB
155.4 MB

Below this, another section titled "Choose the download you want" lists the two files with checkboxes next to them. The "PBIDesktop.msi" file is listed under "File Name" and has a "Size" of "136.6 MB". The "PBIDesktop_x64.msi" file is listed under "File Name" and has a "Size" of "155.4 MB".

PBIDesktop_x64.msi shows a 64-bit OS file. Select the file you want to install as per OS type and click Next. Save the installation file on the local drive.

Installation of Power BI

When Power BI is Installed, it Launches a Welcome Screen. This Screen is used to Launch different options related to Get Data, enrich the existing Data Models, Create Reports as well as Publish and Share Reports.



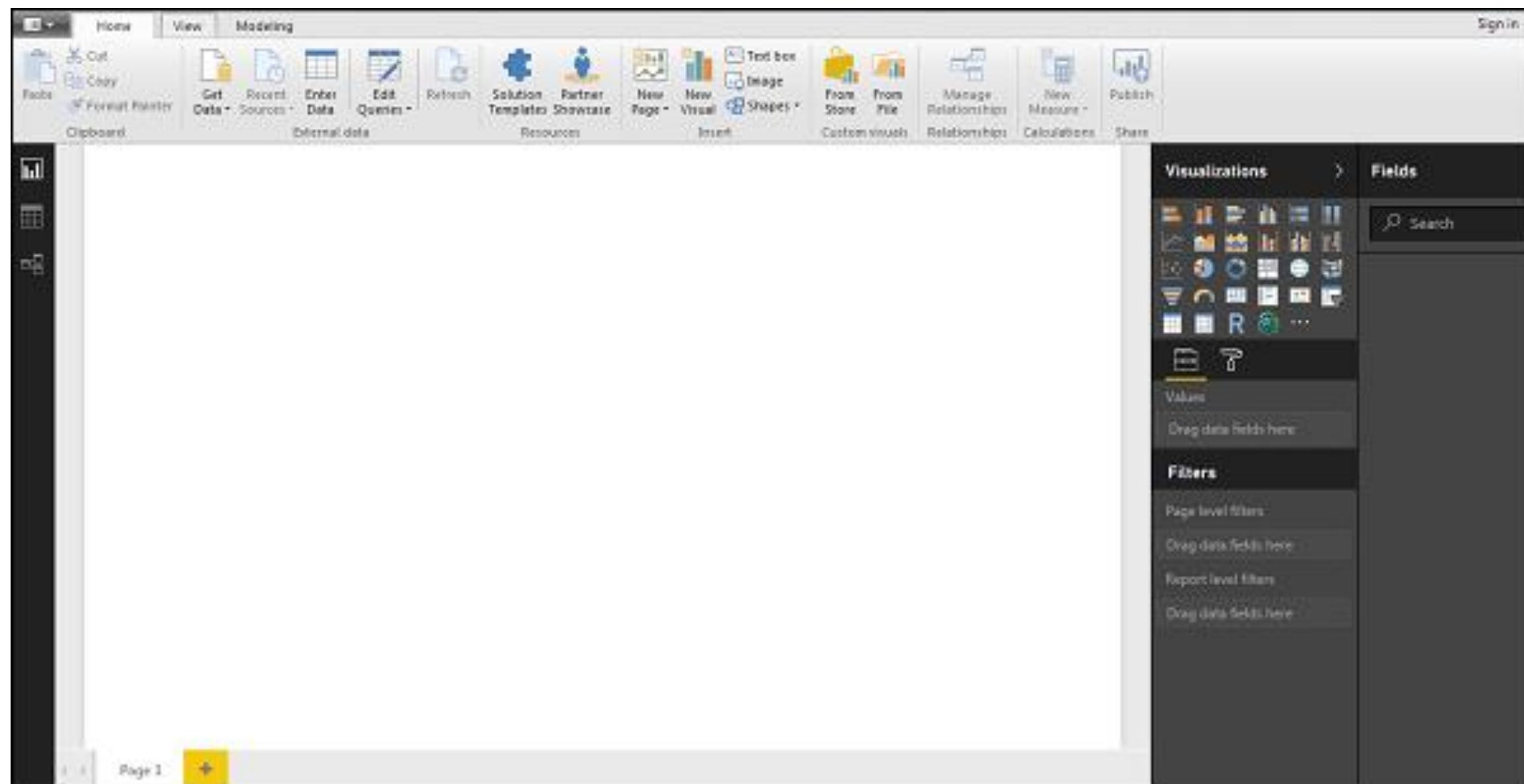
Accept the License Agreement and Follow the Instructions on the screen to Finish the Installation.

User Interface of Power BI

Module 02

How Does it Look Like

When Power BI is installed, it launches a welcome screen. This screen is used to launch different options related to get data, enrich the existing data models, create reports as well as publish and share reports.



Power BI Desktop Interface

01 RIBBON:

The Ribbon Displays common tasks associated with Reports and Visualizations;

02 PAGES:

The Pages tab area along the bottom allows you to Select or Add a Report Page;

03 VISUALIZATIONS:

The Visualizations pane allows you to change Visualizations, Customize Colors or Axes, Apply Filters, Drag Fields, and more;

04 FIELDS:

The Fields pane, allows you to Drag and Drop Query Elements and Filters onto the Report View, or Drag to the Filters area of the Visualizations Pane;

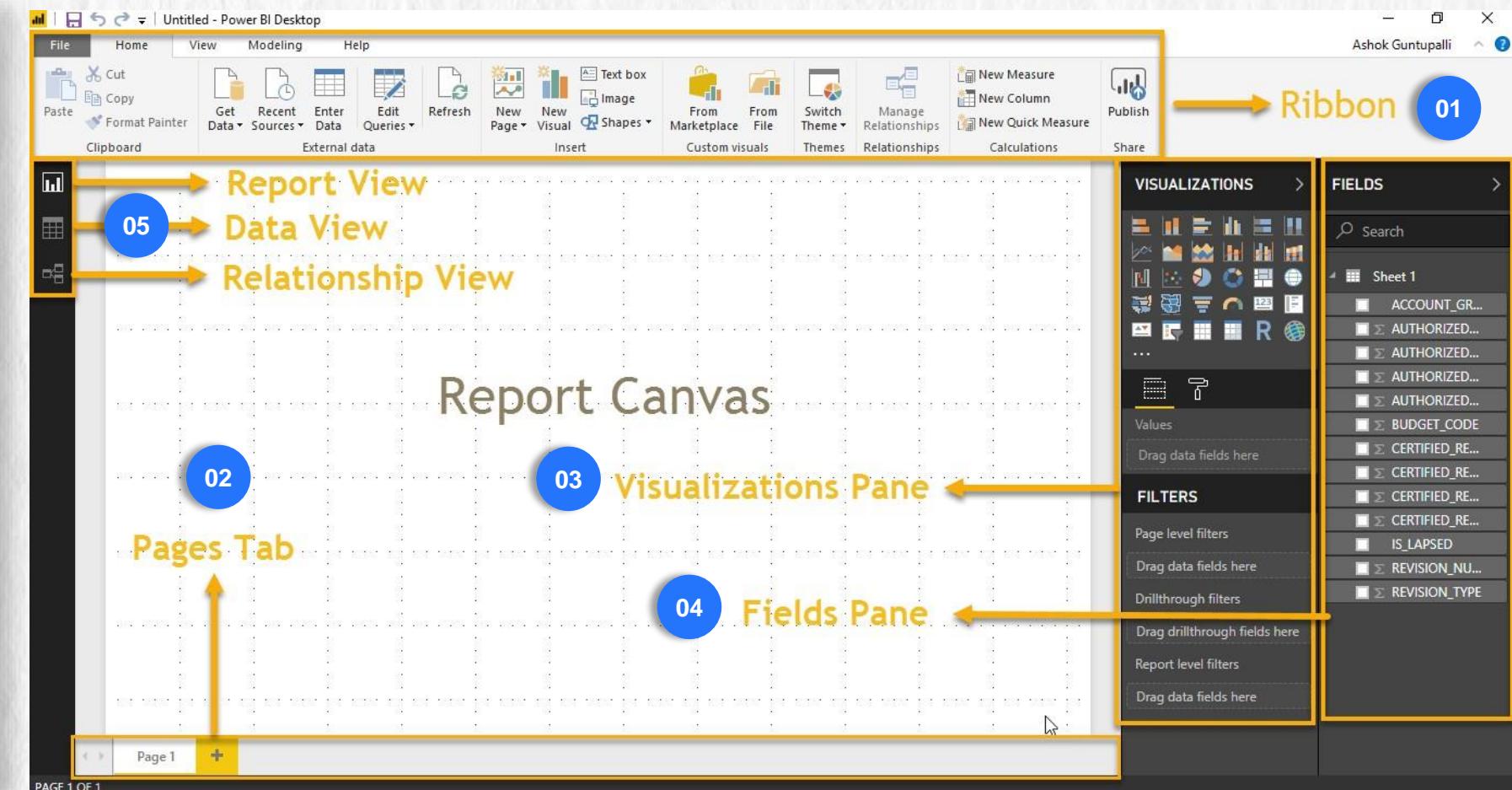
05 VIEWS PANE:

There are Three Types of Views in the Views pane

Reports View - allows you to create any number of report pages with visualizations.

Data View - allows you to inspect, explore, and understand data in your Power BI Desktop model.

Relationship or Model View - allows you to show all of the tables, columns, and relationships in your model.





Module 03



Process To Create Dashboard

How To Import Data and Types of Data

- Open a New Sheet and then get Data from your Source for the Data
- You can get Data from different sources. For example Excel, SQL Server, Web, etc



This screenshot shows the Microsoft Power BI desktop application. The top navigation bar includes File, Home, Insert, Modeling, View, and Help. The Home tab is selected, showing the 'Clipboard' ribbon tab. Below the ribbon, the main workspace has a title 'Add data to your report' and a sub-instruction 'Once loaded, your data will appear in the Data pane.' It features four buttons: 'Import data from Excel', 'Import data from SQL Server', 'Paste data into a blank table', and 'Try a sample dataset'. A link 'Get data from another source →' is also present. The right side of the interface contains a 'Visualizations' pane with a grid of visualization icons, a 'Filters' pane, and a 'Data' pane. The bottom of the screen shows a navigation bar with 'Page 1' and a '+' button.

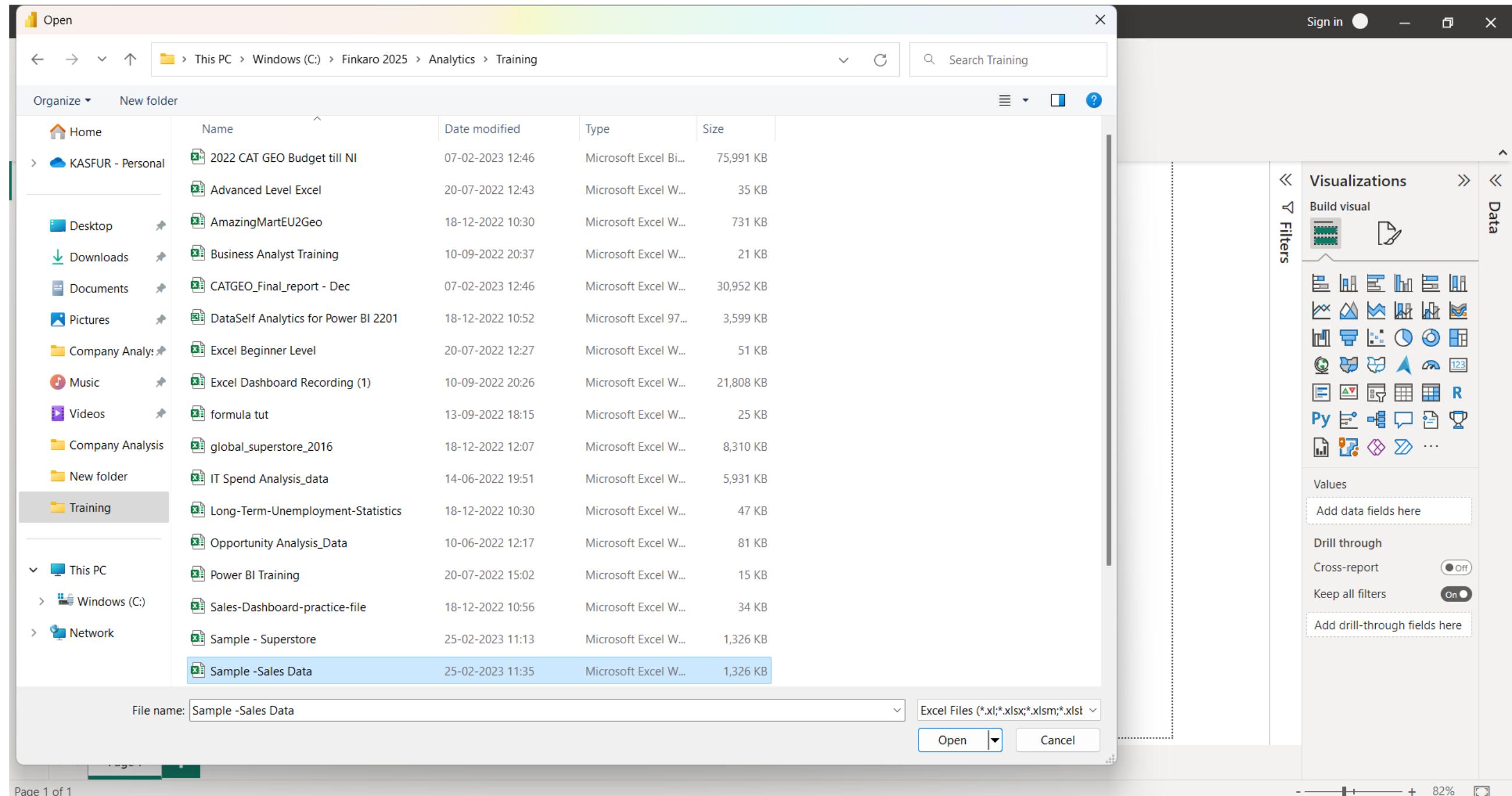
Types of Loading and Transforming of the Data

The screenshot shows the Microsoft Power BI interface. The ribbon at the top has tabs: File, Home (selected), Insert, Modeling, View, and Help. The Home tab has several sections: Clipboard (Paste, Cut, Copy, Format painter), Get data (Get data, workbook hub, Data, SQL Server, Enter data), Recent sources (Dataverse, Refresh queries), Transform data (New visual, Text box, More visual), New measure (Quick measure, Calculations), Sensitivity (Sensitivity, Share), and Publish. A blue box highlights the 'Data' section under 'Get data'. The main area says 'Add data to your report' and 'Once loaded, your data will appear in the Data pane.' It shows four options: Import data from Excel (Excel icon), Import data from SQL Server (SQL icon), Paste data into a blank table (Clipboard icon), and Try a sample dataset (Cylinder icon). A blue box also highlights these four options. Below them is a link 'Get data from another source →'. On the right, there are panes for Visualizations (Build visual, Filters), Data (Values, Drill through, Cross-report, Keep all filters), and a bottom pane for Add drill-through fields here.

Process to Create Dashboard

The screenshot shows the Microsoft Power BI desktop application interface. The ribbon at the top is set to the 'Home' tab, which includes various data import and visualization tools. On the left, there's a sidebar for 'Common data sources' where 'Excel workbook' is currently selected. The main workspace is titled 'Add data to your report' and provides options to import data from Excel, SQL Server, or a blank table, or to try a sample dataset. To the right, there are sections for 'Visualizations' (listing various chart and report icons) and 'Filters' (with settings for drill-through, cross-report, and keep all filters). The bottom navigation bar indicates 'Page 1'.

Process to Create Dashboard



Process to Create Dashboard

The screenshot shows the Microsoft Power BI Data view interface. The top navigation bar includes File, Home, Insert, Modeling, View, and Help. The Home tab is selected. On the left, there's a ribbon with standard Office functions like Paste, Cut, Copy, Format painter, and Clipboard. Below the ribbon is a toolbar with icons for Get data, Excel, Data, and SC. The main area features a 'Navigator' dialog box. The 'Display Options' section shows a folder named 'Sample -Sales Data.xlsx [6]' containing several tables: 'Orders' (selected), 'People', 'Returns', 'Orders1', 'People2', and 'Returns3'. To the right of the Navigator is a preview of the 'Orders' table with columns: Row ID, Order ID, Order Date, Ship Date, Ship Mode, and Customer. The table contains 23 rows of data. At the bottom of the Navigator dialog are 'Load', 'Transform Data', and 'Cancel' buttons. To the right of the preview is a 'Visualizations' pane with various chart and report icons, and a 'Filters' pane with options for drill-through, cross-report, and keep all filters.

Row ID	Order ID	Order Date	Ship Date	Ship Mode	Cus
1	CA-2018-152156	08-11-2018	11-11-2018	Second Class	
2	CA-2018-152156	08-11-2018	11-11-2018	Second Class	
3	CA-2018-138688	12-06-2018	16-06-2018	Second Class	
4	US-2017-108966	11-10-2017	18-10-2017	Standard Class	
5	US-2017-108966	11-10-2017	18-10-2017	Standard Class	
6	CA-2016-115812	09-06-2016	14-06-2016	Standard Class	
7	CA-2016-115812	09-06-2016	14-06-2016	Standard Class	
8	CA-2016-115812	09-06-2016	14-06-2016	Standard Class	
9	CA-2016-115812	09-06-2016	14-06-2016	Standard Class	
10	CA-2016-115812	09-06-2016	14-06-2016	Standard Class	
11	CA-2016-115812	09-06-2016	14-06-2016	Standard Class	
12	CA-2016-115812	09-06-2016	14-06-2016	Standard Class	
13	CA-2019-114412	15-04-2019	20-04-2019	Standard Class	
14	CA-2018-161389	05-12-2018	10-12-2018	Standard Class	
15	US-2017-118983	22-11-2017	26-11-2017	Standard Class	
16	US-2017-118983	22-11-2017	26-11-2017	Standard Class	
17	CA-2016-105893	11-11-2016	18-11-2016	Standard Class	
18	CA-2016-167164	13-05-2016	15-05-2016	Second Class	
19	CA-2016-143336	27-08-2016	01-09-2016	Second Class	
20	CA-2016-143336	27-08-2016	01-09-2016	Second Class	
21	CA-2016-143336	27-08-2016	01-09-2016	Second Class	
22	CA-2018-137330	09-12-2018	13-12-2018	Standard Class	
23	CA-2018-137330	09-12-2018	13-12-2018	Standard Class	

If the Data is in Proper form then we
Load the Data Directly

After all the changes are made then
you can Load the Data and Start
Creating the Dashboard



If the Data needs Cleaning and
Changes then we click on “Transform”
and make the desired changes. For
example Making DIM and FACT Tables

Process to Create Dashboard

The screenshot shows the Microsoft Power BI desktop application interface. The ribbon at the top has tabs: File, Home (selected), Insert, Modeling, View, and Help. The Home tab contains various icons for data management (Paste, Cut, Copy, Format painter, Get data, Excel, Data hub, SQL Server, Enter data, Dataverse, Recent sources), visual creation (Transform data, Refresh data, New visual, Text box, More visuals), calculations (New measure, Quick measure), sensitivity analysis (Sensitivity), and publishing (Publish). On the left, there's a navigation pane with icons for Home, Reports, and Datasets. The main canvas area displays the text "Build visuals with your data" and "Select or drag fields from the Data pane onto the report canvas." A cursor is hovering over a field in a list of data fields. To the right, the "Visualizations" pane is open, showing details for a visualization named "Orders": Name Orders, Storage mode Import, Data refreshed 25/2/2023, 11:46:15 am. It includes sections for Visualizations (with a grid of icons), Values (Add data fields here), Drill through (Cross-report Off, Keep all filters On), and Add drill-through fields here. The "Data" pane is also open, showing a list of fields under the "Orders" dataset, including Category, City, Country/Region, Customer ID, Customer Name, ∑ Discount, Order Date, Order ID, ∑ Postal Code, Product ID, Product Name, ∑ Profit, ∑ Quantity, Region, ∑ Row ID, ∑ Sales, Segment, Ship Date, Ship Mode, State, and Sub-Category. The "Data" pane is highlighted with a blue border.

Process to Create Dashboard

Untitled - Power Query Editor

File Home Transform Add Column View Tools Help

New Source Recent Enter Data Data source settings Manage Parameters Refresh Preview Properties Advanced Editor Choose Columns Remove Columns Keep Rows Remove Rows Split Column Group By Data Type: Whole Number Merge Queries Append Queries Use First Row as Headers Combine Files Combine AI Insights

Close & Apply Close New Query Data Sources Parameters Query Manage Columns Reduce Rows Sort 1 2 Replace Values

Queries [1]

Orders

	Row ID	Order ID	Order Date	Ship Date	Ship Mode	Customer ID	Customer Name
1		CA-2018-152156	08-11-2018	11-11-2018	Second Class	CG-12520	Claire Gute
2		CA-2018-152156	08-11-2018	11-11-2018	Second Class	CG-12520	Claire Gute
3		CA-2018-138688	12-06-2018	16-06-2018	Second Class	DV-13045	Darrin Van Huffel
4		US-2017-108966	11-10-2017	18-10-2017	Standard Class	SO-20335	Sean O'Donnell
5		US-2017-108966	11-10-2017	18-10-2017	Standard Class	SO-20335	Sean O'Donnell
6		CA-2016-115812	09-06-2016	14-06-2016	Standard Class	BH-11710	Brosina Hoffmann
7		CA-2016-115812	09-06-2016	14-06-2016	Standard Class	BH-11710	Brosina Hoffmann
8		CA-2016-115812	09-06-2016	14-06-2016	Standard Class	BH-11710	Brosina Hoffmann
9		CA-2016-115812	09-06-2016	14-06-2016	Standard Class	BH-11710	Brosina Hoffmann
10		CA-2016-115812	09-06-2016	14-06-2016	Standard Class	BH-11710	Brosina Hoffmann
11		CA-2016-115812	09-06-2016	14-06-2016	Standard Class	BH-11710	Brosina Hoffmann
12		CA-2016-115812	09-06-2016	14-06-2016	Standard Class	BH-11710	Brosina Hoffmann
13		CA-2019-114412	15-04-2019	20-04-2019	Standard Class	AA-10480	Andrew Allen
14		CA-2018-161389	05-12-2018	10-12-2018	Standard Class	IM-15070	Irene Maddox
15		US-2017-118983	22-11-2017	26-11-2017	Standard Class	HP-14815	Harold Pawlan
16		US-2017-118983	22-11-2017	26-11-2017	Standard Class	HP-14815	Harold Pawlan
17		CA-2016-105893	11-11-2016	18-11-2016	Standard Class	PK-19075	Pete Kriz
18		CA-2016-167164	13-05-2016	15-05-2016	Second Class	AG-10270	Alejandro Groves
19		CA-2016-143336	27-08-2016	01-09-2016	Second Class	ZD-21925	Zuschuss Donald
20		CA-2016-143336	27-08-2016	01-09-2016	Second Class	ZD-21925	Zuschuss Donald
21		CA-2016-143336	27-08-2016	01-09-2016	Second Class	ZD-21925	Zuschuss Donald
22		CA-2018-137330	09-12-2018	13-12-2018	Standard Class	KB-16585	Ken Black
23		CA-2018-137330	09-12-2018	13-12-2018	Standard Class	KB-16585	Ken Black
24		US-2019-156909	16-07-2019	18-07-2019	Second Class	SF-20065	Sandra Flanagan
25		CA-2017-106320	25-09-2017	30-09-2017	Standard Class	EB-13870	Emily Burns
26		CA-2018-121755	16-01-2018	20-01-2018	Second Class	EH-13945	Eric Hoffmann
27		CA-2018-121755	16-01-2018	20-01-2018	Second Class	EH-13945	Eric Hoffmann
28							

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

PREVIEW DOWNLOADED AT 11:43

Query Settings

PROPERTIES

Name: Orders
All Properties

APPLIED STEPS

Source, Navigation, Promoted Headers, Changed Type

Module 04

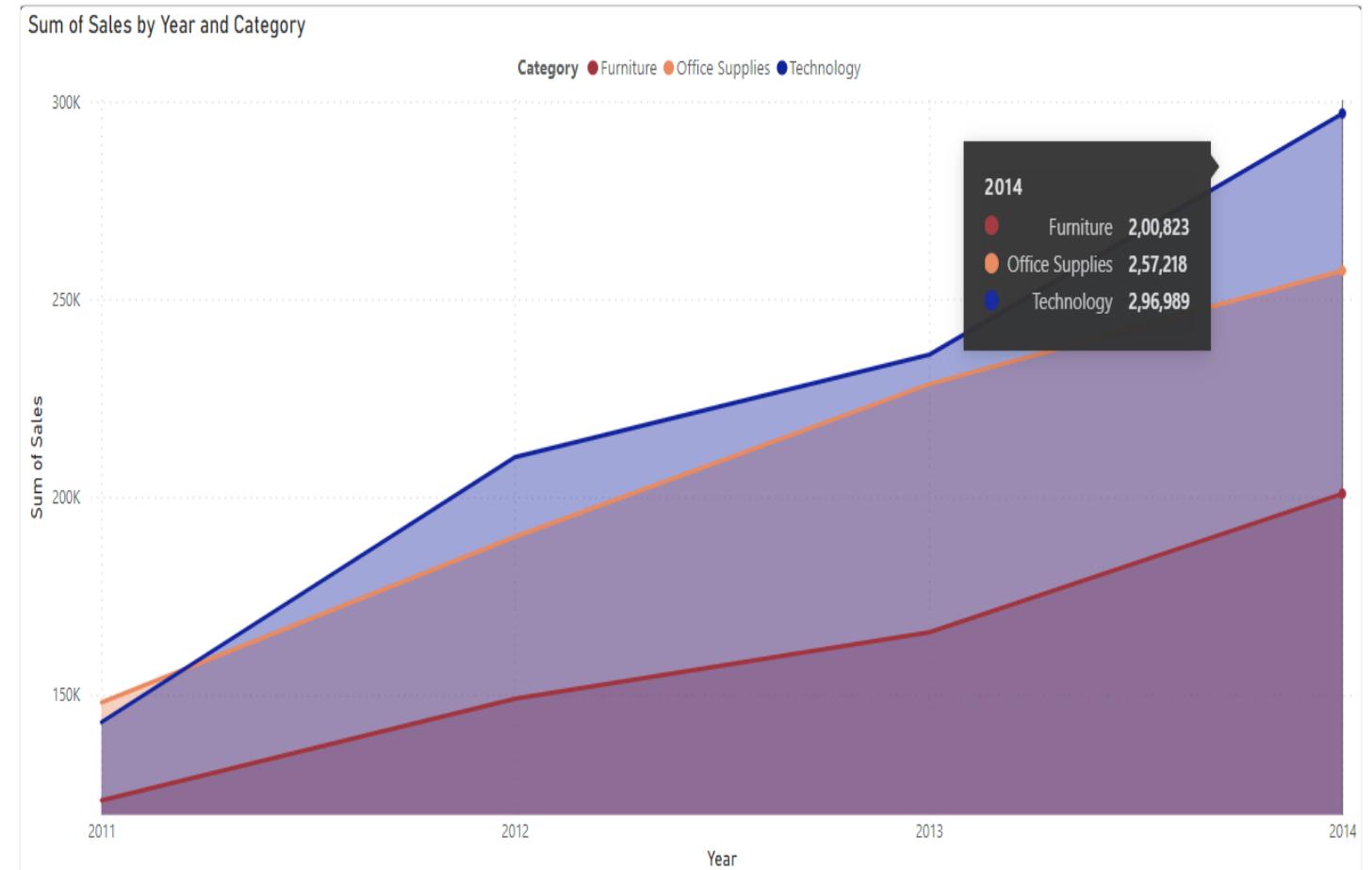
**Exploring the Visuals
and Insight**

The area chart depends on line charts to display quantitative graphical data. The area between the axis and lines is commonly filled with colors, textures, and patterns. You can compare more than two quantities with area charts. It shows the trend changes over time and can be used to attract the attention of the users to know the total changes across the trends.

AREA CHART E.g.

The below Area chart clearly shows you how the sale of Furniture, Office Supplier, and Technology varies over the years.

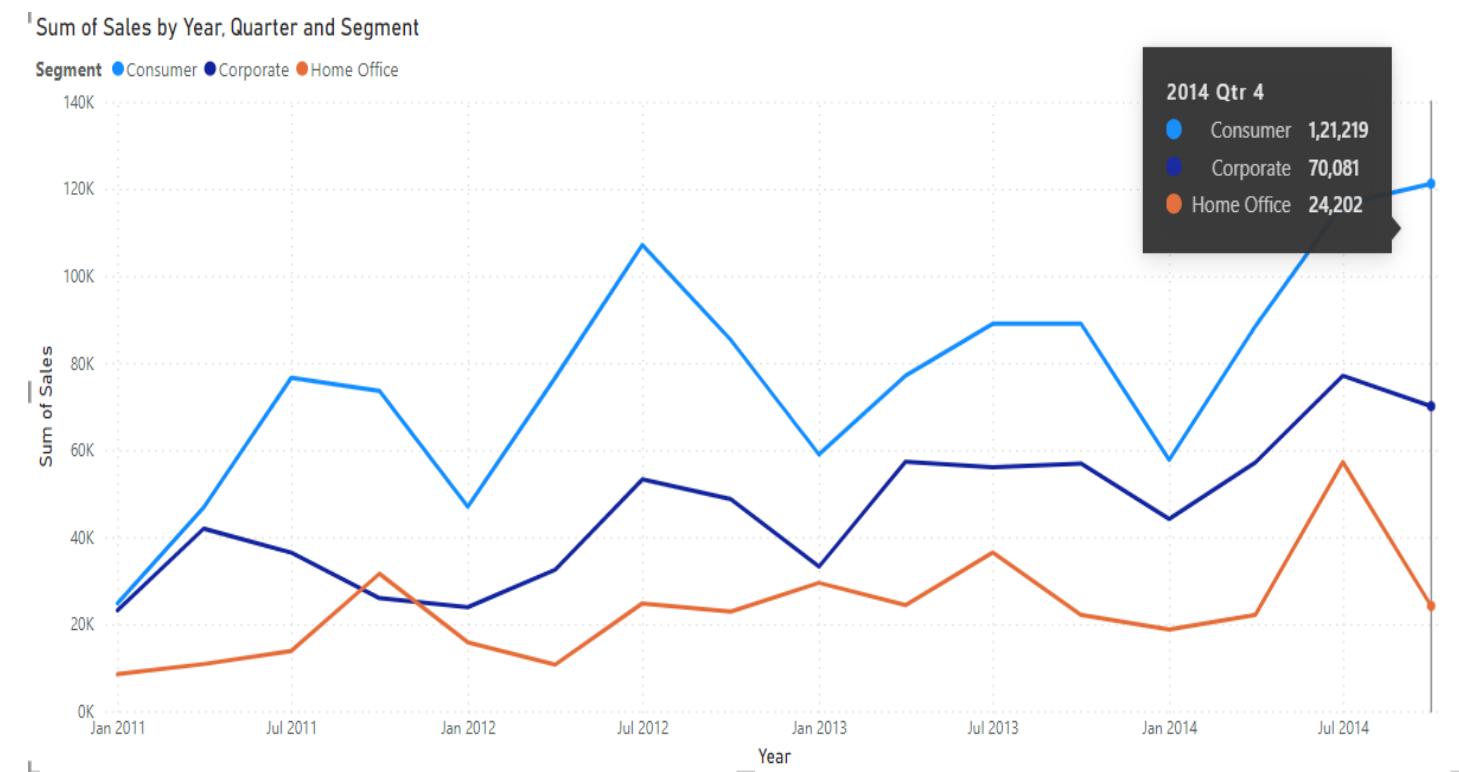
Let's Take Example live



Line charts are mostly used charts to represent the data and are characterized by a series of data points connected by a straight line. Each point in the line corresponds to a data value in the given category. It shows the exact value of the plotted data. Line charts should only be used to measure the trends over a period of time, e.g. dates, months, and years

LINE CHART E.g.

The below line chart shows the Sales trend of different Segment. It's clearly indicating that the sales of consumer segment has been increasing gradually since its inception.



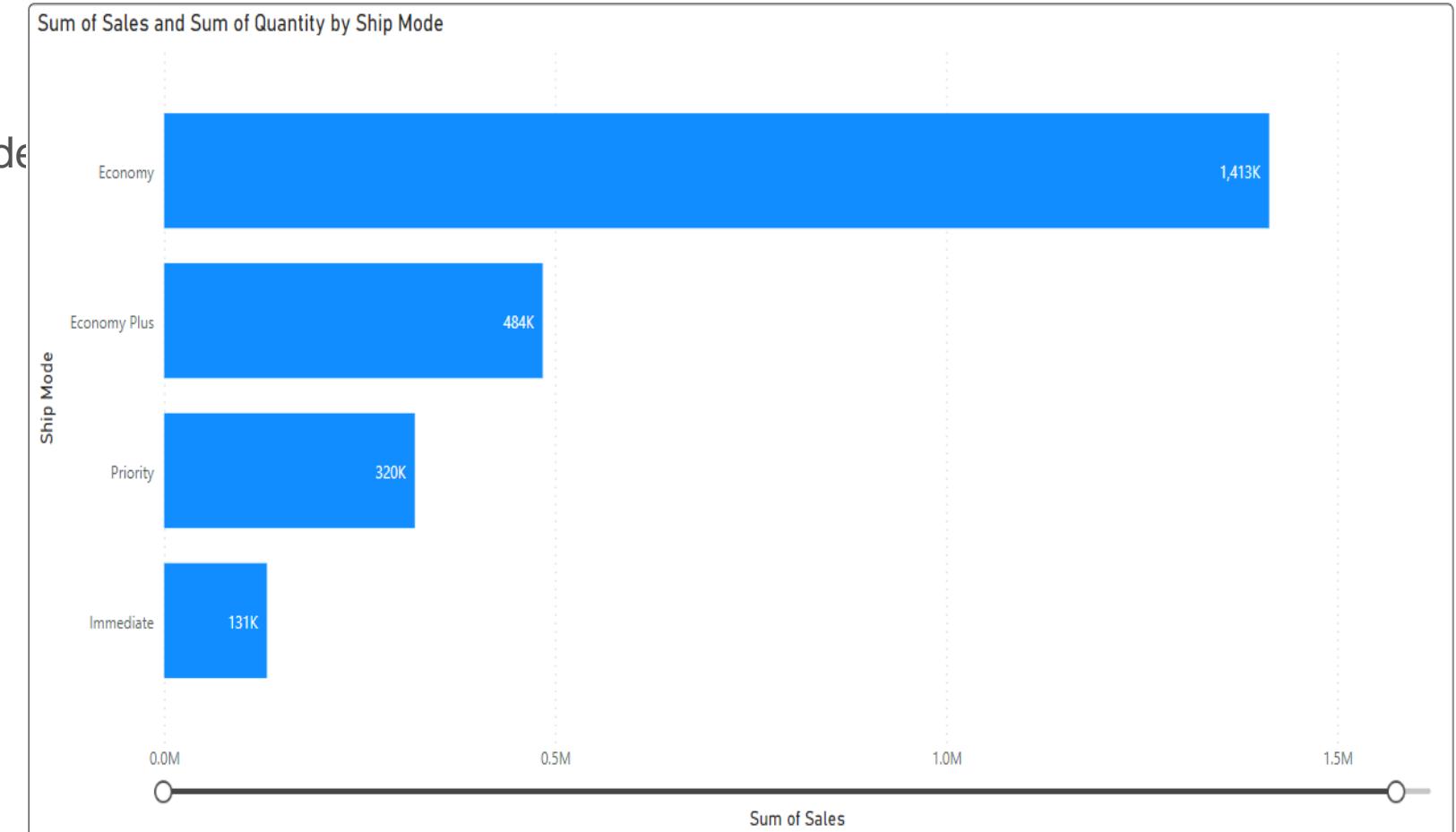
Let's Take Example live

Bar Charts

- In the list of Power BI visualization types, next, we are going to discuss bar charts.
- Bar charts are mostly used graphs because they are simple to create and easy to understand. Bar charts are also called horizontal charts that represent the absolute data. They are useful to display the data that include negative values because it is possible to position the bars above and below the x-axis.

LINE CHART E.g.

We have shown you the sales through different ship modes

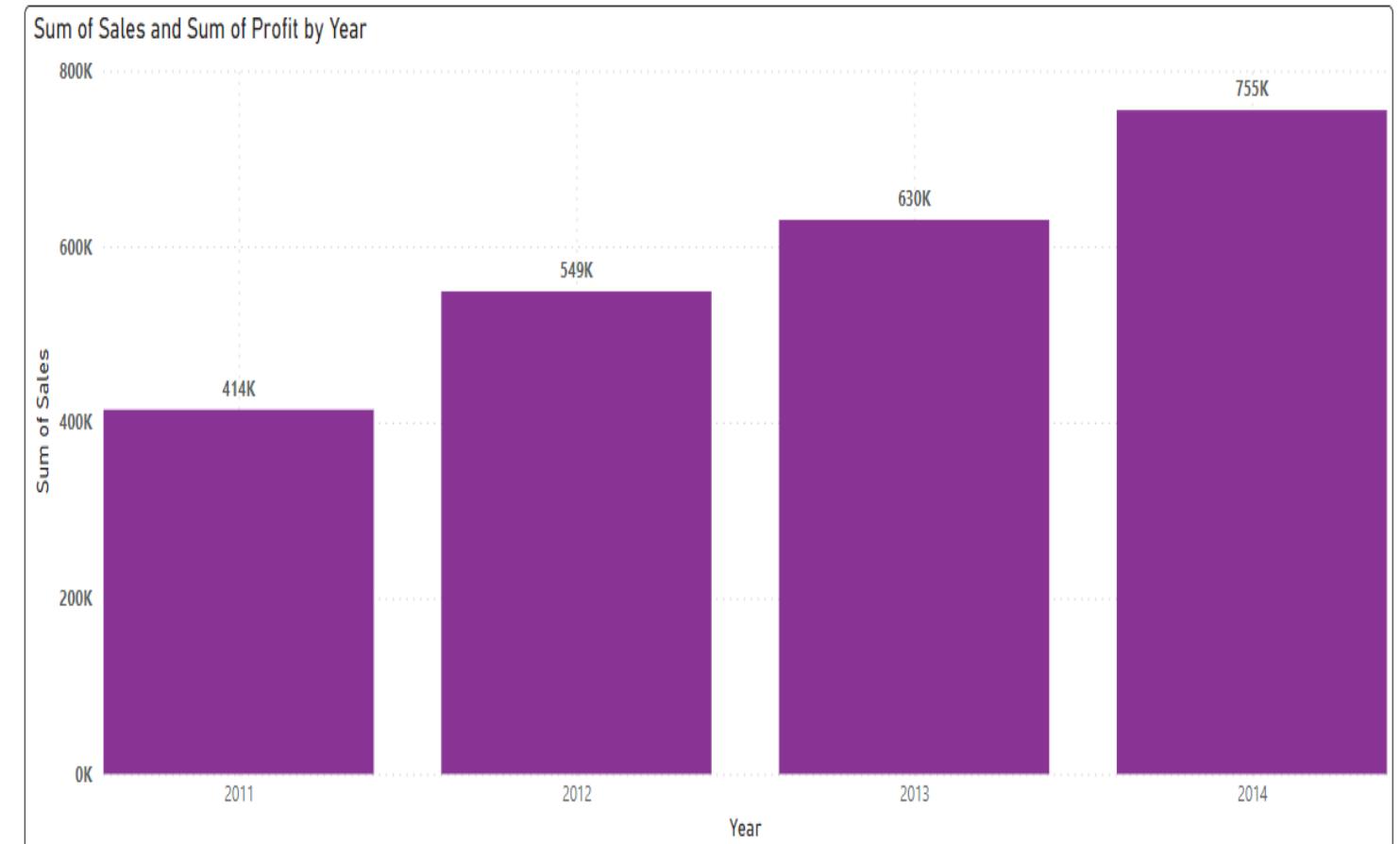


Let's Take Example live

Column charts are similar to bar charts, and the only difference between these two is, column chart divides the same category data into the clusters and compares within the clusters. Also, it compares the data from other clusters.

COLUMN CHART E.g.

- Let us consider one example in which sales of the company with the past years



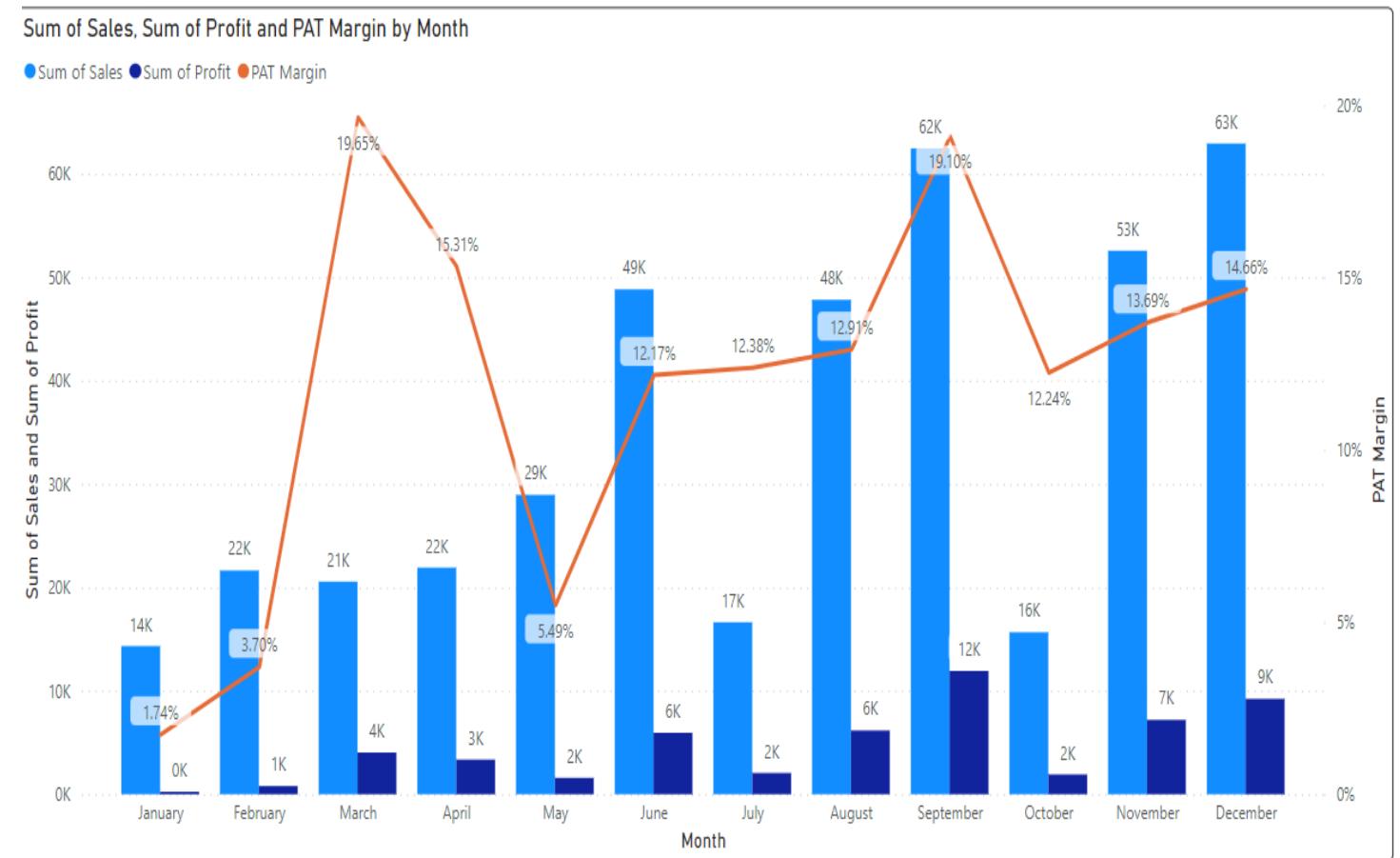
Let's Take Example live

A combo chart is a combination of both the column charts and line charts that help you to make a quicker comparison of the data. The combo chart shows the relationship between two measures in a single visualization. It also helps to compare multiple measures with different values.

COMBO CHART E.g.

In the above combo chart, you can see the comparison between sales and Profit and also the profit margin. With the help of this combo chart, an organization can quickly analyze the data about the product to make business decisions quickly.

Let's Take Example live

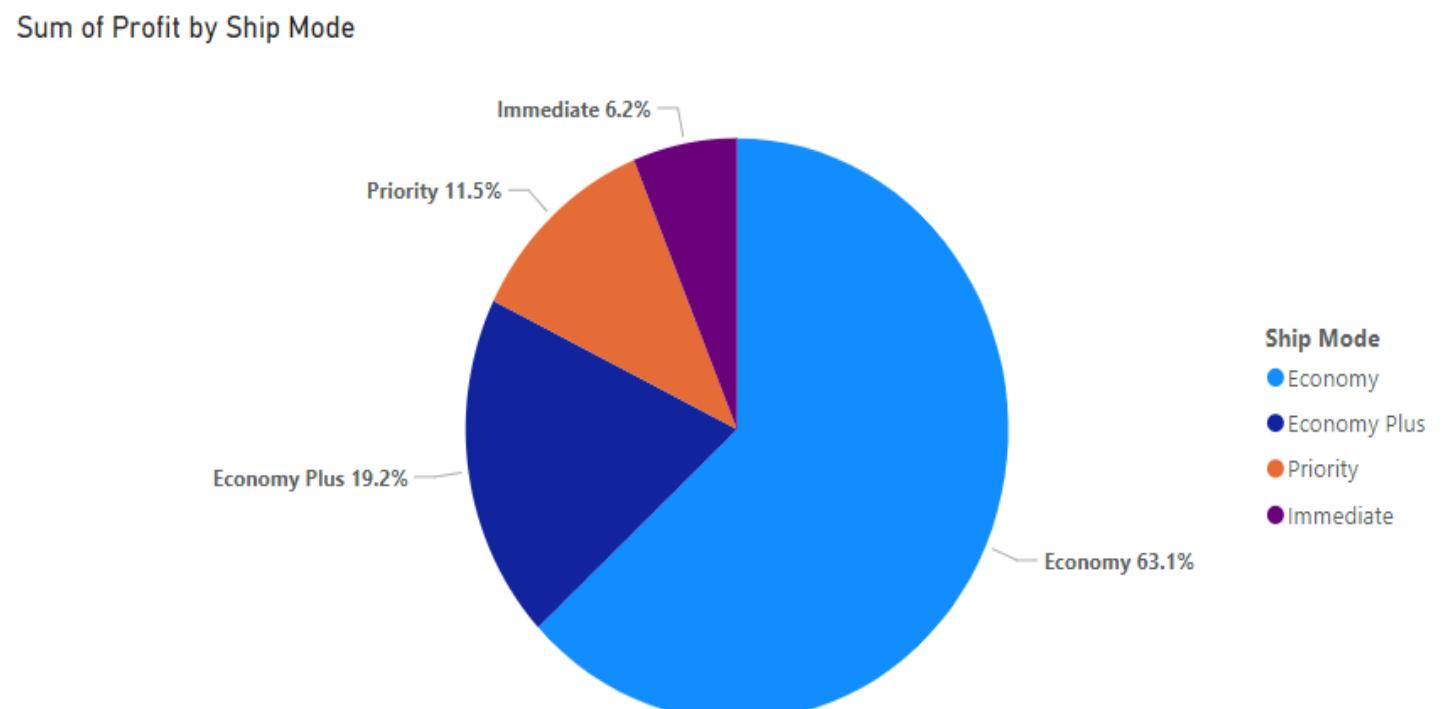


Pie Chart

A pie chart is a circular statistical chart, and it shows the whole data in parts. Each portion of a pie chart represents the percentages, and the sum of all parts should be equal to 100%. The whole data can be divided into slices to show the numerical propositions of each part of the data. Pie charts are mostly used to represent the same category of data. It helps users to understand the data quickly. They are widely used in education, the business world, and communication media.

PIE CHART E.g.

In the below Pie chart, it is clear through which mode is higher order for sale



Let's Take Example live

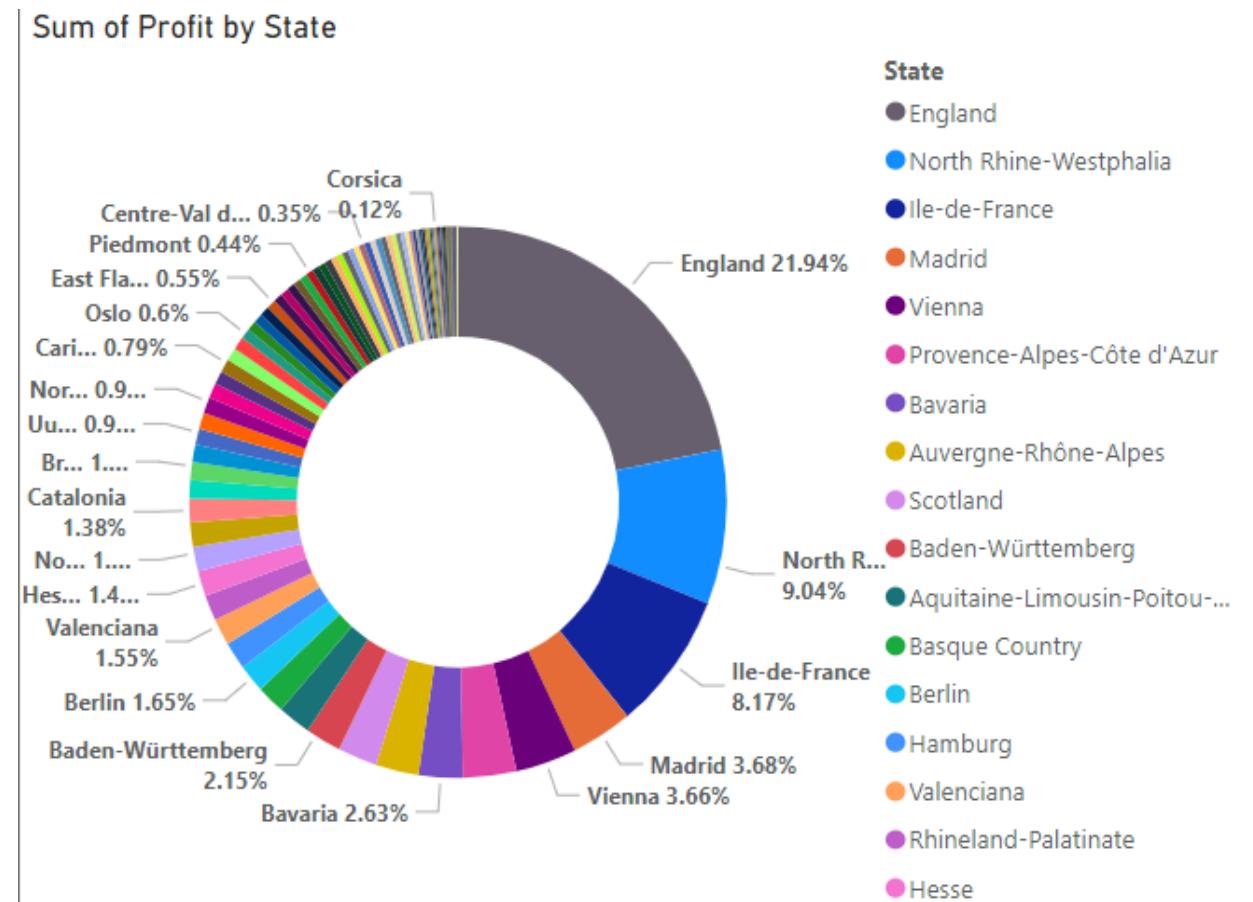
Doughnut Charts

Doughnuts are similar to pie charts, and it is named doughnut chart because it looks similar to a doughnut. You can easily understand the data because doughnut charts show the whole data into the proposition. It is the most useful chart when you need to display various propositions that make up the final value.

DOUGHNUT CHART E.g.

Let us consider an example, Sales accross the Globe

Let's Take Example live

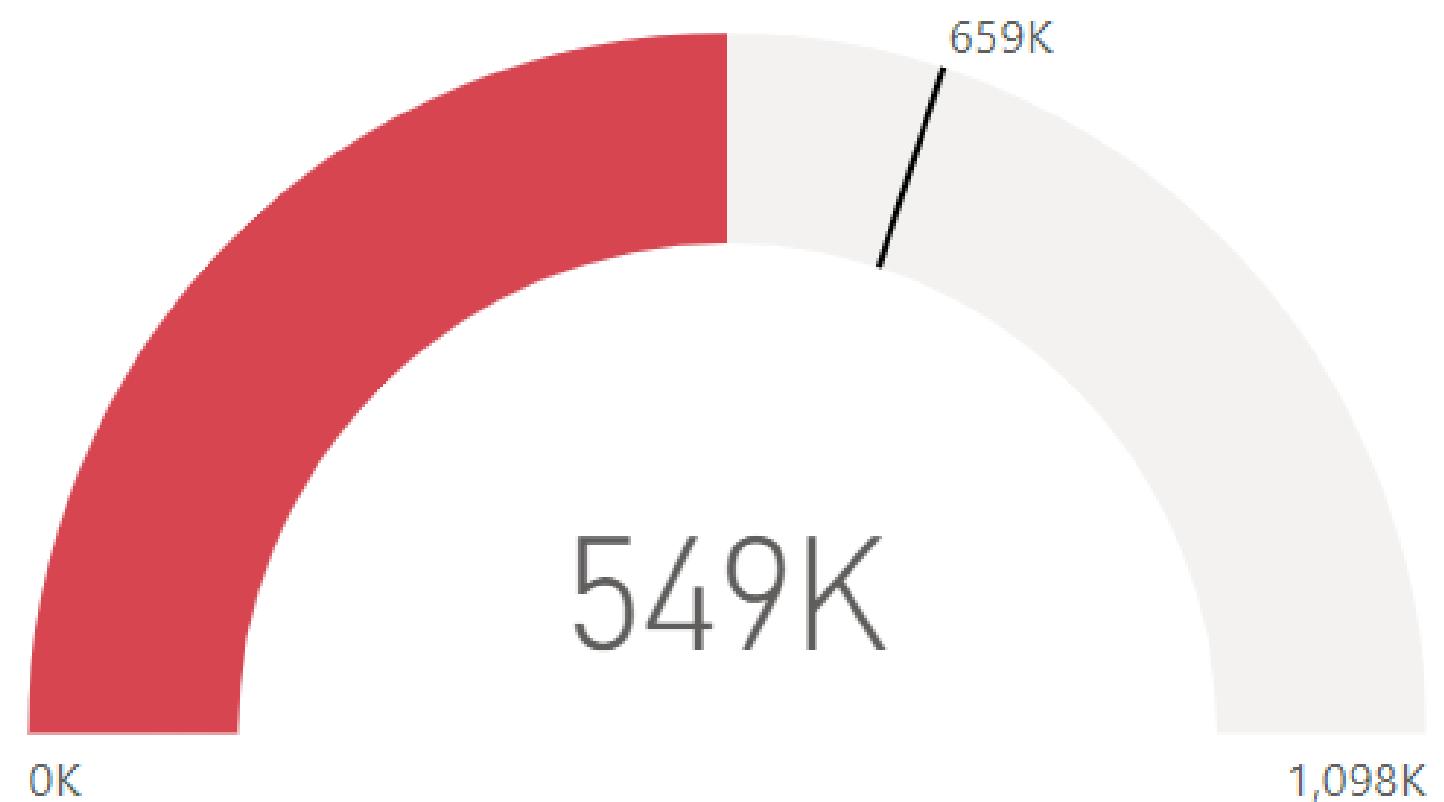


A gauge chart is also known as a speedometer or dial chart. It uses the needle to read the data, and it shows the information on a dial. The gauge chart, it represents the value of each needle as it reads the data according to the axis or colored data. These charts are useful to compare the values between the variables either by using multiple needles on the same gauge or different gauges.

GAUGE CHART E.g.

The above gauge chart shows you the sales of the company and Target Sales

Target Deviation



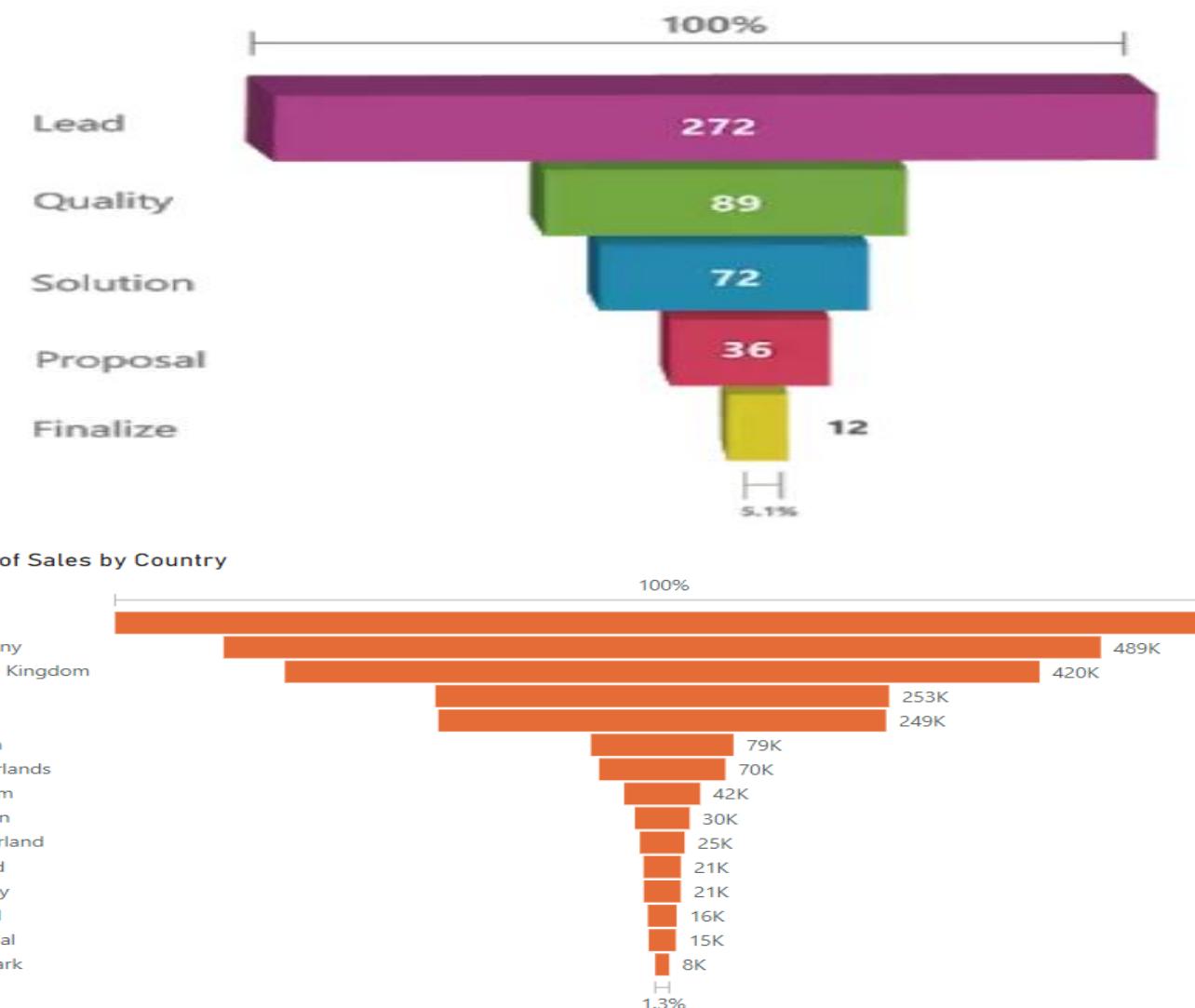
Let's Take Example live

Funnel Charts

The funnel chart is a type of chart which is used to visualize the data that flows from one phase to another phase. In the funnel chart, the whole data is considered as 100%, and in each phase, it is represented as numerical propositions of the data

FUNNEL CHART E.g.

The above Funnel charts show the flow of each phase. In the below image you can see the total leads per day is 272, the quality leads are 89, solution leads are 72, proposal leads are 36, and finalize leads are 12.

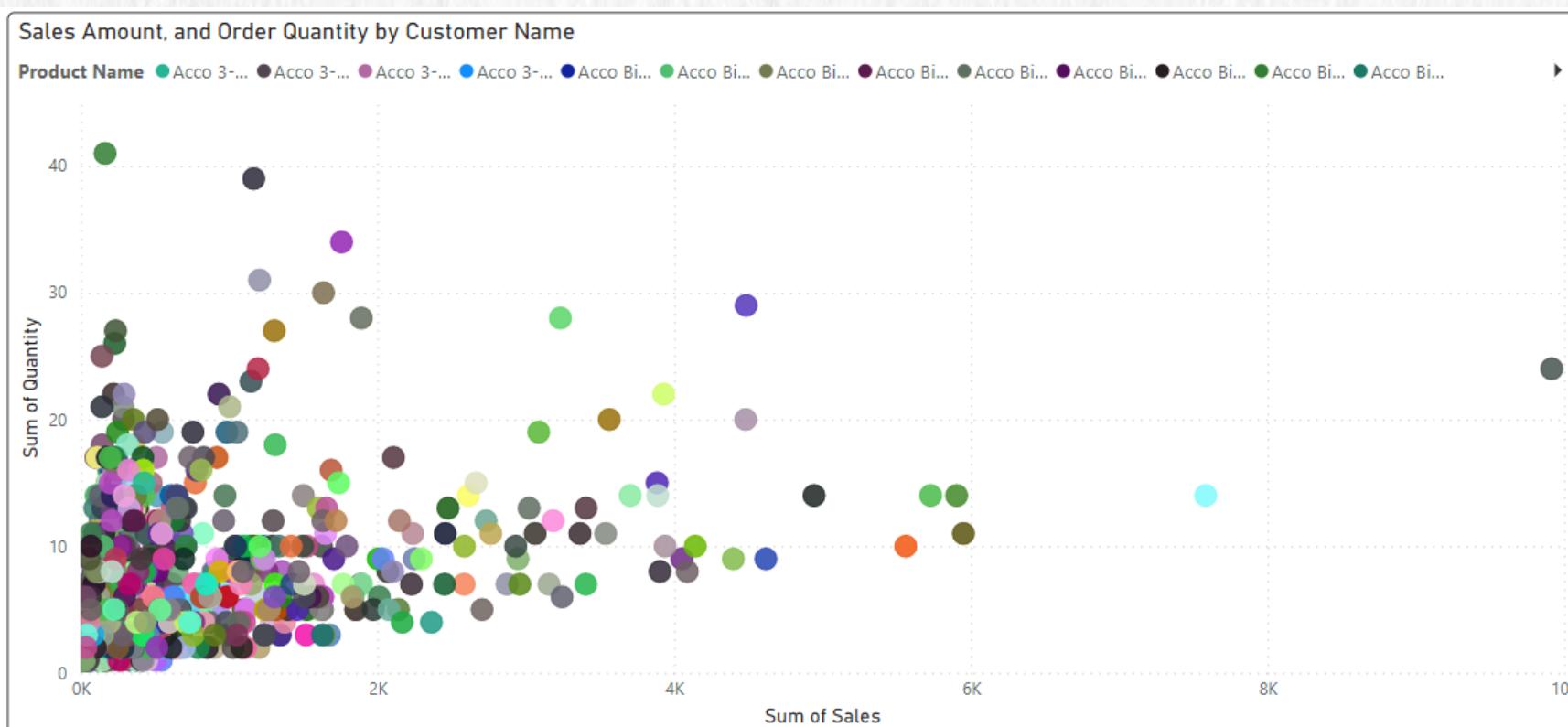


Let's Take Example live

Scatter Charts

Scatter charts are used to visualize the data using the dots that represent the values obtained from two different variables, such as the x-axis and y-axis. These charts are used to show the relationship between two different variables. It is also called a correlation plot because it shows how two variables are correlated to each other.

Till now, we discussed the top 10 Power BI visualization types. Now we are going to discuss the remaining visualization types with detailed information.



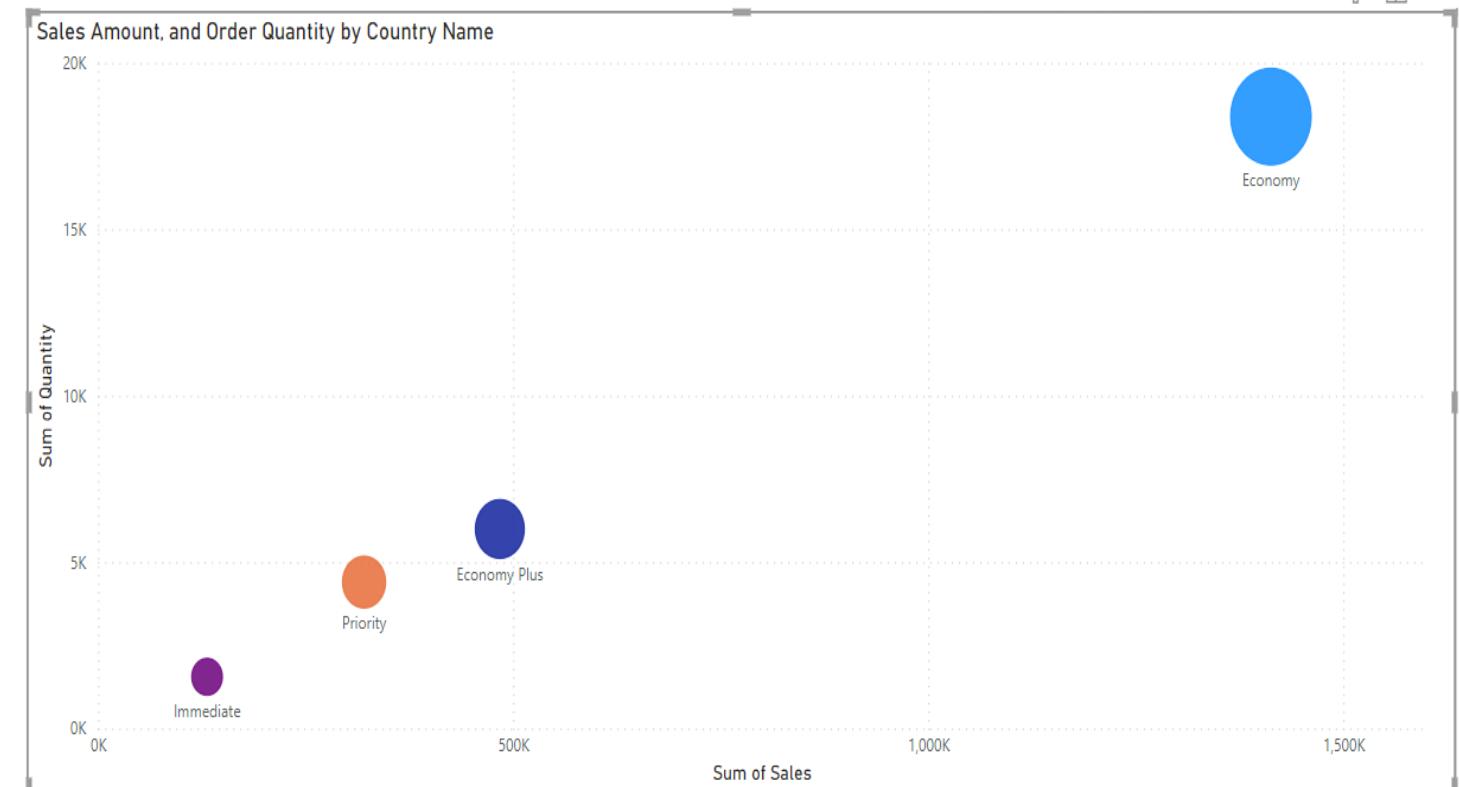
Let's Take Example live

Bubble Charts

Bubble charts show the data in the form of a circle. The values of the variables are represented by the x-axis and y-axis. The size of the circle represents the measure of the variables.

BUBBLE CHART E.g.

In the below bubble chart, you can observe that on X-axis, the Sum of Sales is measured, and quantity is measured on Y-axis. Each bubble represents the size of the Ship Mode.



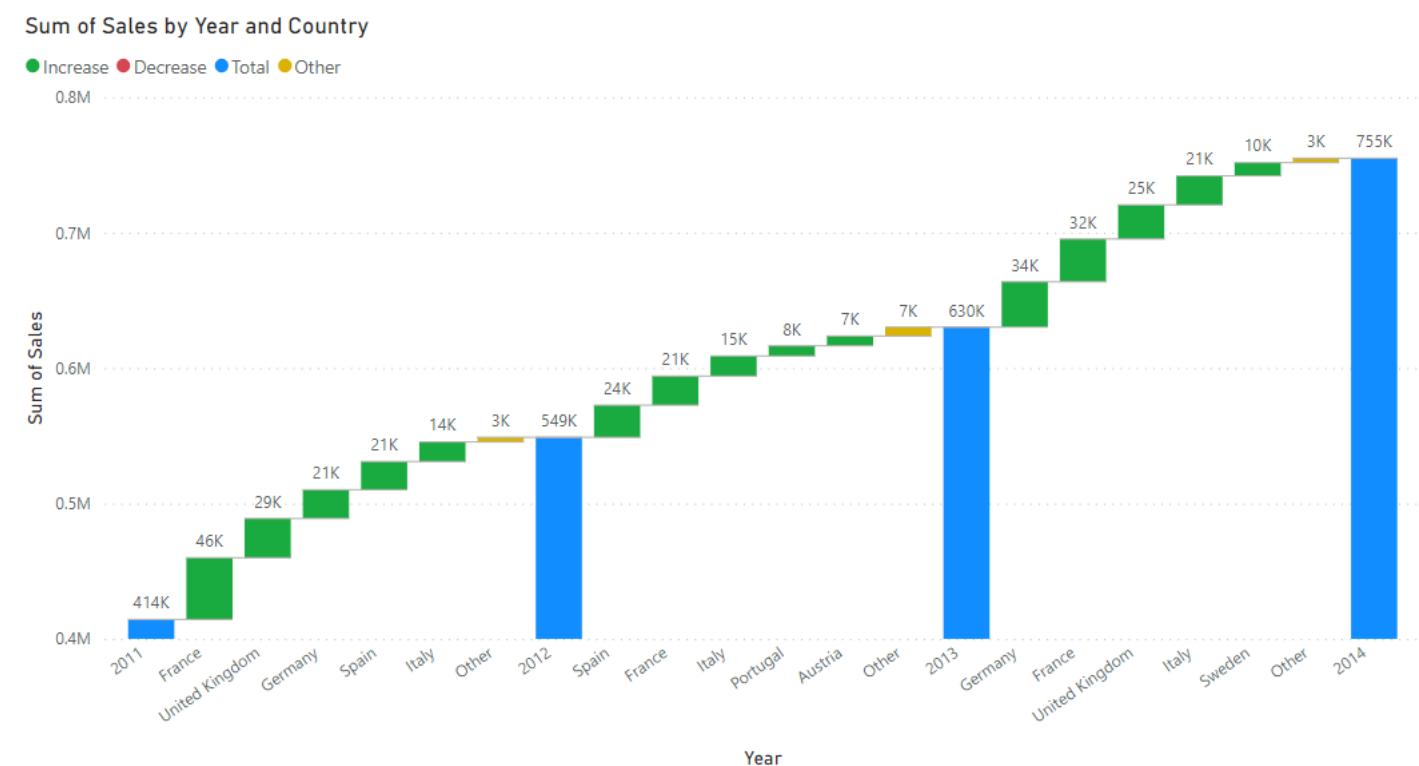
Let's Take Example live

Waterfall Chart

A waterfall chart is used to show how initial values are increasing and decreasing gradually by a series of values to arrive at the final value.

WATERFALL CHART E.g.

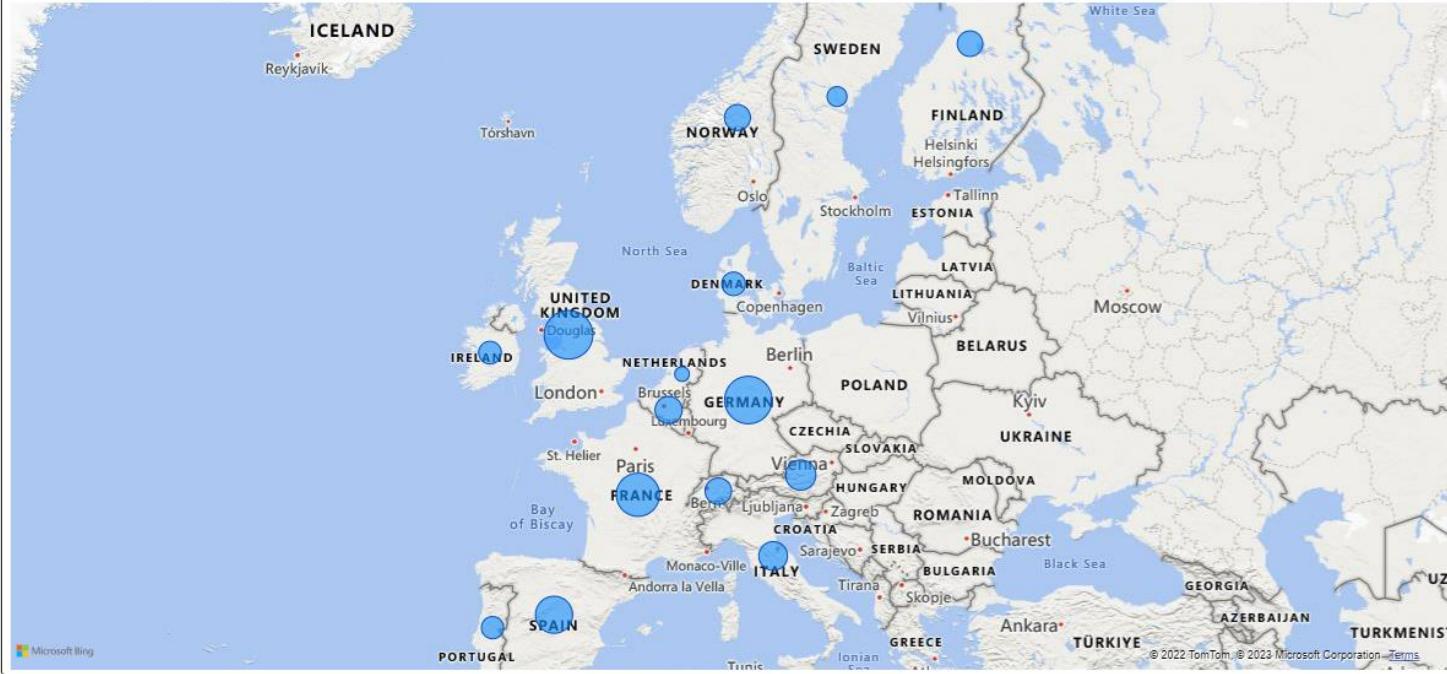
Let us consider an example in which you can plot your company's annual Sales in different countries, and you can add different sources of income and losses



Let's Take Example live

Maps

Sum of Profit by Country



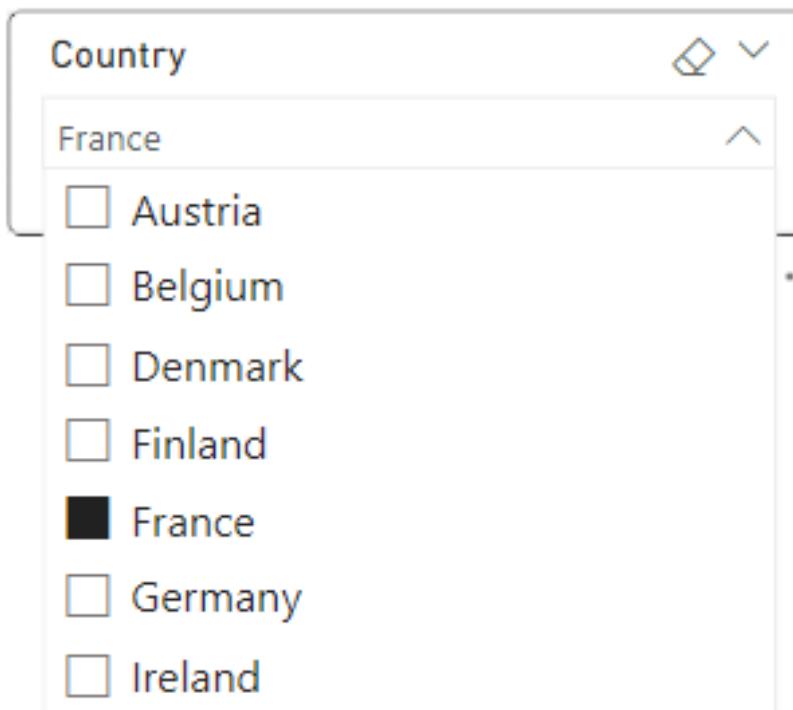
Sum of Sales by Country



Let's Take Example live

Slicers Charts

Slicers charts are visual filters. Using slicers, you can filter or sort your data by clicking on the type of data you want. In the below example, you can see all-region sales. In case if you want to see particular region sales, then click on that region, and it shows the specific region's sales



Let's Take Example live

Treemaps display hierarchical data set in a nested rectangle. At each level, hierarchy is represented by a color. The size of the space in the rectangle depends on the data values. The rectangular boxes are arranged in size from top left to bottom right.

Tree Maps E.g.

For example, you are analyzing your Quantity, and you have Sales for Each States ,Bigger the size means Maximum Sales

Let's Take Example live



Table

A table is a grid that contains the related data in a series of rows and columns. Tables are useful if you are comparing the same category for many values.

Table E.g.

In the below example, you can see the same category having multiple measures to compare.

Let's Take Example live

Category	Country	Product Name	Quantity	Discount	Sales	Profit
Furniture	France	Advantus Clock, Duo Pack	6	0.00	309	37
Furniture	France	Advantus Clock, Ergonomic	2	0.00	100	1
Furniture	France	Advantus Door Stop, Black	4	0.00	180	38
Furniture	France	Advantus Door Stop, Ergonomic	8	0.00	350	109
Furniture	France	Advantus Frame, Black	8	0.00	889	177
Furniture	France	Advantus Frame, Durable	12	0.00	1,297	143
Furniture	France	Advantus Frame, Ergonomic	4	0.00	439	140
Furniture	France	Advantus Light Bulb, Duo Pack	2	0.00	40	8
Furniture	France	Advantus Light Bulb, Durable	3	0.00	51	12
Furniture	France	Advantus Photo Frame, Duo Pack	1	0.00	53	20
Furniture	France	Advantus Stacking Tray, Ergonomic	5	0.50	85	2
Furniture	France	Barricks Coffee Table, Adjustable Height	6	0.35	1,184	-182
Furniture	France	Barricks Conference Table, Adjustable Height	4	0.35	2,364	-218
Furniture	France	Barricks Round Table, Rectangular	5	0.35	1,622	-624
Furniture	France	Barricks Round Table, with Bottom Storage	5	0.35	1,630	-802
Furniture	France	Bevis Computer Table, with Bottom Storage	4	0.35	1,291	-40
Furniture	France	Bevis Conference Table, with Bottom Storage	2	0.35	1,201	-148
Furniture	France	Bevis Round Table, Adjustable Height	3	0.35	1,015	-500
Furniture	France	Bevis Round Table, with Bottom Storage	2	0.35	674	-187
Furniture	France	Bevis Training Table, Adjustable Height	5	0.35	1,096	-422
Furniture	France	Bush 3-Shelf Cabinet, Metal	4	0.10	514	108
Total			7329	147.00	6,09,683	70,067



A Matrix chart shows the relation between two or more variables in a data set. It is mainly made up of columns and rows to represent the data in the grid format. At least two variables are required to create a matrix chart if there is any third or fourth variable, and color or other dimensions that can be added to the matrix to represent the data.

Matrix Chart E.g.

The below matrix chart represents the company's revenue in different years with other factors.

Year	Consumer	Corporate	Home Office	Total
2011	23,740	19,473	11,274	54,487
January	-1,012	292	969	249
February	-1,809	2,846	-237	800
March	2,812	738	492	4,042
April	2,308	981	68	3,357
May	62	1,326	201	1,589
June	3,057	1,680	1,208	5,945
July	907	735	418	2,060
August	4,371	1,629	172	6,172
September	4,740	5,327	1,859	11,926
October	1,055	124	739	1,918
November	5,041	374	1,784	7,199
December	2,208	3,421	3,601	9,230
2012	38,749	17,849	9,625	66,223
2013	39,797	25,688	11,715	77,200
2014	45,161	29,624	10,545	85,330
Total	1,47,447	92,634	43,159	2,83,240

Let's Take Example live





Module 05

Types of Business and Data Understanding

How To Analyse FMCG Business ?

A FMCG company has to select such a business model out of which it can sell maximum products and make profit. Brand building of products and innovation of products as well as keeping the standard of the products in this competitive market are the most important steps of a FMCG company. Selling branded products in the market is easier than the unbranded products.

FMCG means Fast-Moving consumer goods. The direct-to-consumer business encompasses highly demanding products, sells rapidly, and comes at a very reasonable price. These are also known as Consumer packaged goods (CPG). The products in these industries are very fast-moving as they are convenient to deliver and sell very quickly from the stores and supermarkets because of the daily usage in our life.

Success of FMCG Business Model Depends on:

Create a brand of the products to identify it **Separate Entity** and **Innovate New Products** as per **Market Demand**.

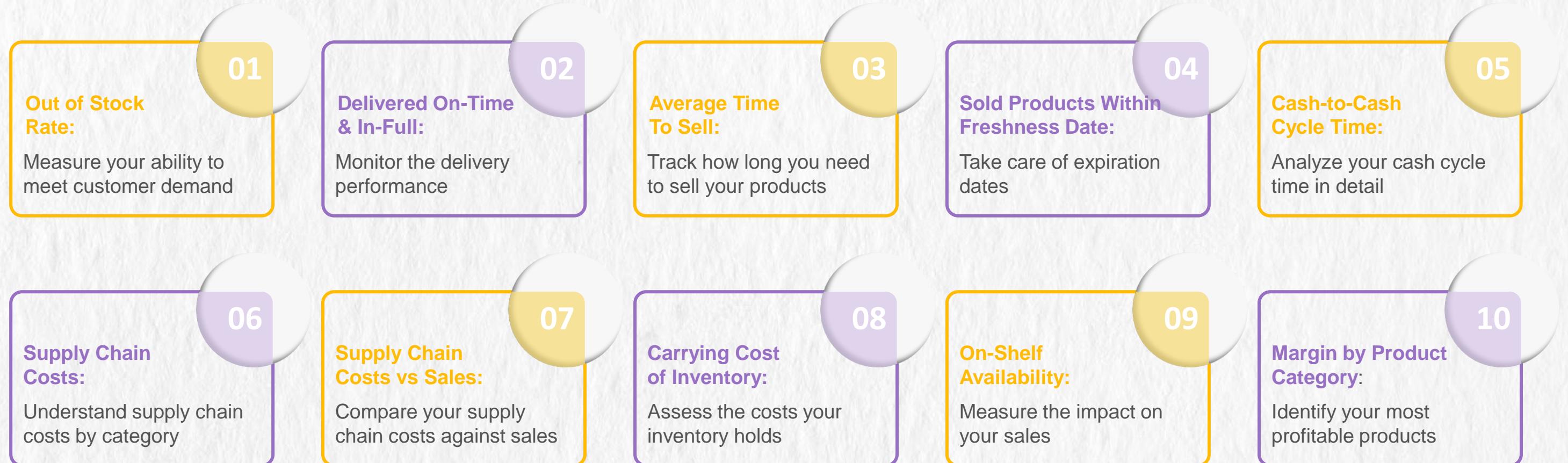
Building up of Relation with **Retailers** and **Grocers** to connect with the customers **Need** and **Behavior**. Deploy **Distributors** for **Supplying products Efficiently**.

Capturing of markets by **continuous Market Research** and to find out **Prospective Customers**.

Minimization of **Overall Cost** by changing their **Operation Model**. Now their following the way of **Centralisation** to cut their **Cost down**.

To increase **Online Sale** they should come forward to **Digital Marketing** and **Advertise their Products** in **Social Media Platforms**.

FMCG Some Metrics To Measure



Top Product ?



Highest Margin Product ?

Product Range



Number of SKUs ?



How To Analyse IT Company

FINKARO



All Terminology
of it ?



Projects Delivered on
Budget ?



Contribution of
Services

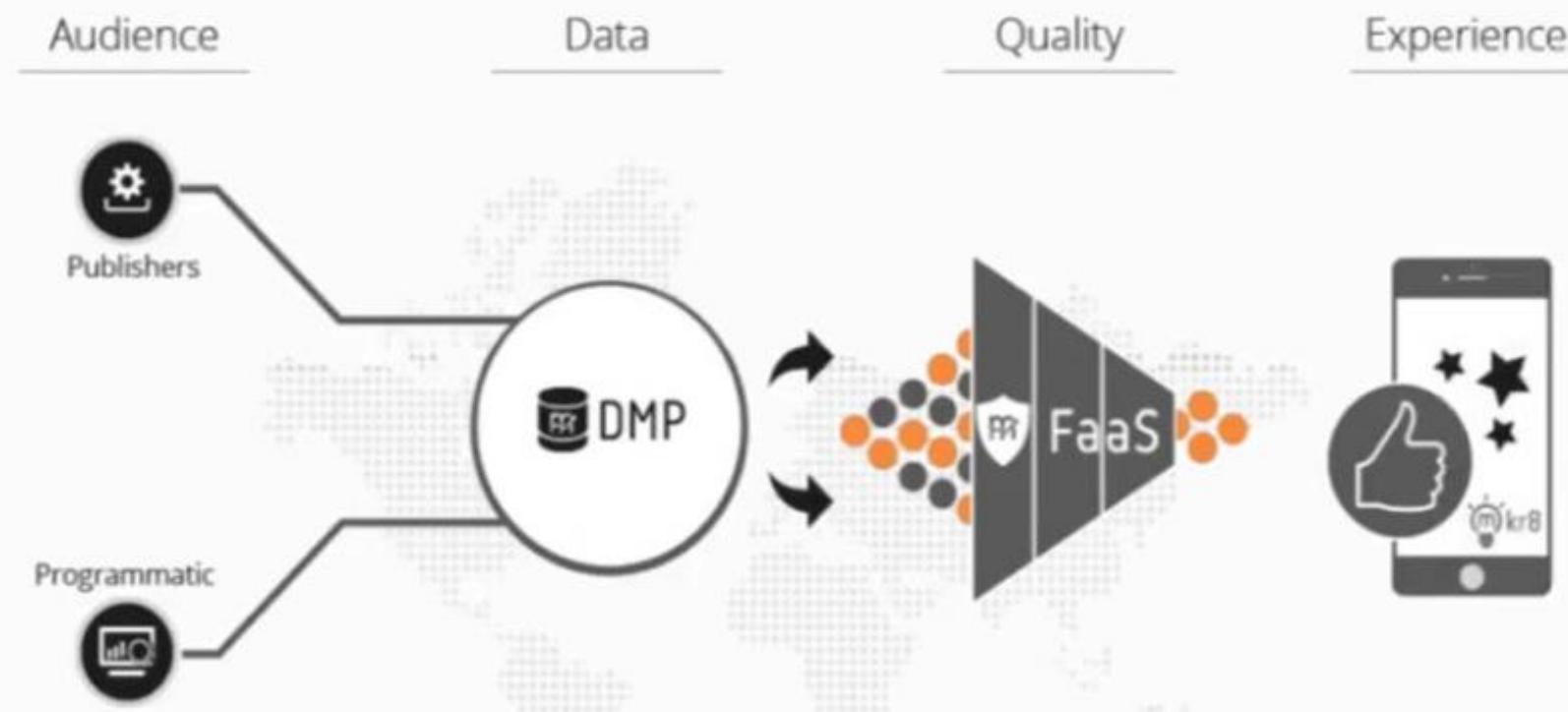


Unsolved Tickets per
Employee



Attrition
Rate ?

Consumer Intelligence Driven Mobile Marketing Platform



There are 100's of Business



CHEMICAL
COMPANY



PHARMA
COMPANY



HOSPITAL



CEMENT
COMPANY



REAL-ESTATE



AUTOMOBILE
COMPANY



BANKING



AMC



TOURS &
TRAVEL



HR
MANAGEMENT

Preparation of Dashboard

Module 06

Understand the Data First and What Output You want To Derive ?

A	B	C	D	E	F	G	H	I	J	K	L	
1	Order ID	Order Date	Customer Name	City	Country	Region	Segment	Ship Date	Ship Mode	State	lon	lat
2	BN-2011-7407039	01-01-2011	Ruby Patel	Stockholm	Sweden	North	Home Office	05-01-2011	Economy Plus	Stockholm	18.06858	59.32932
3	AZ-2011-9050313	03-01-2011	Summer Hayward	Southport	United Kingdom	North	Consumer	07-01-2011	Economy	England	-3.01011	53.64571
4	AZ-2011-6674300	04-01-2011	Devin Huddleston	Valence	France	Central	Consumer	08-01-2011	Economy	Auvergne-Rhône-Alpes	4.89236	44.93339
5	BN-2011-2819714	04-01-2011	Mary Parker	Birmingham	United Kingdom	North	Corporate	09-01-2011	Economy	England	-1.8904	52.48624
6	AZ-2011-617423	05-01-2011	Daniel Burke	Echirolles	France	Central	Home Office	07-01-2011	Priority	Auvergne-Rhône-Alpes	5.718034	45.14215
7	AZ-2011-2918397	07-01-2011	Fredrick Beveridge	La Seyne-sur-Mer	France	Central	Corporate	08-01-2011	Priority	Provence-Alpes-Côte d'Azur	5.878219	43.10298
8	BN-2011-3248724	08-01-2011	Archer Hort	Toulouse	France	Central	Consumer	14-01-2011	Economy	Languedoc-Roussillon-Midi-Pyrénées	1.444209	43.60465
9	AZ-2011-6712797	11-01-2011	Evie Flockhart	Genoa	Italy	South	Consumer	16-01-2011	Economy	Liguria	8.946256	44.40565
10	AZ-2011-4827146	11-01-2011	Faith Greenwood	Vienna	Austria	Central	Consumer	15-01-2011	Economy	Vienna	16.37382	48.20817
11	AZ-2011-6439906	11-01-2011	Summer Hayward	Murcia	Spain	South	Consumer	15-01-2011	Economy	Murcia	-1.13065	37.99224
12	AZ-2011-7053593	11-01-2011	Gracie Powell	Woking	United Kingdom	North	Consumer	11-01-2011	Immediate	England	-0.56003	51.31677
13	AZ-2011-5702370	12-01-2011	Hershel Snyder	Lohne	Germany	Central	Corporate	19-01-2011	Economy	Lower Saxony	8.722086	52.19414
14	AZ-2011-9927716	12-01-2011	Julia Martell	Leicester	United Kingdom	North	Home Office	17-01-2011	Economy	England	-1.13976	52.63688
15	AZ-2011-2222024	12-01-2011	Viola Watson	Sheffield	United Kingdom	North	Consumer	15-01-2011	Priority	England	-1.47009	53.38113
16	BN-2011-4913858	13-01-2011	Julian Dobie	Dordrecht	Netherlands	Central	Consumer	19-01-2011	Economy	South Holland	4.690093	51.8133
17	BN-2011-2807470	13-01-2011	Rose Heap	Gothenburg	Sweden	North	Consumer	20-01-2011	Economy	Västra Götaland	11.97456	57.70887
18	AZ-2011-5960662	14-01-2011	Ella Troy	Vienna	Austria	Central	Home Office	19-01-2011	Economy	Vienna	16.37382	48.20817
19	AZ-2011-7675351	15-01-2011	Everett Dunbar	Langen	Germany	Central	Corporate	20-01-2011	Economy Plus	Lower Saxony	8.663401	49.99147
20	BN-2011-3770060	17-01-2011	Georgia Bermingham	Copenhagen	Denmark	North	Home Office	23-01-2011	Economy	Hovedstaden	12.56834	55.6761
21	AZ-2011-7419210	18-01-2011	Christopher Goold	Gandia	Spain	South	Corporate	21-01-2011	Priority	Valenciana	-0.18447	38.96803
22	AZ-2011-1816950	18-01-2011	John Baca	Esbjerg	Denmark	North	Consumer	23-01-2011	Economy Plus	South Denmark	8.459405	55.47647
23	AZ-2011-3059419	19-01-2011	Kai Leonard	Sesto San Giovanni	Italy	South	Corporate	21-01-2011	Priority	Lombardy	9.225688	45.53282
24	AZ-2011-5342265	19-01-2011	Jennifer Mattingly	Trapani	Italy	South	Home Office	20-01-2011	Priority	Sicily	12.5372	38.01762
25	AZ-2011-2002251	20-01-2011	Nathan Iqbal	Villiers-sur-Marne	France	Central	Consumer	25-01-2011	Economy	Ile-de-France	2.546798	48.82579
26	AZ-2011-5357101	21-01-2011	Noah Chamberlain	Bielefeld	Germany	Central	Consumer	26-01-2011	Economy	North Rhine-Westphalia	8.532471	52.03023
27	AZ-2011-2245674	22-01-2011	Dylan Disney	Leuven	Belgium	Central	Home Office	26-01-2011	Economy	Flemish Brabant	4.700518	50.87984
28	AZ-2011-8034411	22-01-2011	Melissa Bean	Prato	Italy	South	Home Office	26-01-2011	Economy	Tuscany	11.10223	43.8777
29	AZ-2011-6684426	24-01-2011	Vaughn Gibbs	Gela	Italy	South	Home Office	26-01-2011	Economy Plus	Sicily	14.24035	37.07415



Understand the Data First and What Output You want To Derive ?

1	Order ID	Product Name	Discount	Sales	Profit	Quantity	Category	Sub-Category
2	BN-2011-7407039	Enermax Note Cards, Premium	0.5	\$45.00	-\$26.00	3	Office Supplies	Paper
3	AZ-2011-9050313	Dania Corner Shelving, Traditional	0	\$854.00	\$290.00	7	Furniture	Bookcases
4	AZ-2011-6674300	Binney & Smith Sketch Pad, Easy-Erase	0	\$140.00	\$21.00	3	Office Supplies	Art
5	BN-2011-2819714	Boston Markers, Easy-Erase	0.5	\$27.00	-\$22.00	2	Office Supplies	Art
6	BN-2011-2819714	Eldon Folders, Single Width	0.5	\$17.00	-\$1.00	2	Office Supplies	Storage
7	AZ-2011-617423	Binney & Smith Pencil Sharpener, Water Col	0	\$90.00	\$21.00	3	Office Supplies	Art
8	AZ-2011-617423	Sanford Canvas, Fluorescent	0	\$207.00	\$77.00	4	Office Supplies	Art
9	AZ-2011-2918397	Bush Floating Shelf Set, Pine	0.1	\$155.00	\$36.00	1	Furniture	Bookcases
10	AZ-2011-2918397	Accos Thumb Tacks, Assorted Sizes	0	\$33.00	\$2.00	3	Office Supplies	Fasteners
11	AZ-2011-2918397	Smead Lockers, Industrial	0.1	\$716.00	\$143.00	4	Office Supplies	Storage
12	BN-2011-3248724	Ikea Classic Bookcase, Metal	0.6	\$987.00	-\$1,012.00	6	Furniture	Bookcases
13	BN-2011-3248724	Binney & Smith Sketch Pad, Blue	0.5	\$116.00	-\$56.00	5	Office Supplies	Art
14	AZ-2011-7053593	SAFCO Executive Leather Armchair, Red	0	\$1,384.00	\$14.00	3	Furniture	Chairs
15	AZ-2011-7053593	Binney & Smith Canvas, Blue	0	\$103.00	\$20.00	2	Office Supplies	Art
16	AZ-2011-6439906	Bevis Training Table, with Bottom Storage	0.6	\$268.00	-\$342.00	2	Furniture	Tables
17	AZ-2011-4827146	Boston Canvas, Fluorescent	0	\$55.00	\$10.00	1	Office Supplies	Art
18	AZ-2011-4827146	Smead Trays, Single Width	0	\$97.00	\$31.00	2	Office Supplies	Storage
19	AZ-2011-6439906	Novimex File Folder Labels, Alphabetical	0	\$40.00	\$6.00	5	Office Supplies	Labels
20	AZ-2011-6712797	Ibico Hole Reinforcements, Recycled	0	\$22.00	\$7.00	3	Office Supplies	Binders
21	AZ-2011-2222024	Green Bar Note Cards, Multicolor	0.5	\$34.00	-\$6.00	2	Office Supplies	Paper
22	AZ-2011-9927716	Hon Chairmat, Adjustable	0	\$290.00	\$70.00	5	Furniture	Chairs
23	AZ-2011-5702370	Ikea Stackable Bookrack, Traditional	0.1	\$552.00	\$165.00	5	Furniture	Bookcases
24	AZ-2011-5702370	Binney & Smith Canvas, Blue	0	\$257.00	\$49.00	5	Office Supplies	Art
25	AZ-2011-5702370	Ibico Index Tab, Clear	0	\$17.00	\$6.00	2	Office Supplies	Binders
26	AZ-2011-5702370	Epson Printer, White	0	\$522.00	\$21.00	2	Technology	Machines
27	BN-2011-4913858	Wilson Jones Hole Reinforcements, Durable	0.5	\$9.00	-\$3.00	3	Office Supplies	Binders
28	BN-2011-4913858	Harbour Creations Legal Exhibit Labels, Lase	0.5	\$22.00	-\$12.00	4	Office Supplies	Labels
29	BN-2011-4913858	Green Bar Cards & Envelopes, Multicolor	0.5	\$50.00	-\$38.00	2	Office Supplies	Paper

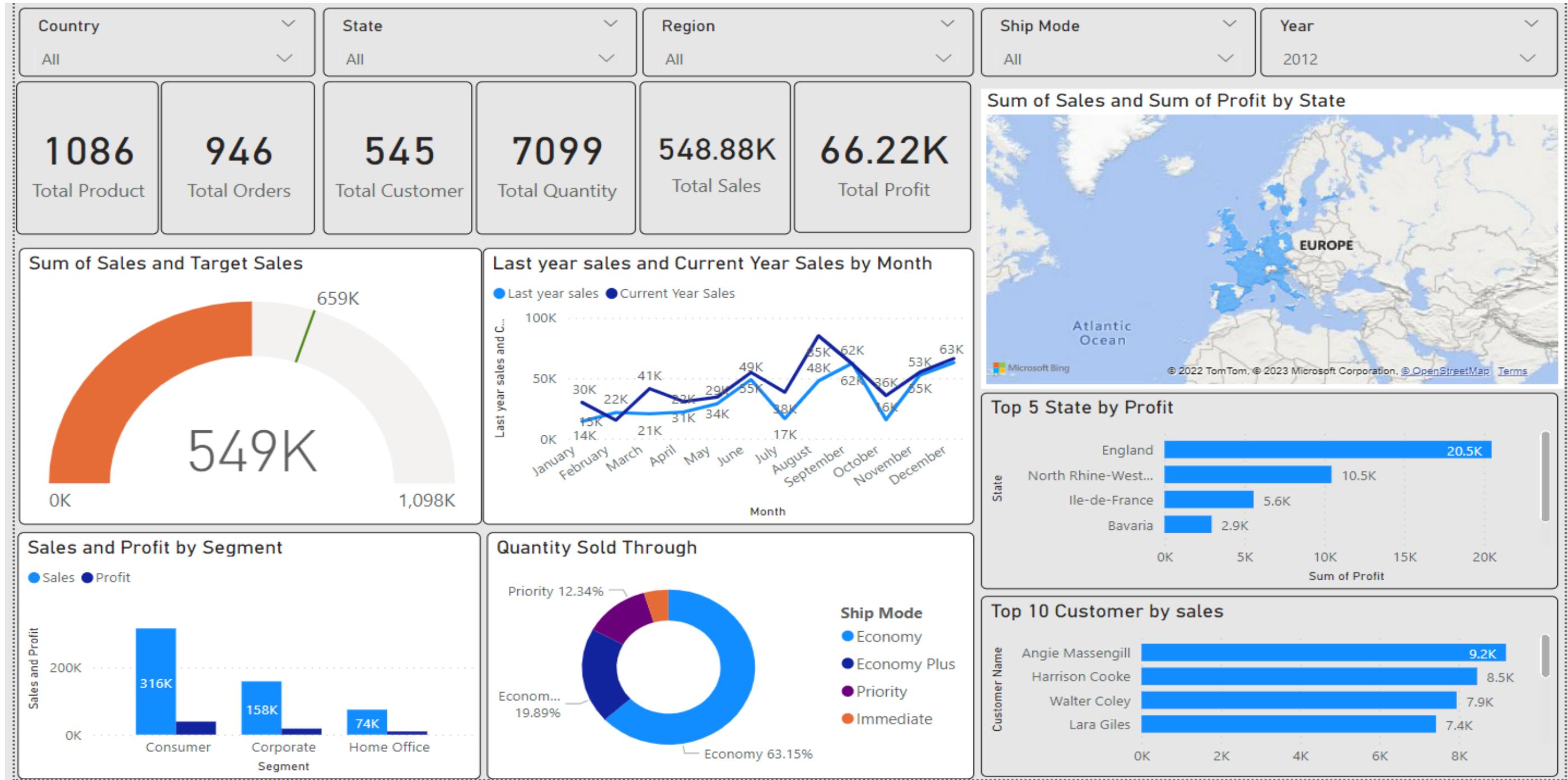


Prepare Dashboard For Following Insight

- 01 Show States where user can select and check the sales
- 02 Show Total Sales,PAT,Quantity
- 03 Trend of Sales over the Period
- 04 Show PAT by Category,Segment and Region
- 05 Show Profit By Sub-Category
- 06 Show Sub Category sales by Region
- 07 Format the Dashboard and Show

Sample Sales Dashboard

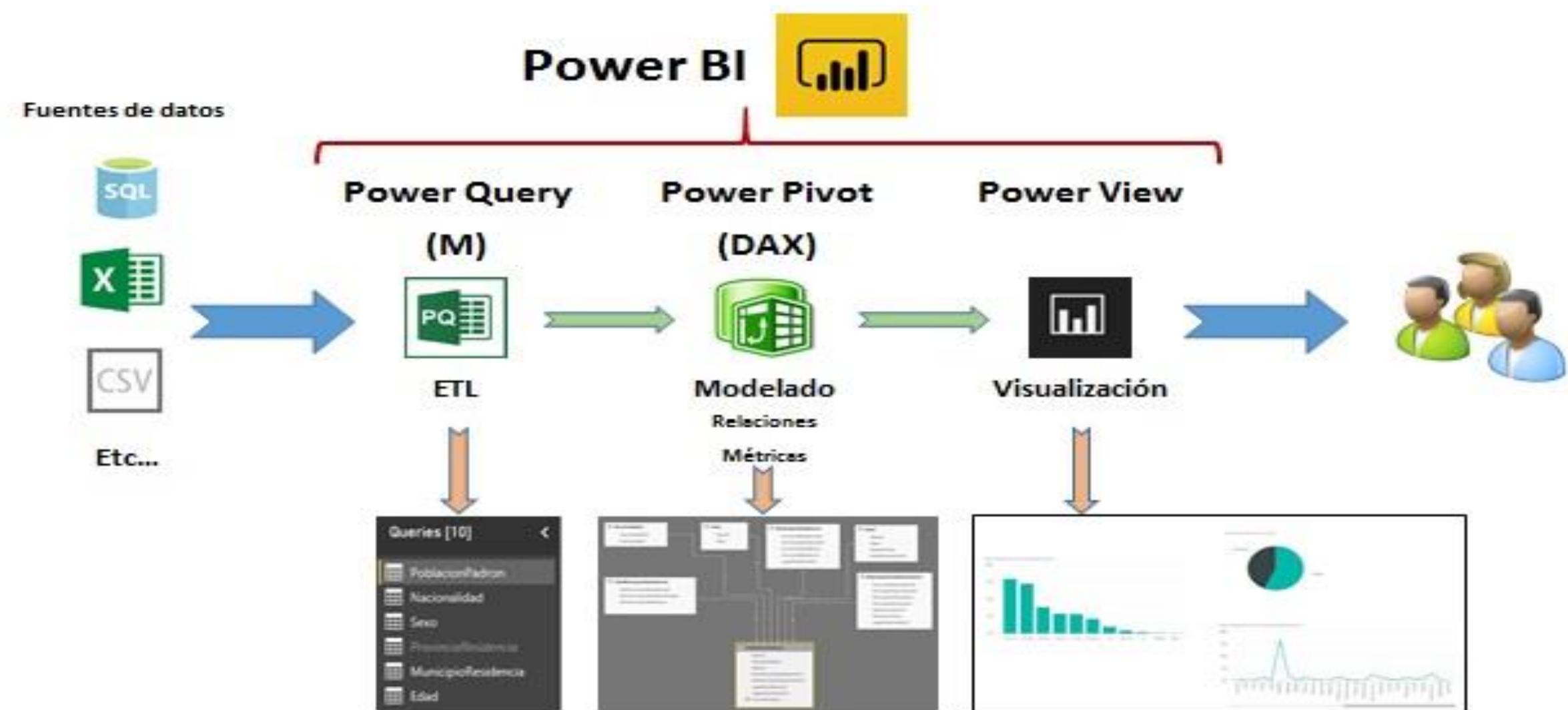
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Do You Think You Know Power BI Really ?

FINKARO

You Have Just Learnt 10%, Trust Me!!





Module 07

Dimension and Fact Table

What is a Data Warehouse?

A Data Warehouse is to be a **Database** that contains Data Integrated from **Multiple Source Systems**. It exists to **Support Reporting** and **Analysis** in the Organisation. It contains **Historical Data**, and is **Structured** in what is known as a **Star Schema**. It is optimized for **High Speed Loading**, and for Responding to **Queries Over Large Data Sets**

DESIGN OF A DATA WAREHOUSE



Dimension Tables facilitate the reality table or fact table to gather dimensions on that the measures needs to be taken.

A reality or fact table's record could be a combination of attributes from totally different dimension tables.

A Dim table is a unique table whereas fact table consist of duplicate values

Dimension Table

Product
Product_Key
Product_Name
Brand
Colour

Fact Table

Order_Mesure	
Product_Key	
Time_Key	
Store_Key	
Order_Dollars	Order_Quantity

Dimension Table

Time
Time_Key
Date
Day
Month

Product
Store_Key
City
Store_Name
Phone_no

Dimension Table

01

FACTS TABLES AND MEASURES

A Fact table holds rows of data containing the measures/numbers you wish to analyse. For example, a Sales fact table contains one row per invoice line item with sale amounts, discounts and other measures. A Fact table usually represents a business process or an event in a business process that you want to analyse. Fact tables are often defined by their grain. The grain of a fact table represents the most atomic level by which the facts may be analysed. The grain of a Sales fact table might be individual invoice line items.

02

DIMENSIONS AND ATTRIBUTES

A standard Dimension defines an entity in a business (e.g. Product, Customer etc), and groups the attributes of that entity together. A Dimension holds the attributes (i.e. fields) you want to analyse your facts by. E.g. Product Type, Product Colour etc. The attributes are used to constrain and group fact data when performing data warehousing queries. E.g. Sales Amounts Fact, where Product Colour = Silver. Other dimensions like Time and Calendar are common.

03

STAR SCHEMA

A Star Schema refers to the way Facts and Dimensions are related in a Data Warehouse. A Star Schema is organized around a central fact table that is joined to its dimension tables using foreign keys. The name star schema comes from the pattern formed by the entities and relationships when they are represented as an entity-relationship diagram. The fact table of a specific business activity (i.e. the Fact) is at the centre of the star schema and is surrounded by dimensional tables with data on the people, places, and things that come together to perform the business activity. These dimensional tables are the points of the star.

Fact Table

Sales The fact table will contain the measures of the business event (in this case Units Sold and Total Amount) and the foreign keys back to the associated Dimension members. The grain of this fact is one row per sale line item.

Sale_ID	Calendar_ID	Product_ID	Customer_ID	Region_ID	Units Sold	Total Amount
1	20130321	17	2	1234	1	\$ 500.00
2	20130406	21	3	1246	2	\$ 345.87
2	20130406	4	3	1246	1	\$ 12378.98

Dimension Table

Customers The Customer dimension contains 1 row per customer. Each row contains the attributes of that customer. Note that the values for the attributes are verbose descriptions, rather than codes (e.g. Male instead of say 1 for Male). The reason is that these values become column headings in a report, and a column heading of 1 is not very informative. This demonstrates one of the key differences between modelling for a data warehouse and an operational system. A data warehouse contains much data redundancy.

Customer_ID	Full Name	Gender	Club Member	Marital Status	Occupation
1	Brian Edge	Male	Is Club Member	Married	Fire Fighter
2	Fred Smith	Male	Is Not Club Member	Single	Police Man
3	Sally Jones	Female	Is Club Member	Married	Lawyer



Module 08



Data Modelling

1

Data modeling is the process of creating visual representations of the connections between data structures, with information about the individual attributes contained within those data structures.

2

When talking about data modeling in general, the term you will hear most often is the star schema. This is a widely adopted approach to designing data warehouses and relational databases and is the recommended approach to take in Power BI as well.

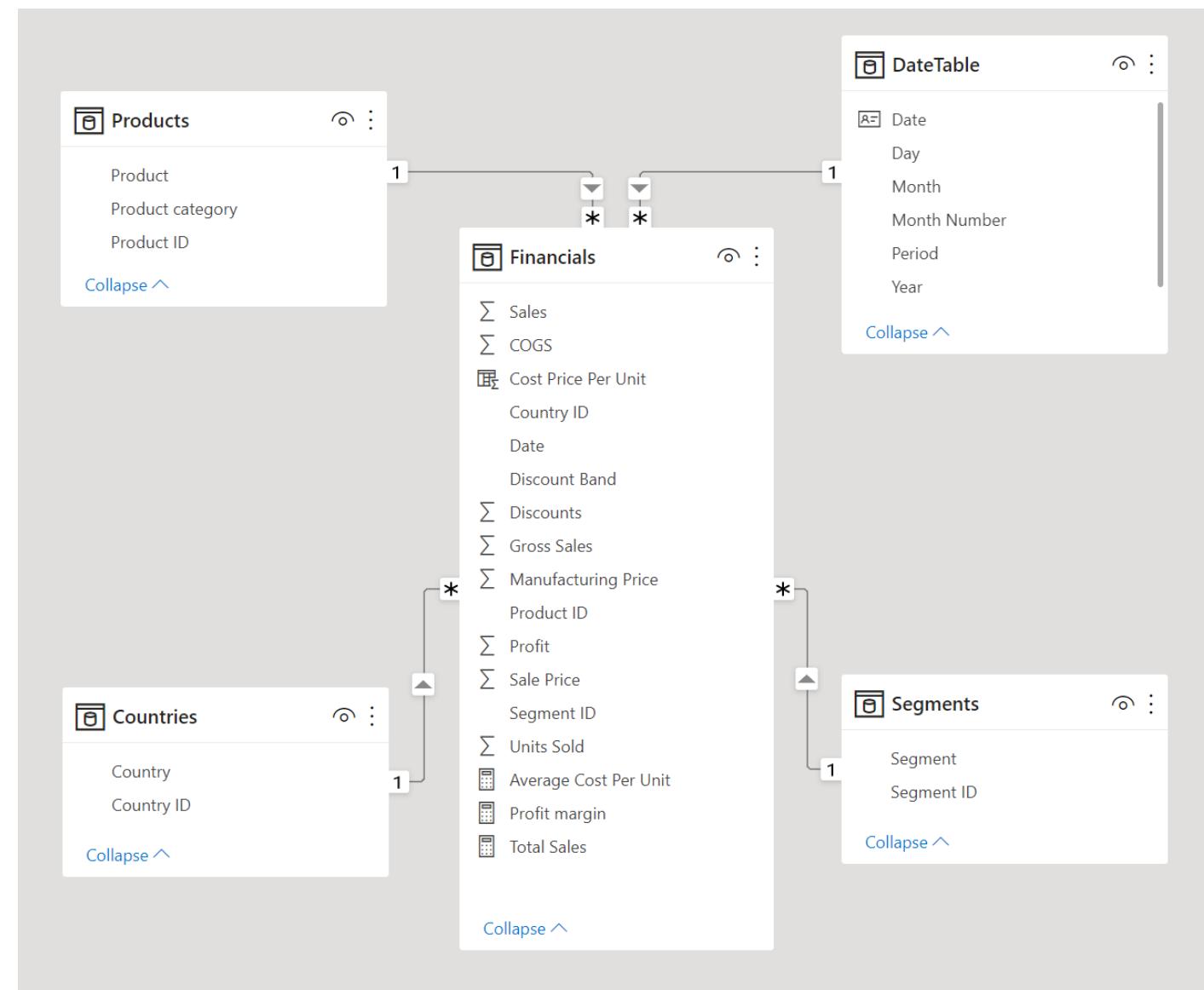
3

There are Two Main Benefits of using a Star Schema:

- **Usability:** A star schema makes your data model cleaner and more organized, and your report will be easier to use.
- **Performance:** Star schemas allow you to easily scale your report to very large volumes of data. DAX measures also calculate faster and the Power BI report refreshes faster overall.

How does a Star Schema Work?

A star schema is made up of a central fact table with multiple dimension tables branching off of this fact table, much like the appearance of a star. Ideally, it is good practice to have only one fact table in a data model. However, it is possible to include multiple fact tables in Power BI.



Types of Relationship

One can make Relationship between Different Tables and Link them

Types of Relationship

One to One

One to Many

Many to Many

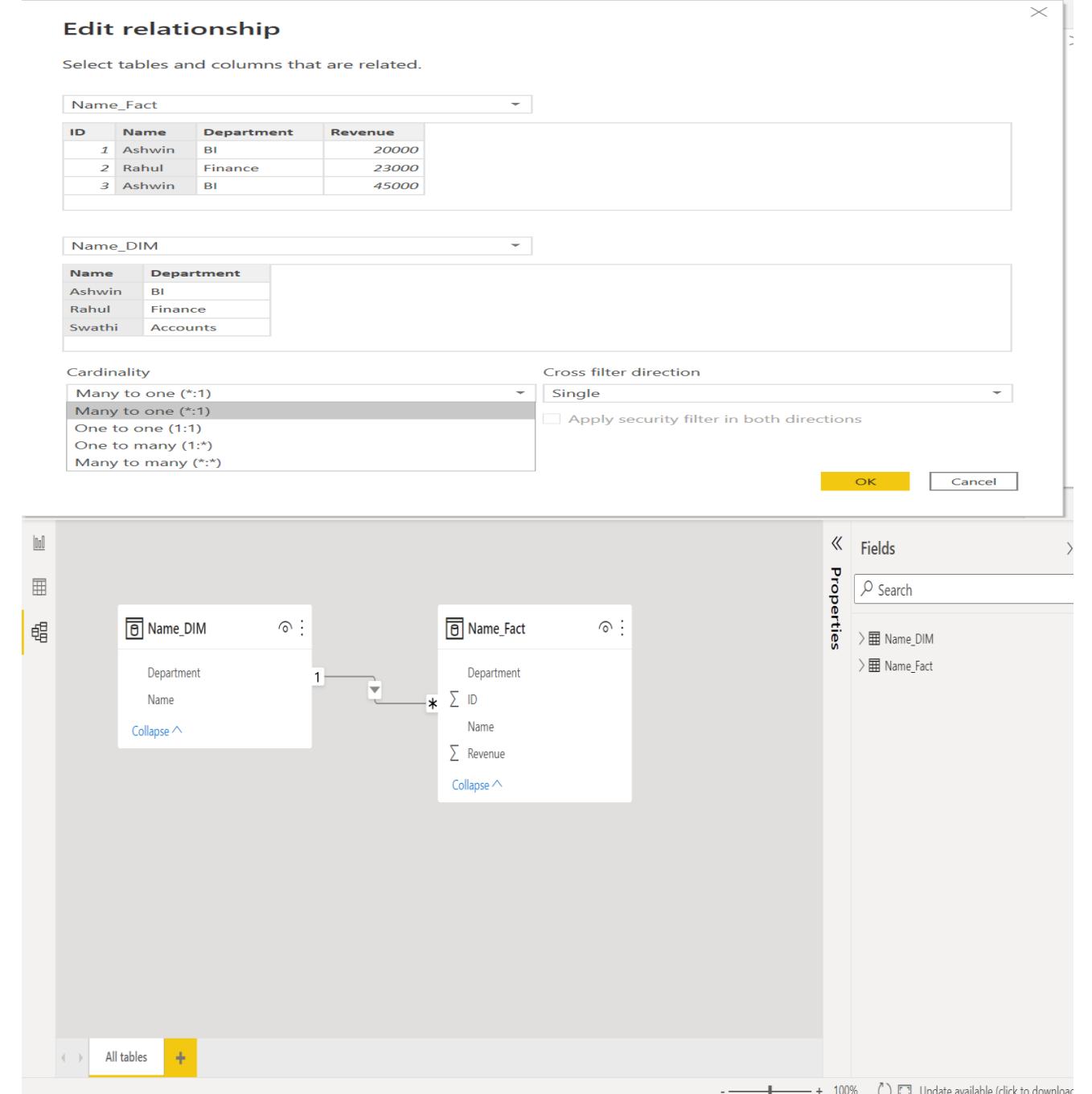
Many to One

One can also give Directions to a Relationship.

Types of Direction

Single

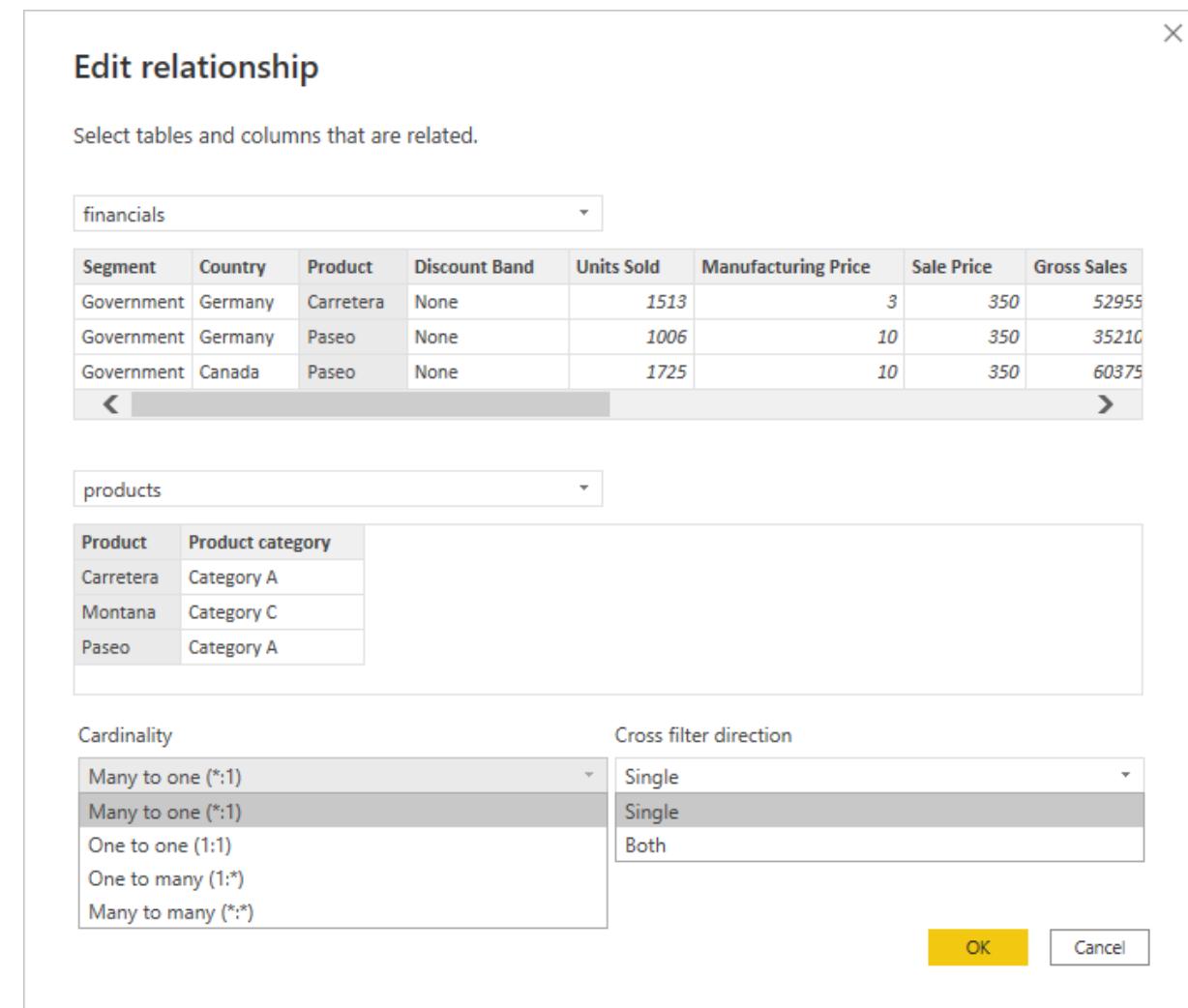
Both



How To Create Relationship

By default, Power BI will try to infer a relationship between tables; it doesn't always get this right, so you may wish to turn this feature off in the settings or delete any relationships that are created automatically. To edit the relationship, right-click the connecting line between them and select "Properties".

This window has 2 interesting options to choose from when defining a relationship: cardinality and cross filter direction. The choices for each of these options can have a big impact on the resulting report, so choose carefully. Let's break down each of these options.



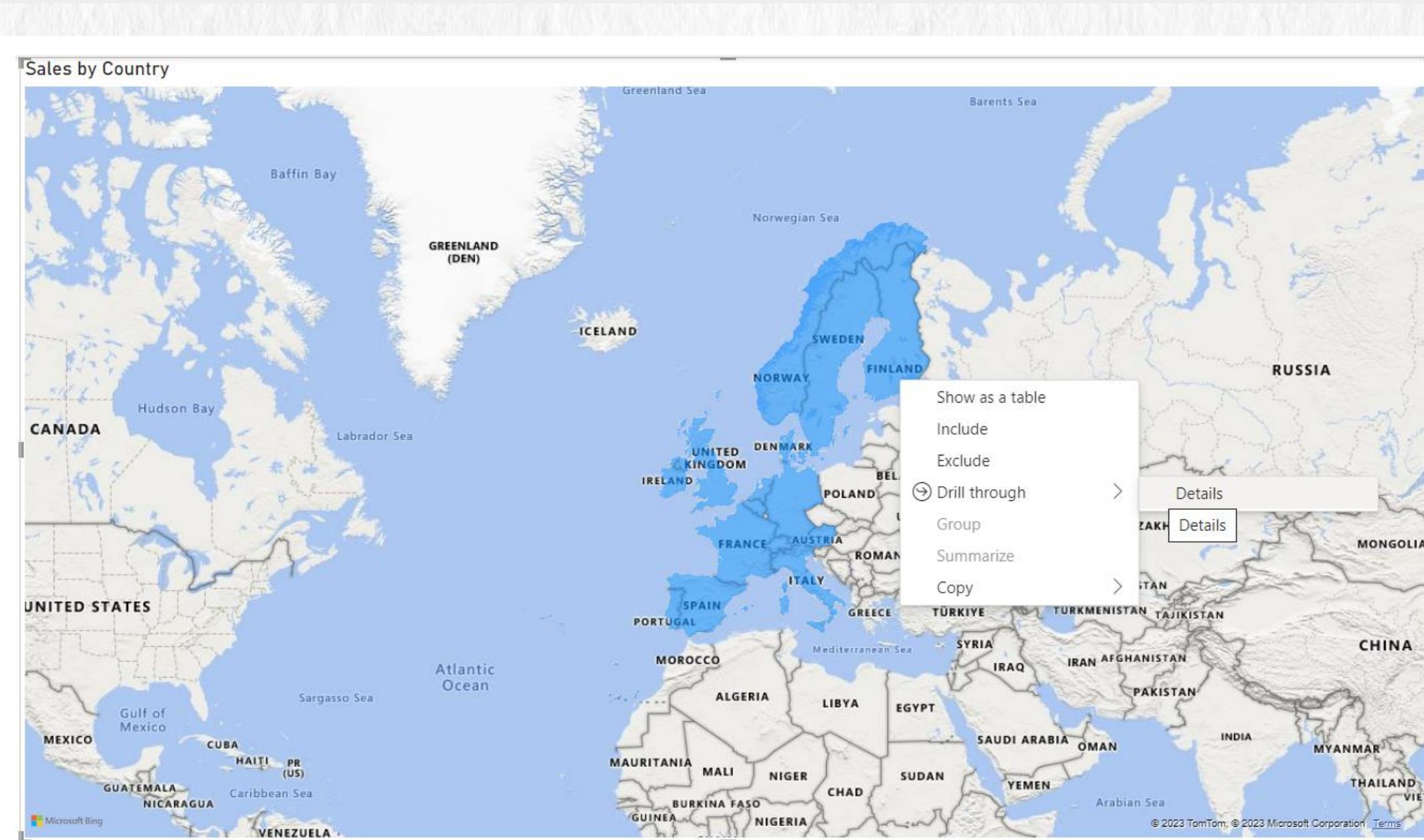


Module 09

Advanced Features of Power BI

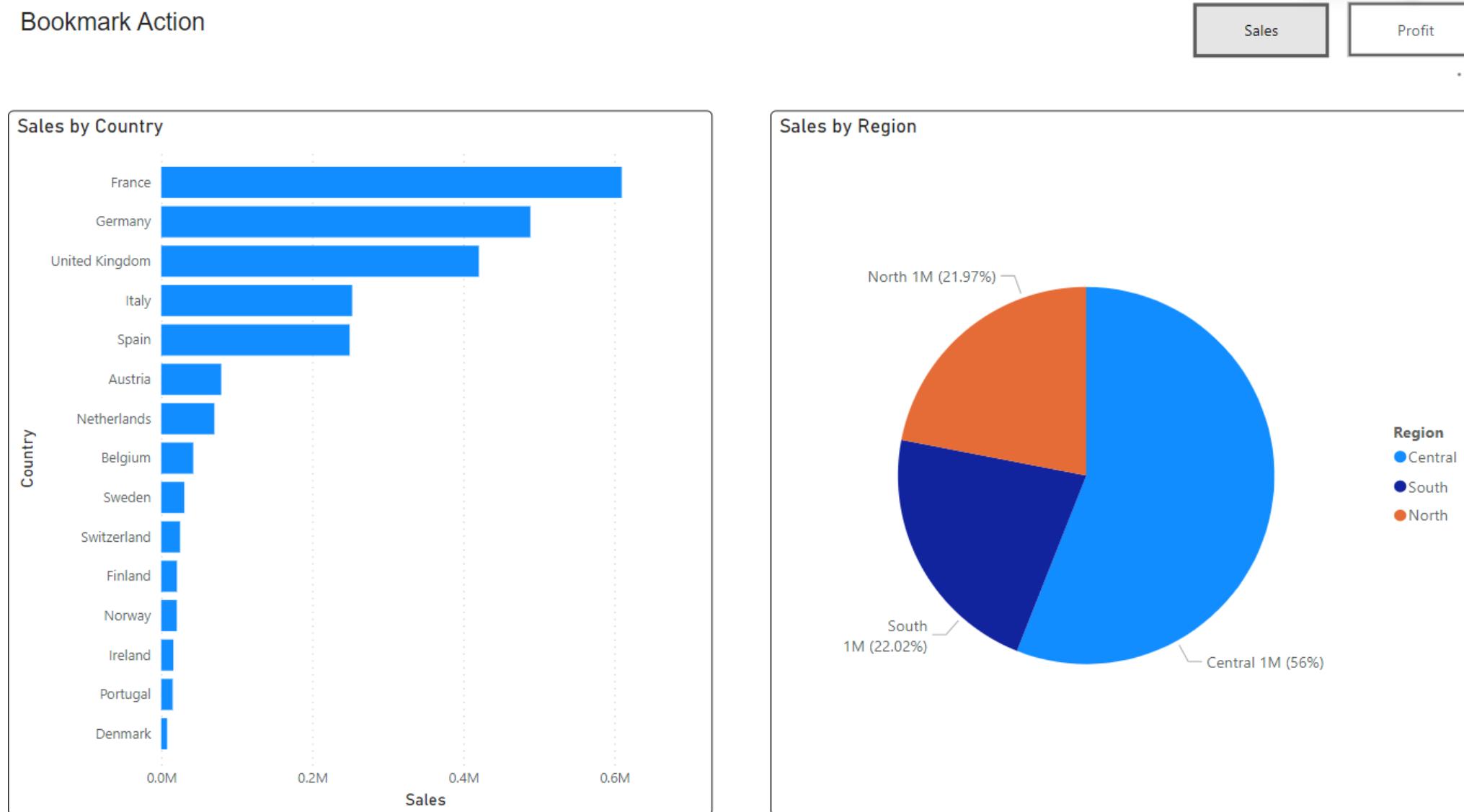
Drill Through

The drill through function in Power BI lets you select a value in a visual and drill through to a different page showing the details for the value you have selected.

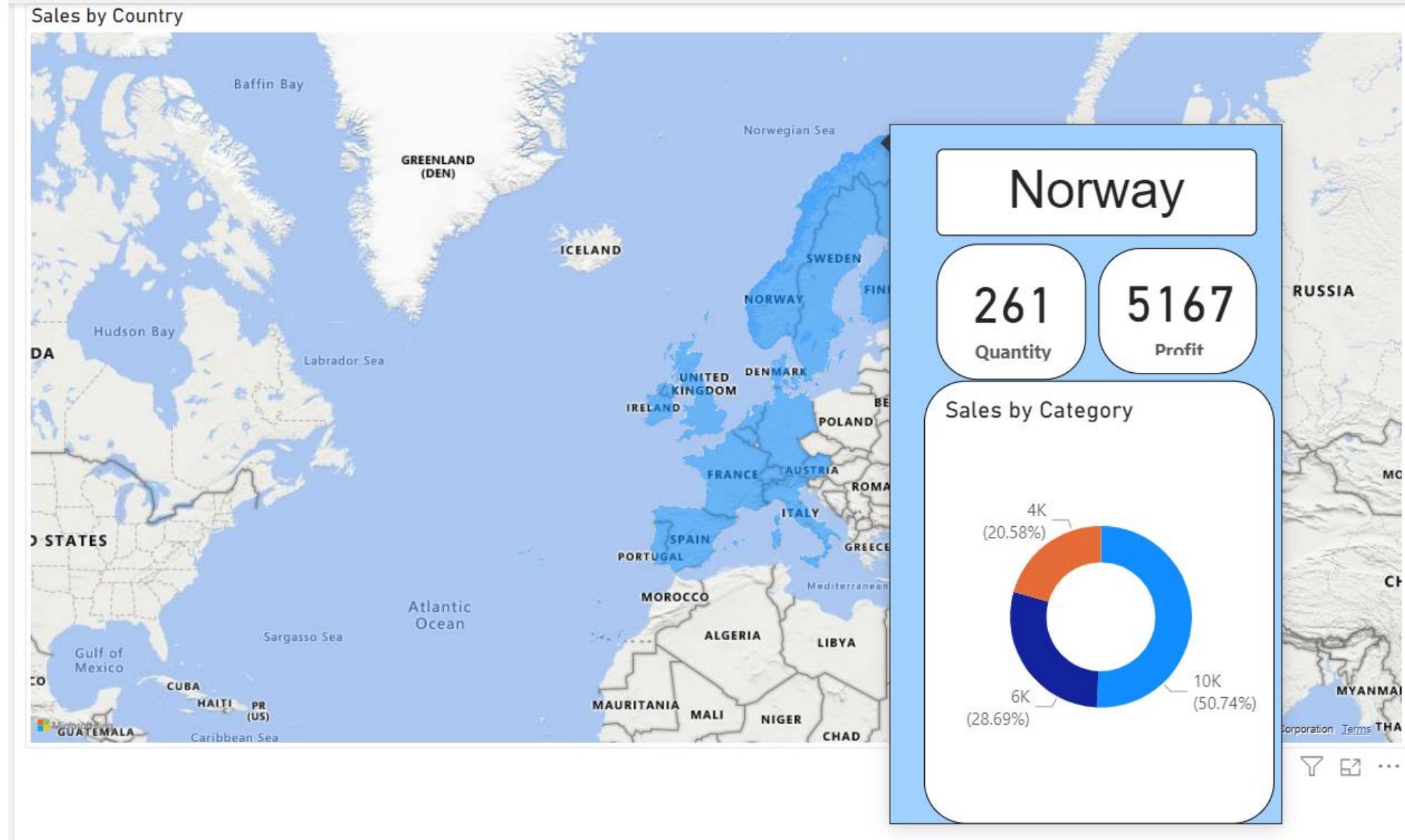


Tab Button (Book Mark)

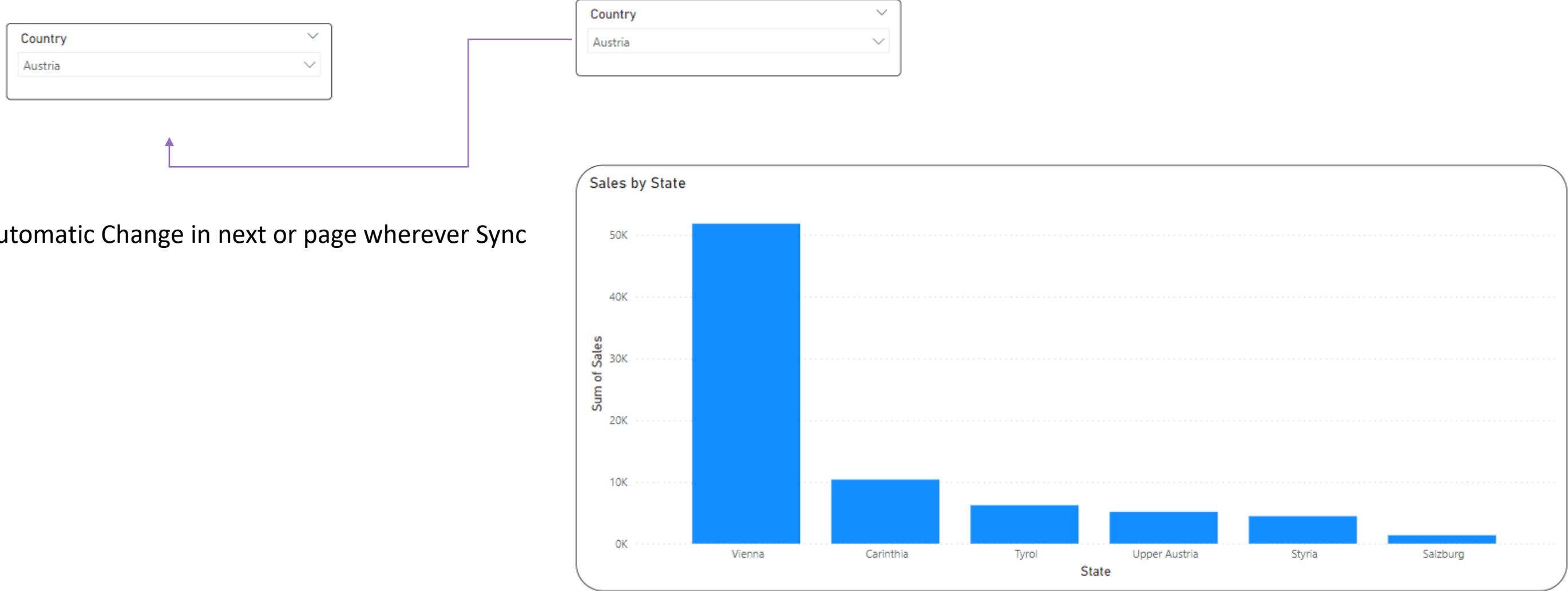
Bookmarks in Power BI let you save views and settings in your reports, and build story-like presentations.



A tooltip is a short, informative message that appears when a user interacts with a graphical user interface element. Its primary purpose is to provide the user with additional information about a page element or feature

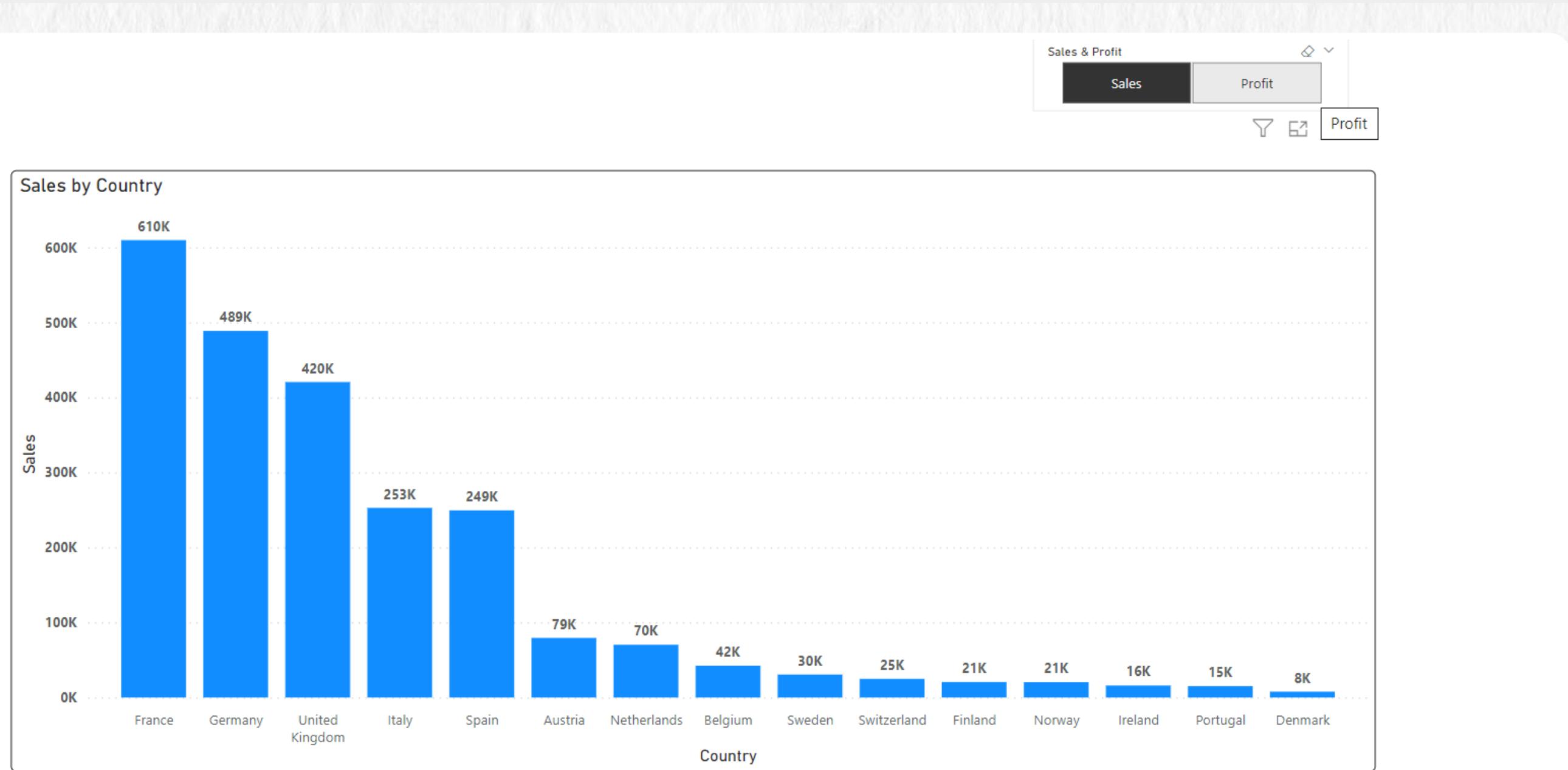


This feature allows this user to sync the newly created slicer for all other pages of the report.



Parameters Field

Parameters give you the flexibility to dynamically change the output of your queries depending on their value,



Dynamic Header

The table columns can have either a static header title or a dynamic header title. Dynamic header titles text will be defined based on a value (the language) selected by the user on a slicer. Therefore, if that value changes, the header title will dynamically change as well

2012 Sales for All Country for All State

549K

Total Sales

66K

Total Profit

Change Year

Change Country Name

Change States



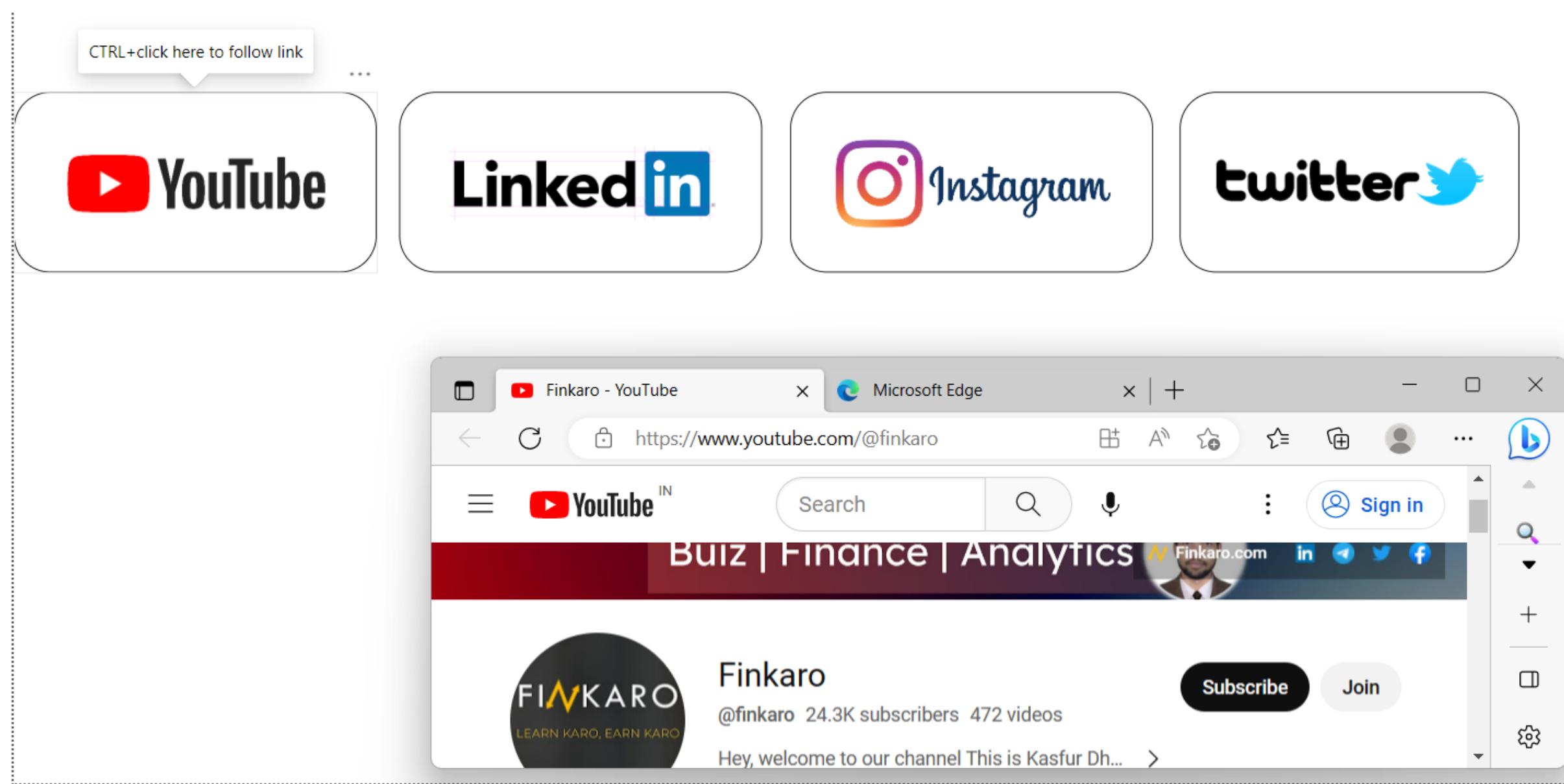
Animated Charts

Two Data changing the information and telling the story, You can refer Top10 YouTube channel showing various data trend
GDP,Inflation,Population etc

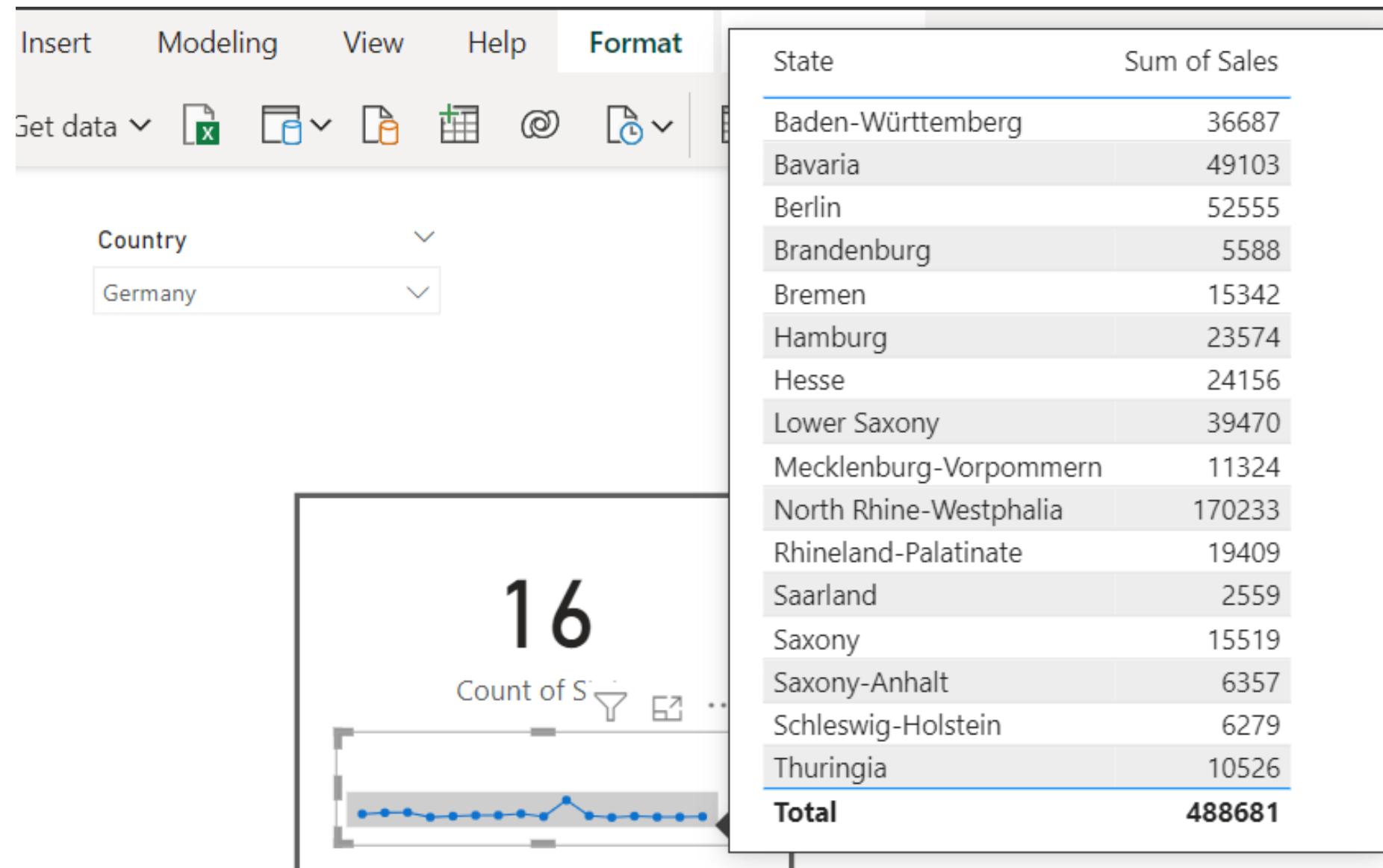


Web URL Action

When you want to link to something where your client can access your Website



When you want to show some information on specific timeline any event one can use Sparkline



In the Beginning we do not know what information supposed to be derived from the given datasets ,so Q&A Visuals can help to understand the same

Ask a question about your data

Try one of these to get started

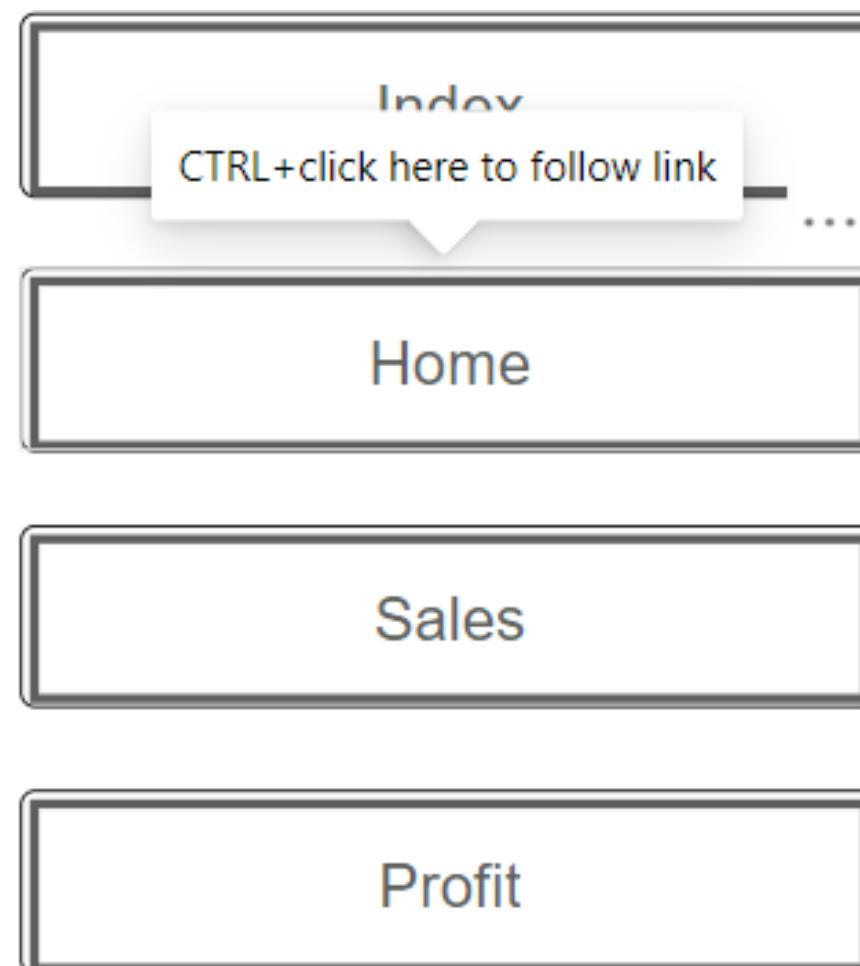
[average lon](#) [number of cities](#) [total lon over time](#) [total lat by order date](#) [most recent list of orders](#) [list of orders sorted by city](#)

[sort order breakdowns by profit](#) [total sale over time](#) [show cities and regions](#) [show ship modes and lon](#)

Show fewer suggestions

Page Navigation

Sometime we have 100's of Report so one can not keep checking each tab ,so we can create a index page which will directly take us to specific page



Conditional Charts

Conditional column chart are used to identify Performance ,Variance,Comparision with Benchmark Created



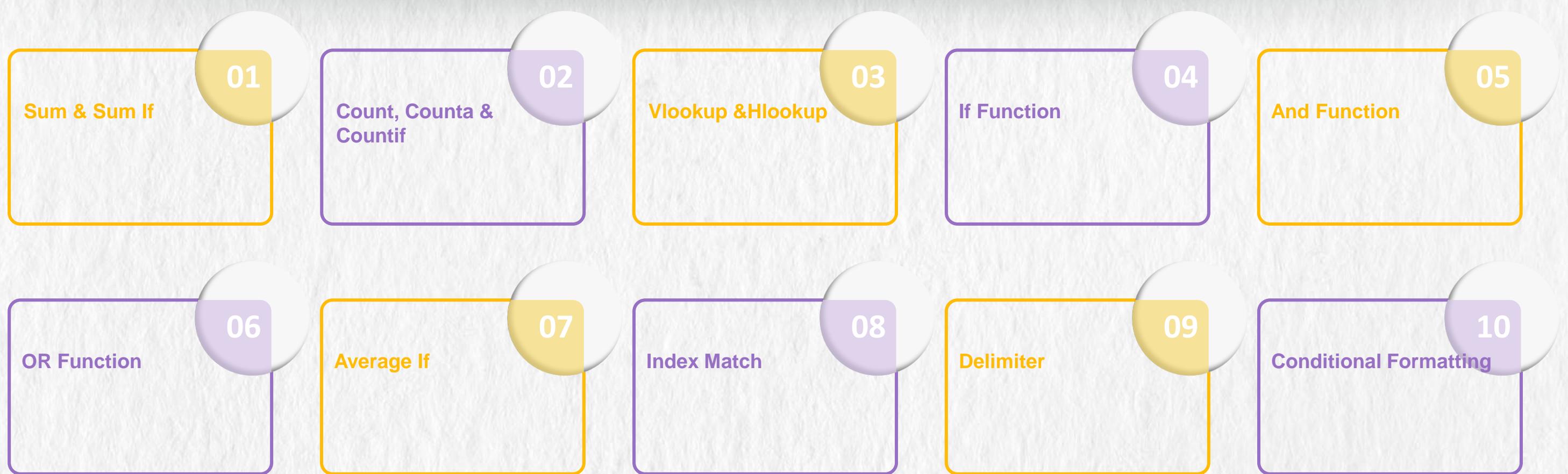


Module 10

Important Excel Function For BI/BA

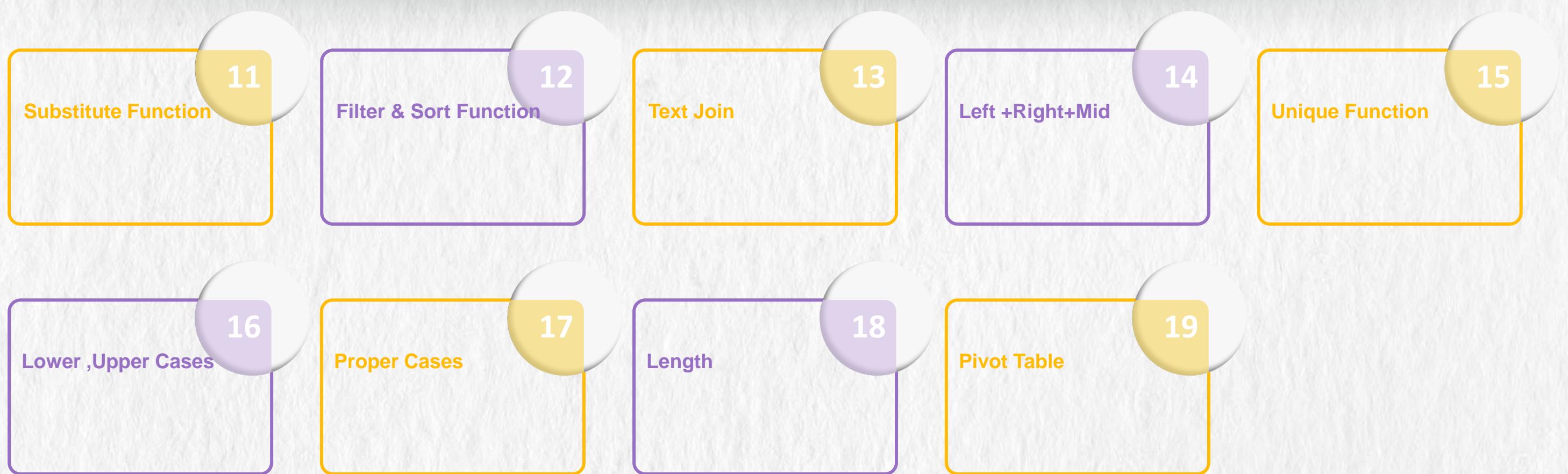
19 Functions

There are Many Function But I have selected 19 Function as BI/BA Must Know For Verification, Standardization and Cleaning



19 Functions

There are Many Function But I have selected 19 Function as BI/BA Must Know For Verification, Standardization and Cleaning



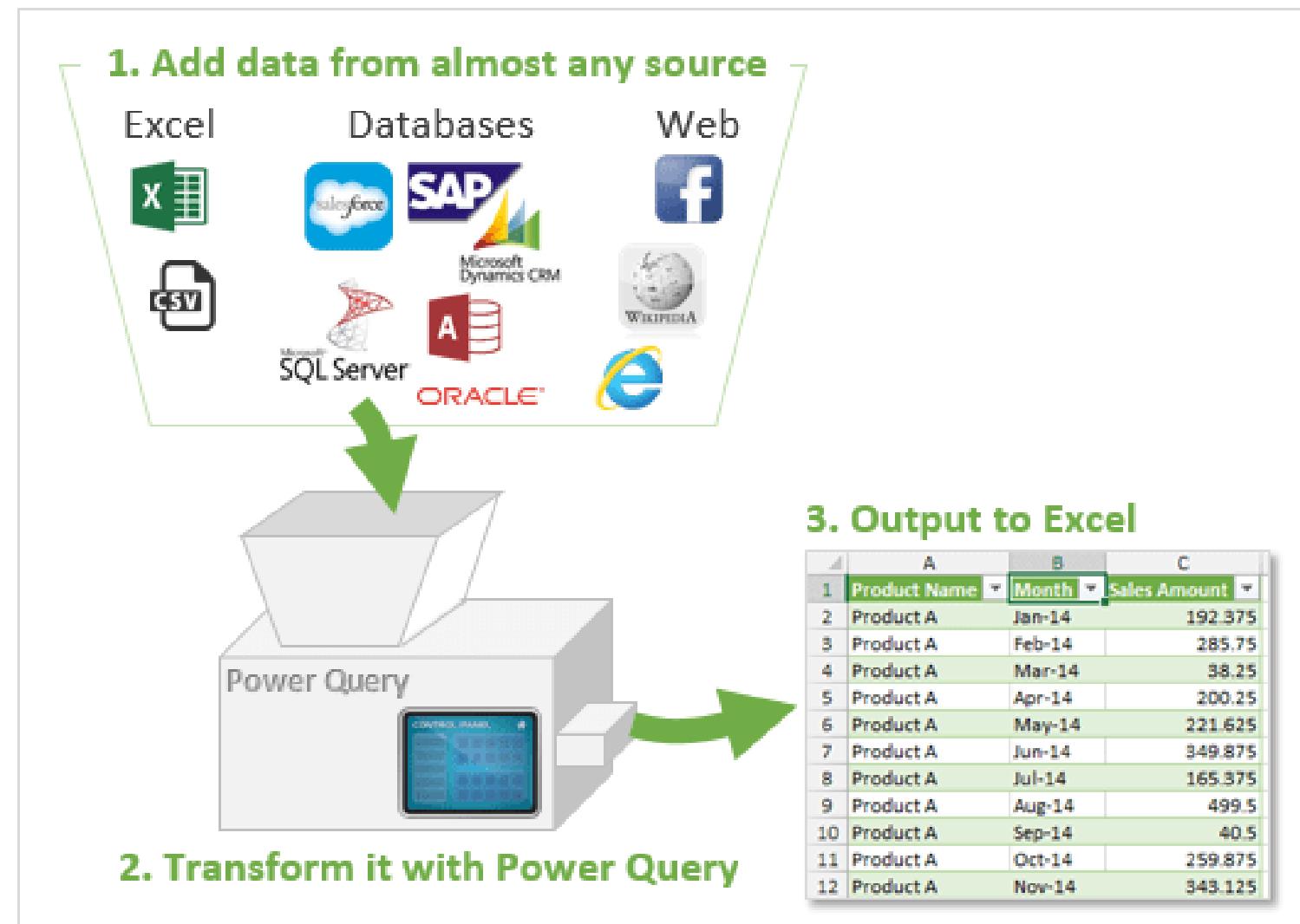
Power Query

Module 11

Introduction of Power Query

What is Power Query, What Is ETL and why its Important, Most Challenging work in Analytics Industry is Standardization of Data 70% Challenge

Power Query Transforms Your Data



User Interface of Power Query

The screenshot illustrates the Microsoft Power Query user interface. The ribbon at the top has tabs for File, Home, Transform (selected), Add Column, and View. The Transform tab is highlighted with a red border. The Formula Bar shows the formula: `= Table.TransformColumnTypes(Source,{{"sofifa_id", Int64.Type}, {"Name", type text}, {"age", type number}, {"height_cm", type number}})`. The Data Preview section shows a table with 14 rows of player data. The Properties pane on the right shows the query is named "FIFA_Players" and lists the applied step "Changed Type".

sofifa_id	Name	age	dob	height_cm
20801	Cristiano Ronaldo	33	2/5/1985 12:00:00 AM	
158023	Lionel Messi	31	6/24/1987 12:00:00 AM	
190871	Neymar da Silva Santos Junior	26	2/5/1992 12:00:00 AM	
193080	David De Gea Quintana	27	11/7/1990 12:00:00 AM	
192985	Kevin De Bruyne	27	6/28/1991 12:00:00 AM	
155862	Sergio Ramos	32	3/30/1986 12:00:00 AM	
176580	Luis Alberto	31	1/24/1987 12:00:00 AM	
177003	Luka Modrić	32	9/9/1985 12:00:00 AM	
183277	Eden Hazard	27	1/7/1991 12:00:00 AM	
200389	Jan Oblak	25	1/7/1993 12:00:00 AM	
192119	Thibaut Courtois	26	5/11/1992 12:00:00 AM	
167495	Manuel Neuer	32	3/27/1986 12:00:00 AM	
182493	Diego Godín	32	2/16/1986 12:00:00 AM	
182521	Toni Kroos	28	1/4/1990 12:00:00 AM	

01



Merge

02



Split and
Trim

03



Upper, Lower and
Proper

04



Add Suffix &
Prefix

05



Left, Right and
Mid

06



Extract Text Using
Delimiter

Date Function

01



Year,Quarter,
Month,Day

02



Dates,Earliest and
Latest

03



Name of the Day
and Month

04



Day of the
Week/Month/Year

05



Extract Date,
Time,Year

06



Calculate
Age

01



Add ,Subtract,Divide
and Multiply

02



Percentage,Rounding
of Number

03



Even,Odd

01



Append Multiple
Excel Files

02



Append Multiple
Tables

03



Append Multiple Excel
with Different Column

01



Merge
Tables

02



Merge
Excel Files

01



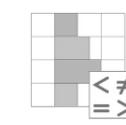
**Splitting Text into
Column**

02



**Merging Text into
Column**

03



**Conditional
Column**

Survey Dashboard

Module 12

Survey Dashboard are basically done for market research to understand the consumer better, In this dashboard will understand Types of MBTI Profile and How People are willing to support or Volunteer

01

Understanding The Data

02

Preparing Dimension Table

03

Cleaning Data In Excel

04

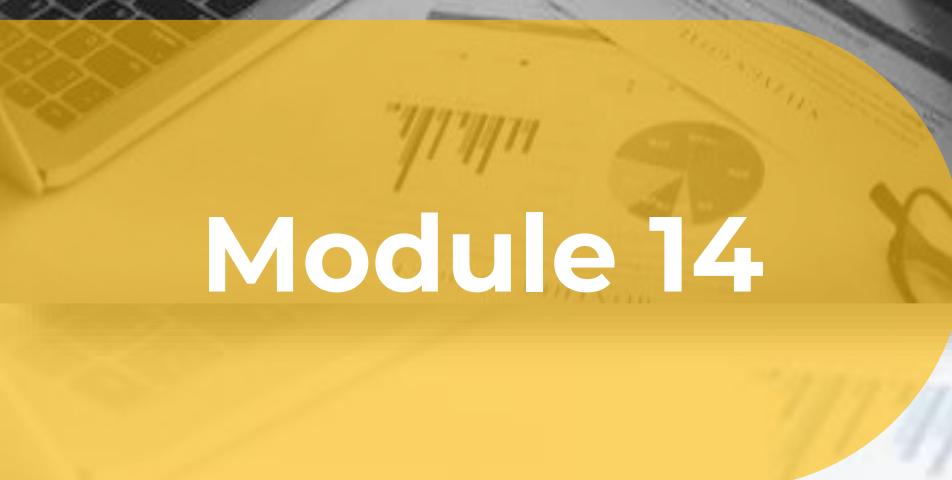
Importing Data in Power BI

05

Data Modelling

06

Dashboard Development



Module 14

Important DAX

What is DAX ?

Data Analysis Expressions (DAX) is a formula expression language used in Analysis Services, Power BI.

01

Calculated Measures

Quick Measures

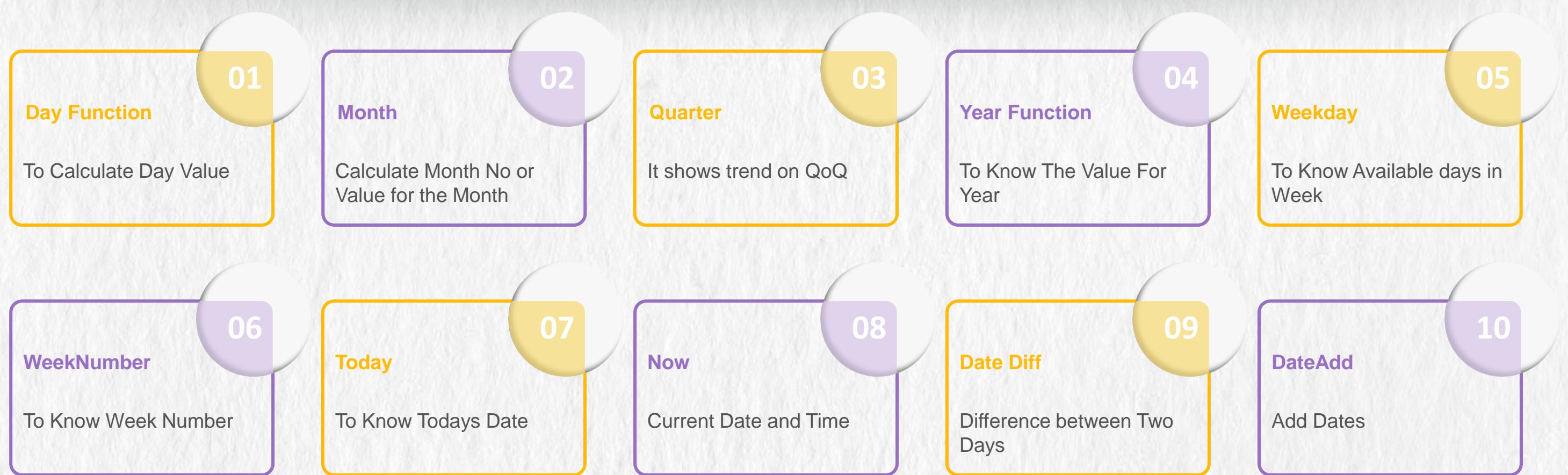
02

Calculated Column

Manual Dax

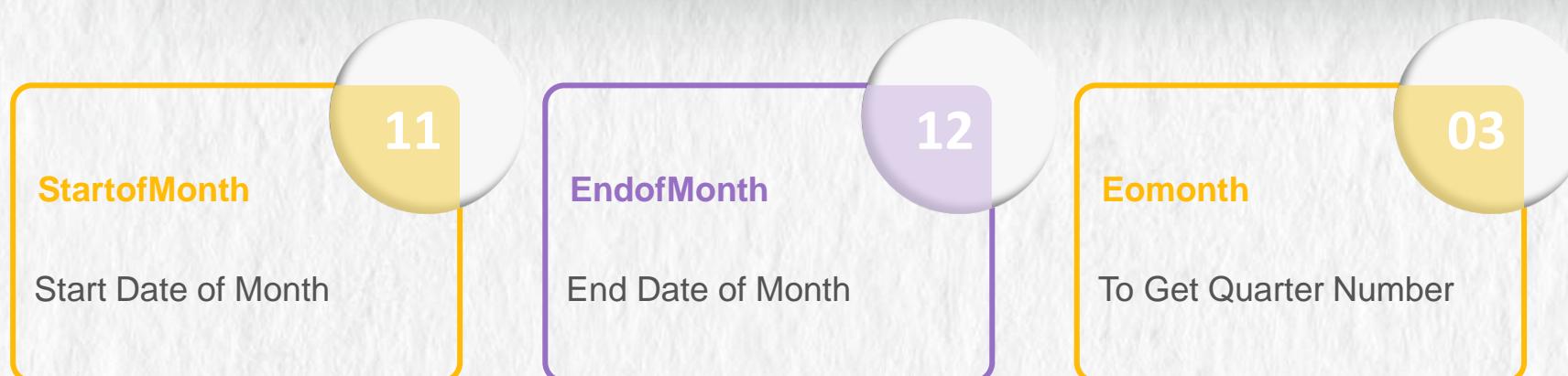
Date Function

Here Will Understand How Date Dax Can be Useful for deriving Information.



Date Function

Here Will Understand How Date Dax Can be Useful for deriving Information.



Date Function DAX

Module 14.1

What is total sales amount for given day?

Day Function

Here We are showing Total Amount of Sales for the Given Dates

Column Dax

```
Day = DAY(ListOfOrders[Order Date].[Date])
```

Calculated Measures

```
Sales by Day = calculate([Total  
Sales],groupby(ListOfOrders,ListOfOrders[Day]))
```

What is the average sales for given month?

Month Function

Here We are showing Total Average Sales for the Given Dates

Column Dax

```
Month = MONTH(ListOfOrders[Order Date].[Date])
```

Calculated Measures

```
Monthly avg sales = calculate([Average Sales  
Amount],groupby(ListOfOrders,ListOfOrders[Month]))
```

Compare profit between given quarter?

Quarter Function

Here We are showing profit comparison for two quarters

Column Dax

```
Quarter = QUARTER(ListOfOrders[Order Date].[Date])
```

Calculated Measures

```
Profit by Quarter = calculate([Total  
Profit],groupby(ListOfOrders,ListOfOrders[Quarter]))
```

Which year has the highest profit?

Year Function

Here We are showing highest profit for year.

Column Dax

```
Year = YEAR(ListOfOrders[Order Date].[Date])
```

Calculated Measures

```
Profit by Year = calculate([Total  
Profit],groupby(ListOfOrders,ListOfOrders[Year]))
```

Calculate weekday for each order date and ship date.

Weekday Function

Here We are showing weekday for each order date and ship date.

Column Dax

```
Weekday = WEEKDAY(ListOfOrders[Order  
Date].[Date],2)
```

Calculated Measures



Calculate weeknumber for each order date and ship date.

WeekNumber Function

Here We are showing weeknumber for each order date and ship date.

Column Dax

WeekNum = WEEKNUM(ListOfOrders[Order Date])

Calculated Measures



Calculate todays sales.

Today Function

Here We are showing today's sales.

Column Dax

Today = TODAY()

Calculated Measures

Today's Sales = calculate([Total Sales],Filter(ListOfOrders[Order date]=Today()))



What is current date and time?

Now Function

Here We are showing current date and time.

Column Dax

Now = NOW()

Calculated Measures



What is the difference between order date and ship date?

DateDiff Function

Here We are showing difference between order date and ship date

Column Dax

Difference = DATEDIFF(ListOfOrders[Order Date].[Date],ListOfOrders[Ship Date].[Date],DAY)

Calculated Measures



Add 1 day on ship dates.

DateAdd Function

Here We are adding one day on ship date.

Column Dax

```
Add1days = DATEADD(ListOfOrders[Ship  
Date].[Date],1,DAY)
```

Calculated Measures



Calculate start date of month for order date

Startofmonth Function

Here We are showing start date of the month.

Column Dax

Start of Month = STARTOFMONTH(ListOfOrders[Order Date].[Date])

Calculated Measures



Calculate End date of month for order date

endofmonth Function

Here We are showing end date of the month.

Column Dax

End of Month = ENDOFMONT(*ListOfOrders[Order Date].[Date]*)

Calculated Measures



calculate end of next month and end of previousmonth?

Eomonth Function

Here We are showing end date of next month and end date of previousmonth.

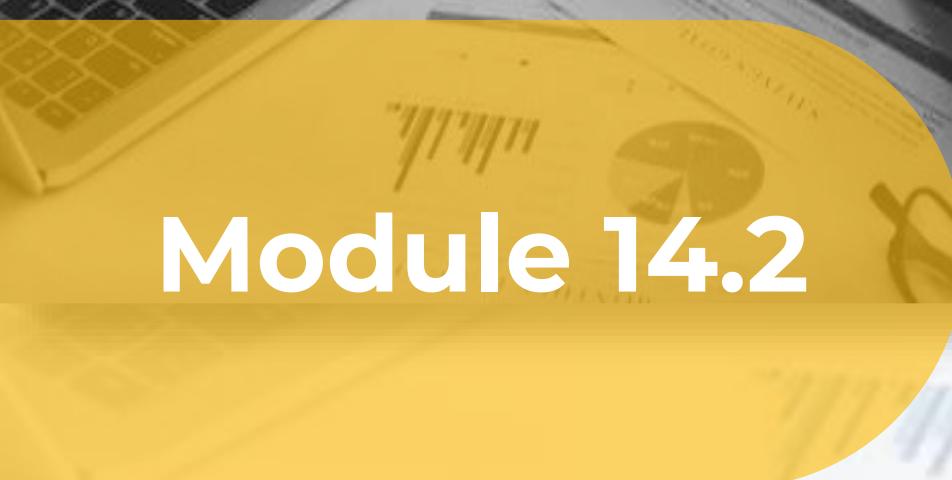
Column Dax

Endofnextmonth = EOMONTH(ListOfOrders[Order
Date].[Date],1) or

Endofpreviousmonth = EOMONTH(ListOfOrders[Order
Date].[Date],-1)

Calculated Measures





Module 14.2

Text Function DAX

Convert all the customer names into Upper class.

Upper Function

Here We are showing customer names into Upper class.

Column Dax

```
UpperCategory = UPPER(OrderBreakdown[Customer Name])
```

Calculated Measures



Convert all the Category into Lower class.

Lower Function

Here We are showing category into lower class.

Column Dax

```
LowerCategory = LOWER(OrderBreakdown[Category])
```

Calculated Measures



Calculate first two digit of order ID.

Left Function

Here We are showing first two digit of order ID.

Column Dax

Left = LEFT(OrderBreakdown[Order Id],2)

Calculated Measures



Calculate last four digit of order ID.

Right Function

Here We are showing last four digit of order ID.

Column Dax

Right = RIGHT(OrderBreakdown[Order ID],4)

Calculated Measures



Calculate middel four digit of order ID.

Mid Function

Here We are showing middel four digit of order ID.

Column Dax

Mid = MID(OrderBreakdown[Order ID],4,4)

Calculated Measures



Remove unwanted spaces from customer name.

Trim Function

Here We are removing unwanted spaces from customer name.

Column Dax

Trim = TRIM(OrderBreakdown[Customer Name])

Calculated Measures



How many characters are there in the Customer name?

Len Function

Here We are showing no. of characters available in customer name.

Column Dax

Length of customer name = LEN(OrderBreakdown[ProductName])

Calculated Measures



What is the full address of the customer?

Concat Function

Here We are combining city and country name to get full address of the customers.

Column Dax

```
Concatenate = CONCATENATE(ListOfOrders[City],", " &  
ListOfOrders[Country])
```

Calculated Measures



Replace the Supplies word with Supply

Substitute Function

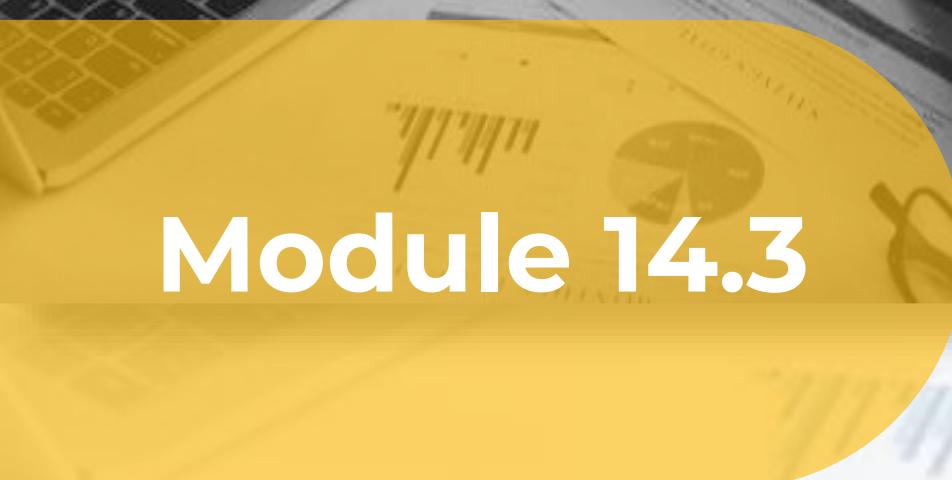
Here We are replacing supplies word with supply.

Column Dax

Substitute =
SUBSTITUTE(OrderBreakdown[Category],"Supplies",
"Supply")

Calculated Measures





Module 14.3

Logical Function DAX

Calculate the profit status if profit is greater than 0. then good or bad.

If Function

Here We are showing profit status based on condition good or bad.

Column Dax

Profit Status = IF(OrderBreakdown[Profit]>0, "Good", "Bad")

Calculated Measures



Calculate price per unit after discount without getting error.

Iferror Function

Here We are showing price per unit after discount without getting error.

Column Dax

Qty/Dis =
IFERROR(OrderBreakdown[Quantity]/OrderBreakdown[Discount],0)

Calculated Measures



Calculate the output status when discount is 0 and profit is greater than 1000.

And Function

Here We are showing output status when discount is 0 and profit is greater than 1000.

Column Dax

Output = AND(OrderBreakdown[Discount] = 0,
OrderBreakdown[Profit]>1000)

Calculated Measures

Calculate the output status when discount is 0 or profit is greater than 1000.

Or Function

Here We are showing output status when discount is 0 or profit is greater than 1000.

Column Dax

OROUTPUT = OR(OrderBreakdown[Discount] = 0,
OrderBreakdown[Profit] >1000)

Calculated Measures





Module 14.4

Aggregate Function DAX

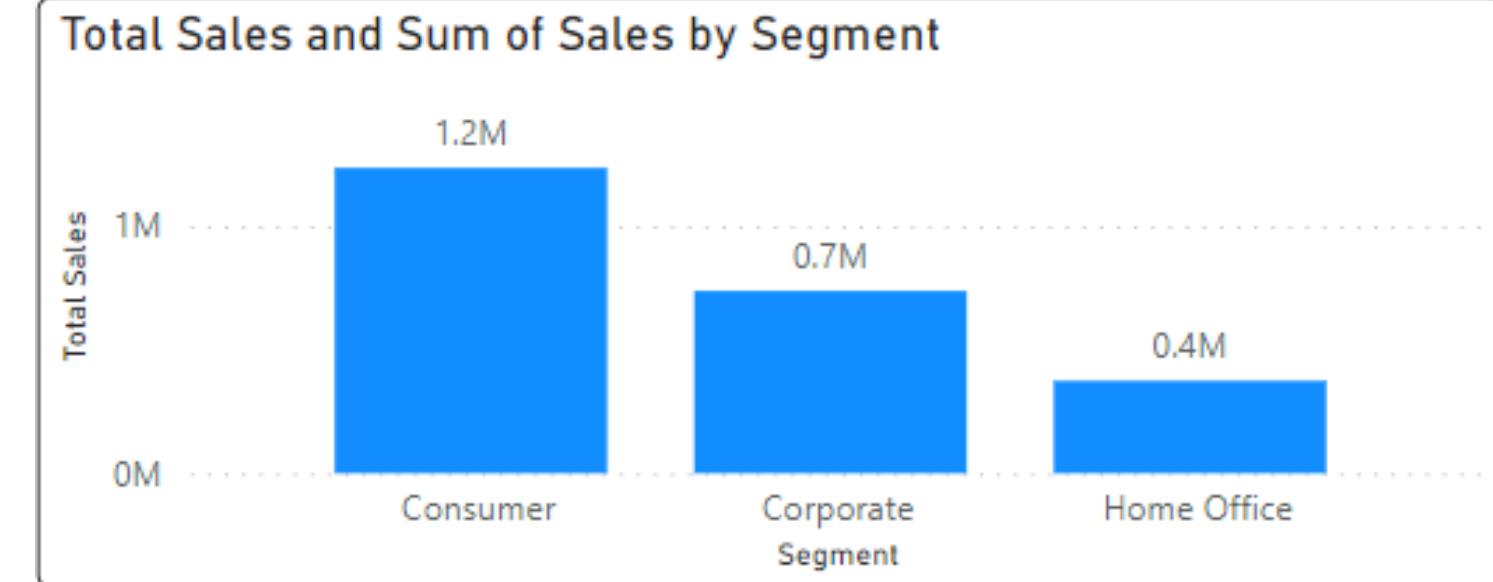
Calculate Total Sales?

Sum Function

Here We are showing total sales by segment.

Use

Adds all the numbers in the column



Calculated Measures

sum(sales[Amt])

Calculate the count of employee who has completed their training?

Sumx Function

Here We are showing count of employee who's training got completed.

Use

Returns the sum of an expression for each row in a table

Department Name	Count of Emp no	EMP comp training
Finance	5	2
Marketing	3	3
Total	8	4

Department Name	Count of Emp no	@ EMP comp training
Finance	5	2
Marketing	3	3
Total	8	5

Calculated Measures

@ EMP comp training =
SUMX(VALUES(Department[Department Name]),[EMP comp training])

Aggregation Function

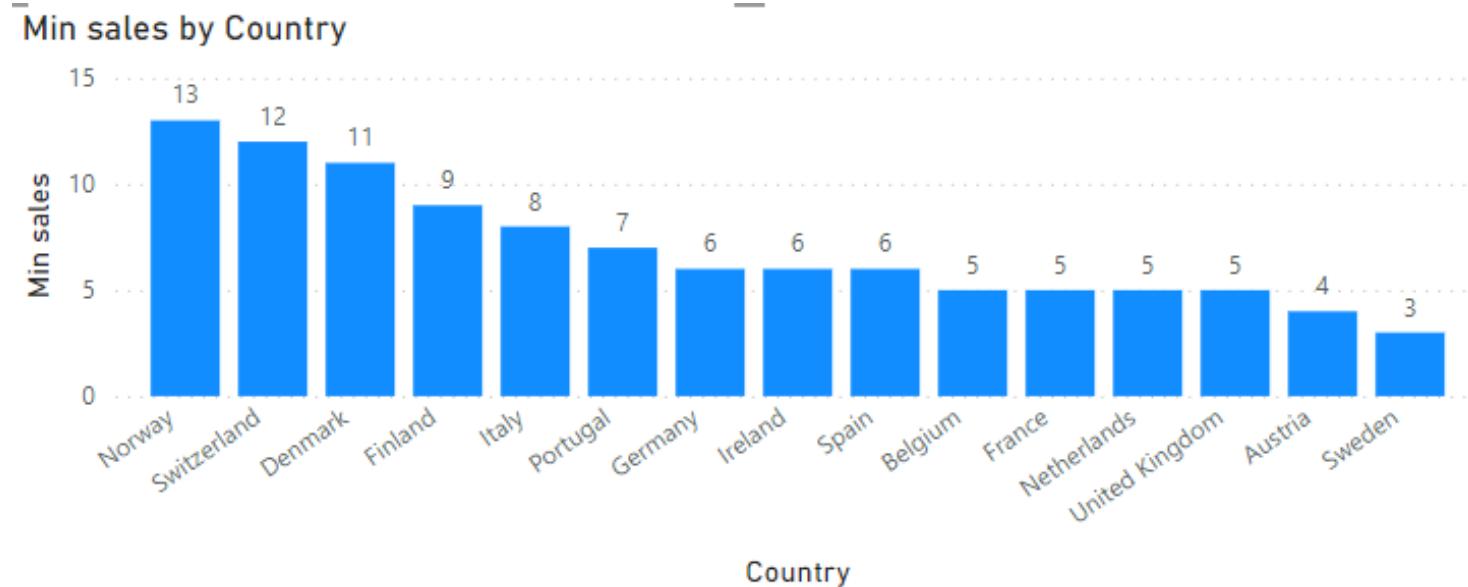
Calculate Minimum sales?

Min Function

Here We are showing minimum sales by country.

Use

Returns the smallest value in a column



Calculated Measures

Min sales = `MIN(OrderBreakdown[Sales])`

Calculate which country has minimum sales?

Minx Function

Here We are showing total minimum sales by country.

Use

Returns the smallest value of an expression for each row in a table

Calculated Measures

$\text{Minx} = \text{MINX}(\text{OrderBreakdown}, \text{OrderBreakdown}[Sales])$

MINX	
Country	Min_Sales
Austria	4
Belgium	5
Denmark	11
Finland	9
France	5
Germany	6
Ireland	6
Italy	8
Netherlands	5
Norway	13
Portugal	7
Spain	6
Sweden	3
Switzerland	12
United Kingdom	5
Total	3

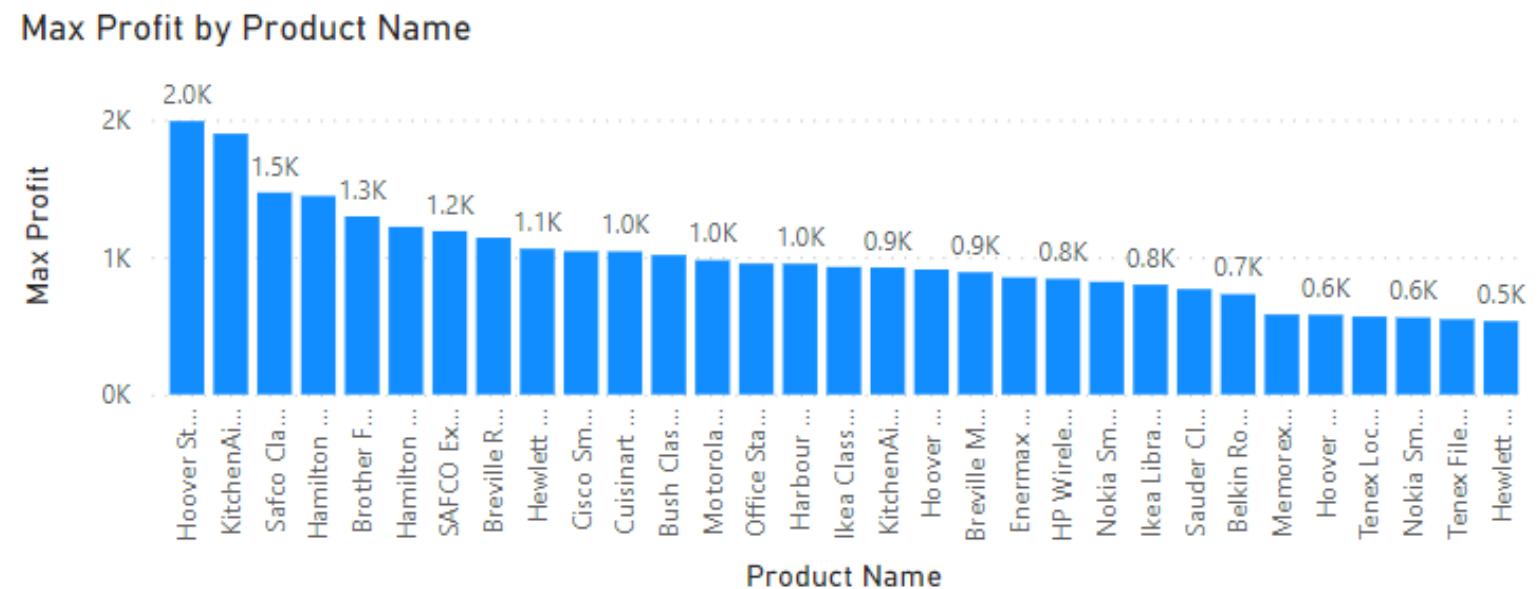
On which product given maximum discount?

Max Function

Here We are showing maximum profit by product.

Use

Returns the largest value in a column



Calculated Measures

Max Profit = MAX(OrderBreakdown[Profit])

Calculate which country has maximum sales?

Maxx Function

Here We are showing total maximum sales by product.

Use

Returns the largest value of an expression for each row in a table

Calculated Measures

Maxx = MAXX(OrderBreakdown,OrderBreakdown[Sales])

MAXX

Country	Maxx
Austria	3,221
Belgium	2,489
Denmark	920
Finland	2,769
France	5,729
Germany	4,748
Ireland	1,029
Italy	3,979
Netherlands	2,571
Norway	1,601
Portugal	3,400
Spain	6,517
Sweden	2,830
Switzerland	3,422
United Kingdom	5,785
Total	6,517



Calculate the no. of order for each country?

Count Function

Here we are showing count of orders by country.

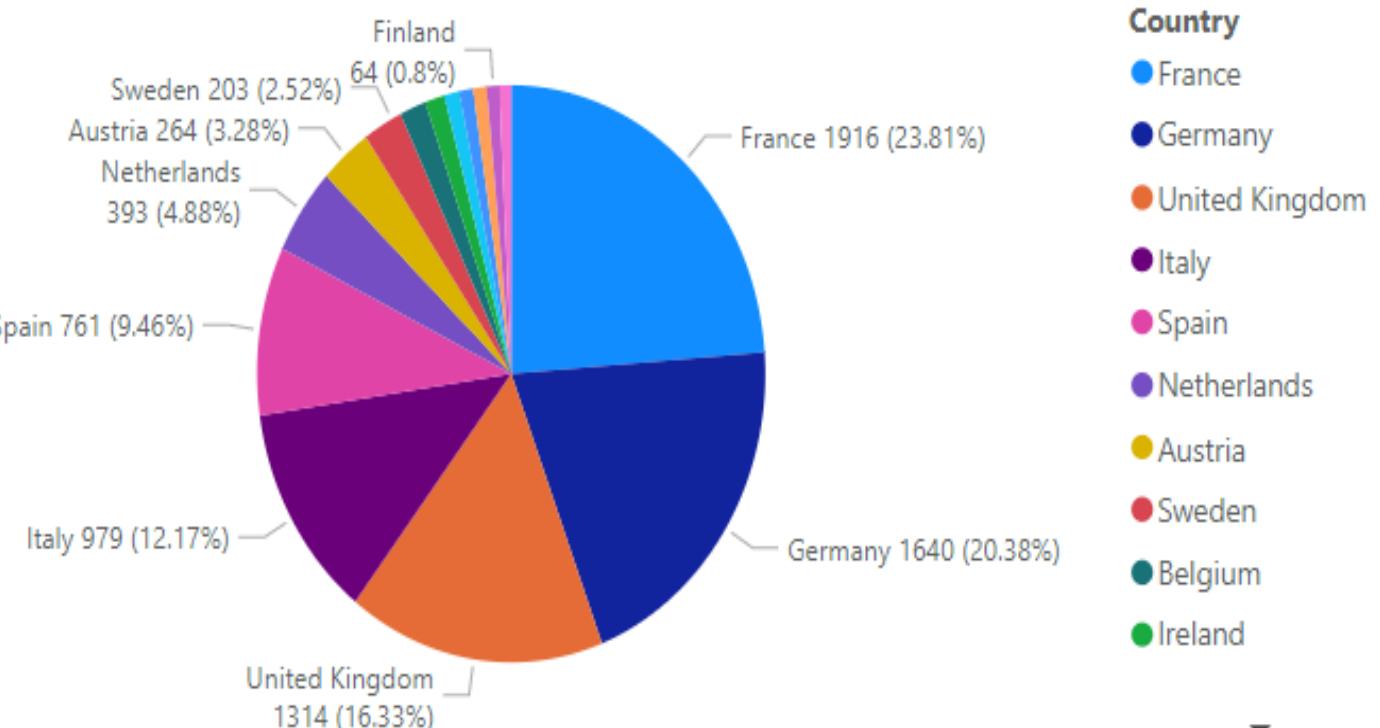
Use

Count the number of rows in the specified column that contain non-blank values

Calculated Measures

Count= Count(Order_ID)

Count of Order ID by Country



Calculate the no. of products for each country?

Countx Function

Here we are showing count of Products by country.

Use

Returns the Count of an expression for each row in a table

Calculated Measures

Count_of_products =
COUNTX(OrderBreakdown,OrderBreakdown[Product Name])

COUNTX

Country	Count_of_products
Austria	264
Belgium	135
Denmark	60
Finland	64
France	1916
Germany	1640
Ireland	100
Italy	979
Netherlands	393
Norway	70
Portugal	70
Spain	761
Sweden	203
Switzerland	78
United Kingdom	1314
Total	8047

How many rows available in list of order table ?

Countrows Function

Here we are showing count of rows available in order table.

4117

Count of rows list of orders table

Use

Counts the number of rows in the specified table

Calculated Measures

Count of rows list of orders table =
`COUNTROWS(ListOfOrders)`

How many unique customers available in each month?

Distinct Function

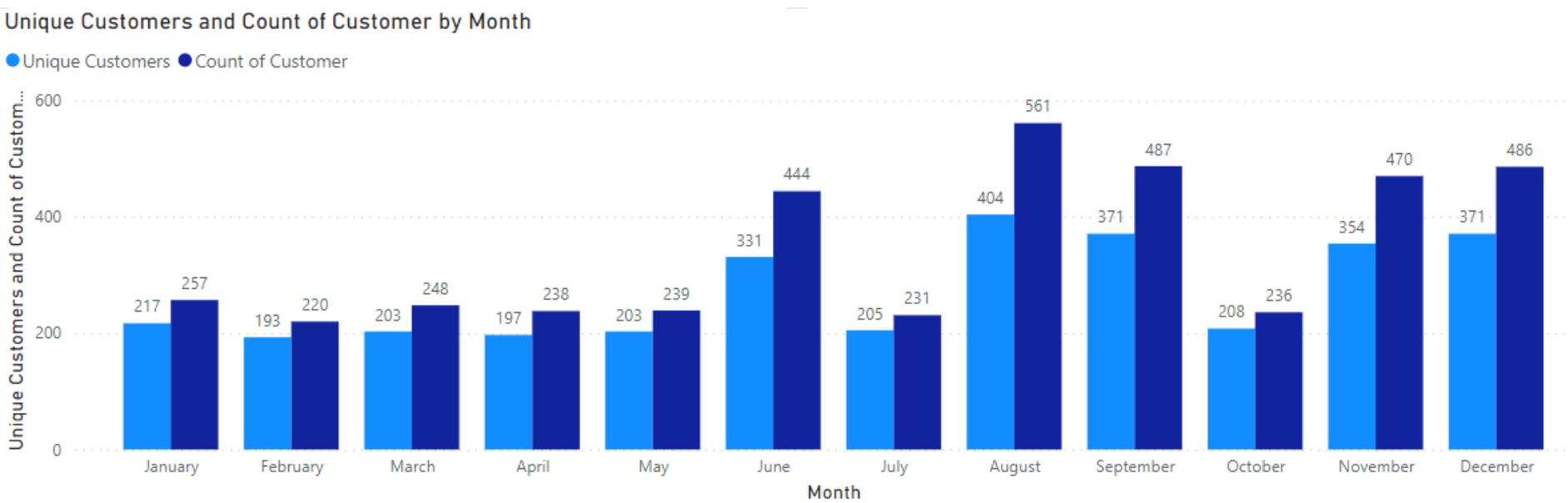
Here we are showing Unique count of customers in each month.

Use

Count the number of distinct values in a column

Calculated Measures

Unique customers = Distinctcount(customers)



Aggregation Function

what is the average profit per month ?

Average Function

Here we are showing average profit for each month.

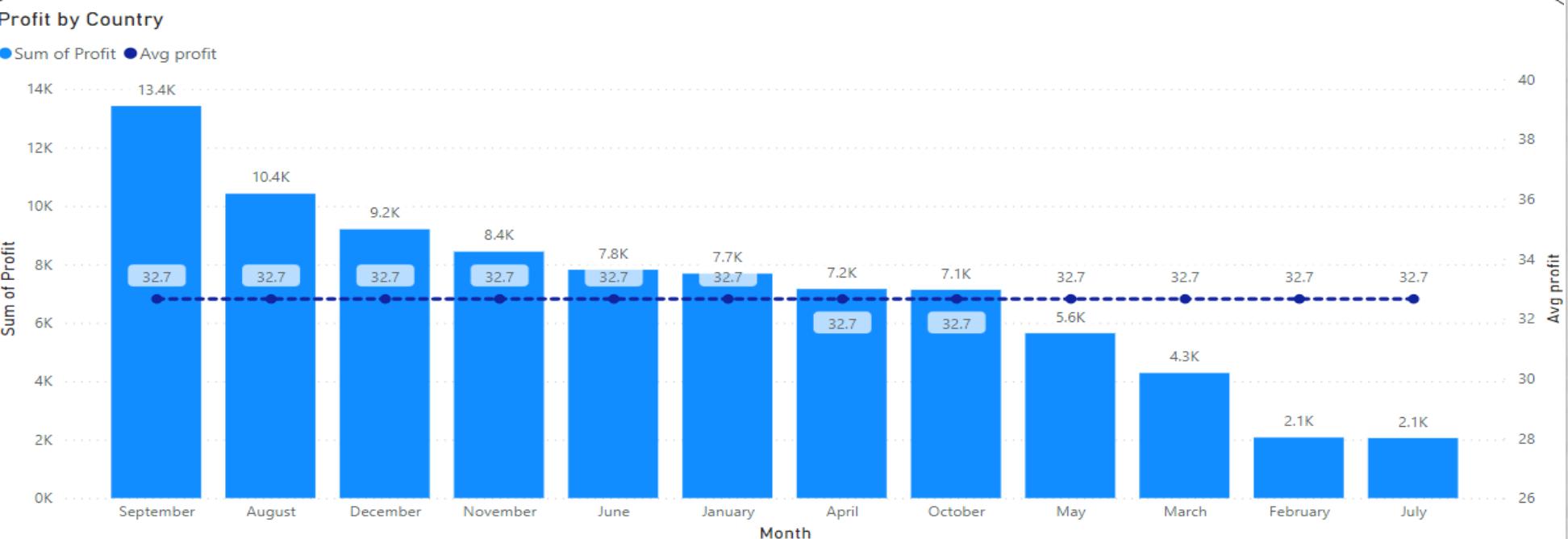
Use

Returns the average of all the numbers in a column

Calculated Measures

Avg profit % =

CALCULATE(AVERAGE(OrderBreakdown[Profit]),ALLSELECTED
(OrderBreakdown))



Calculate the average sale for each Segment?

AverageX Function

Here we are showing average sale for each segment.

Use

Returns the Average of an expression for each row in a table

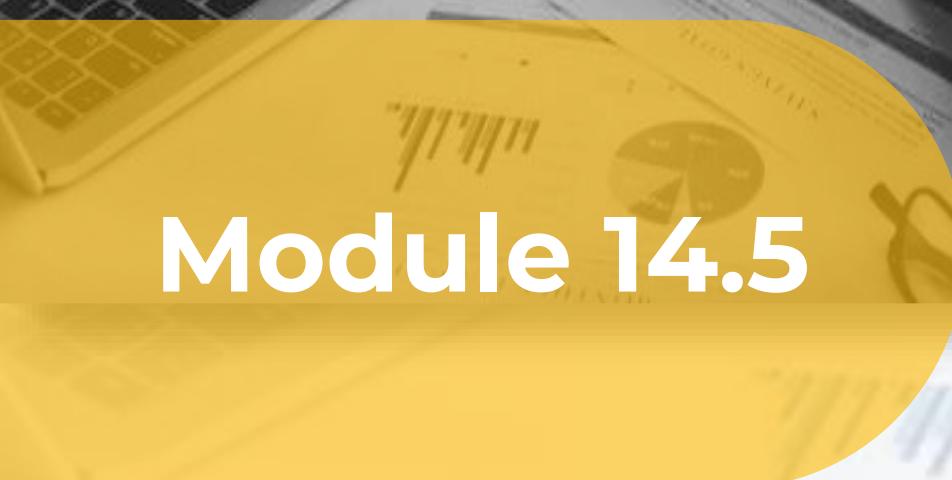
AVERAGEX

Segment	Avg_Sales
Consumer	296
Corporate	294
Home Office	275
Total	292

Calculated Measures

AverageX =

AVERAGEX(OrderBreakdown,OrderBreakdown[Sales])



Module 14.5

Filter Function DAX

Calculate the total profit for furniture category?

Calculate Function

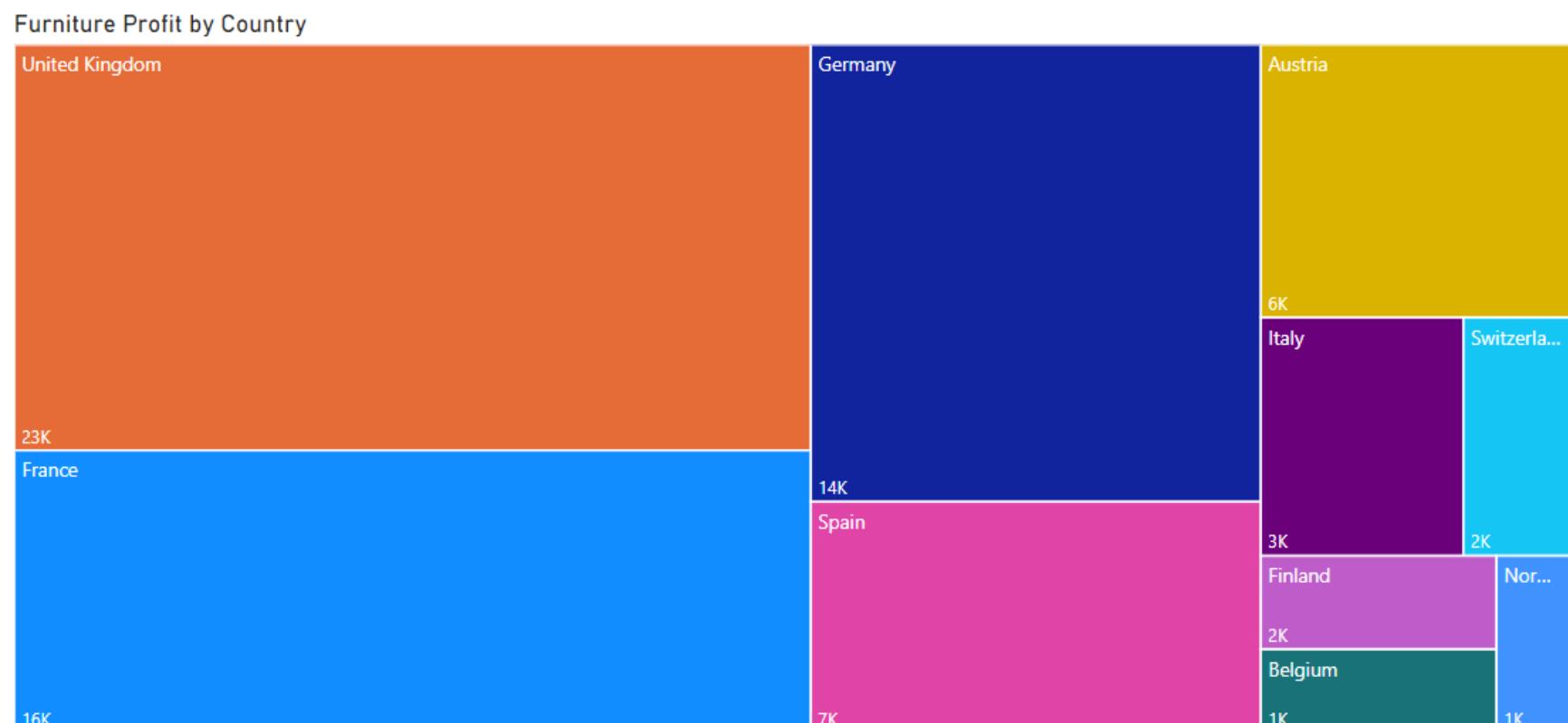
Here we are showing furniture profit for each country.

Use

Calculate and expression with modified filters

Calculated Measures

```
CALCULATE(SUM(OrderBreakdown[Profit]),OrderBreakdown[  
Category]="Furniture")
```



Calculate profit where only year slicer will applicable and others not ?

Allexcept Function

Here we are showing total profit except year filter.

Use

Removes all the filters except applied to the column mention in this function

Calculated Measures

```
CALCULATE(SUM(OrderBreakdown[Profit]),ALLEXCEPT(ListOfOrders,ListOfOrders[Year]))
```

Country	Profit for allexcept year
Austria	283240
Belgium	283240
Denmark	283240
Finland	283240
France	283240
Germany	283240
Ireland	283240
Italy	283240
Netherlands	283240
Norway	283240
Portugal	283240
Spain	283240
Sweden	283240
Switzerland	283240
United Kingdom	283240
Total	283240



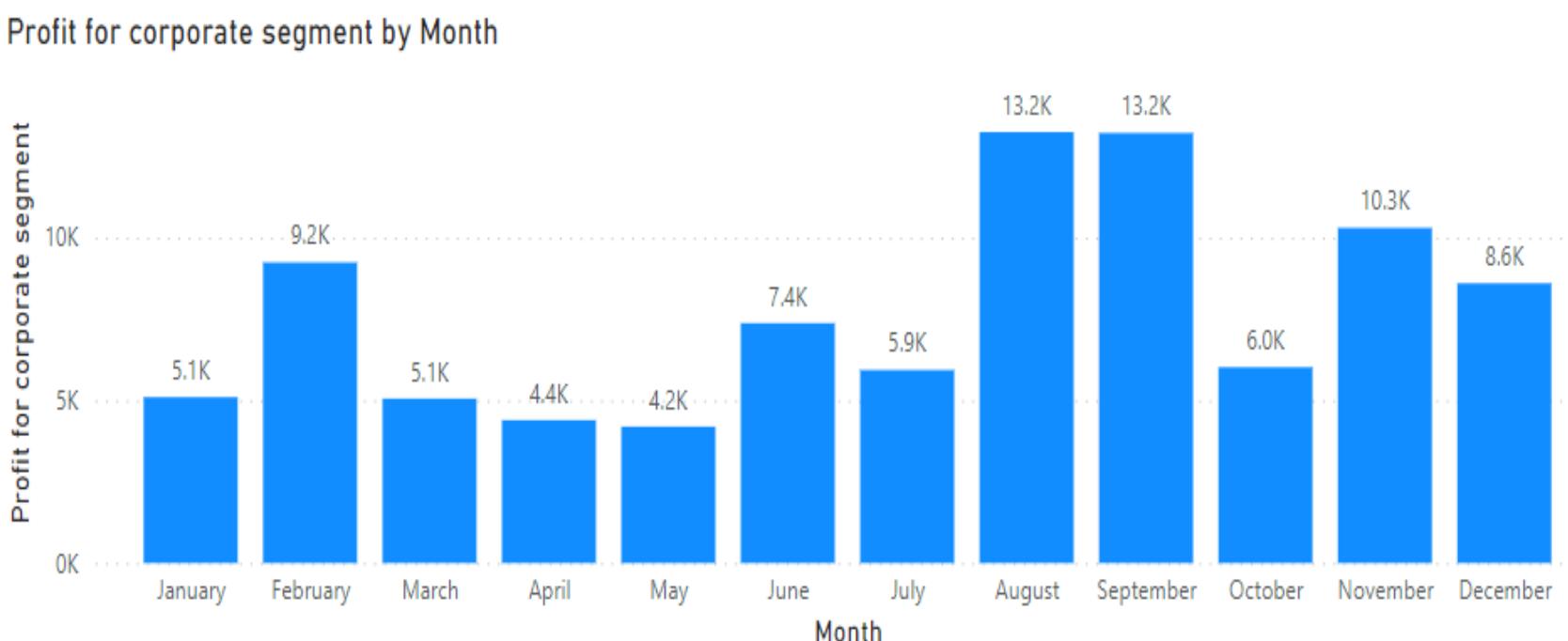
Calculate the total profit for Corporate Segment?

Filter Function

Here we are showing total profit corporate segment.

Use

Returns the applied filter in a specified table



Calculated Measures

```
CALCULATE(SUM(OrderBreakdown[Profit]),FILTER(ListOfOrders,ListOfOrders[Segment]="Corporate"))
```

Show profit only for "France" Country?

Keepfilter Function

Here we are showing profit for france country.

Use

Modified how filters applied calculating a calculate and calculatetable function

Calculated Measures

```
CALCULATE(SUM(OrderBreakdown[Profit]),KEEPFILTERS(ListOfOrders[Country]="France"))
```

Country	Keepfilters	Sum of Profit
Austria		21,332
Belgium		9,912
Denmark		-3,608
Finland		3,908
France	70067	70,067
Germany		86,279
Ireland		-6,886
Italy		15,802
Netherlands		-37,188
Norway		5,167
Portugal		-8,704
Spain		47,067
Sweden		-17,524
Switzerland		7,234
United Kingdom		90,382
Total	70067	2,83,240





Module 14.6

Time Intelligence Function DAX

Calculate the profit for Previousday, Variance and DOD% cahnge?

Previousday Function

Here we are showing profit for previousday.

Use

Returns the value of Previousday

Calculated Measures

Previous day profit =

`CALCULATE(SUM(OrderBreakdown[Profit]),PREVIOUSDAY(List
OfOrders[Order Date].[Date]))`

Previous Day

Year	Quarter	Month	Day	Sum of Profit	Previous day profit	Day Var	Day Var%
2011	Qtr 1	January	1	-26		-26	0.00
2011	Qtr 1	January	2		-26	26	-1.00
2011	Qtr 1	January	3	290		290	0.00
2011	Qtr 1	January	4	-2	290	-292	-1.01
2011	Qtr 1	January	5	98	-2	100	-50.00
2011	Qtr 1	January	6		98	-98	-1.00
2011	Qtr 1	January	7	181		181	0.00
2011	Qtr 1	January	8	-1,068	181	-1249	-6.90
2011	Qtr 1	January	9		-1068	1068	-1.00
2011	Qtr 1	January	11	-254		-254	0.00
2011	Qtr 1	January	12	305	-254	559	-2.20
2011	Qtr 1	January	13	-198	305	-503	-1.65
2011	Qtr 1	January	14	247	-198	445	-2.25
2011	Qtr 1	January	15	48	247	-199	-0.81
2011	Qtr 1	January	16		48	-48	-1.00
2011	Qtr 1	January	17	-8		-8	0.00
2011	Qtr 1	January	18	22	-8	30	-3.75
2011	Qtr 1	January	19	73	22	51	2.32
2011	Qtr 1	January	20	8	73	-65	-0.89
2011	Qtr 1	January	21	233	8	225	28.13
Total				2,83,240	283240	0.00	



Calculate the profit for Previousmonth, Variance and MOM% change?

Previousmonth Function

Here we are showing profit for previousmonth.

Use

Returns the value of previousmonth

Calculated Measures

Previousmonth=

`CALCULATE(SUM(OrderBreakdown[Profit]),PREVIOUSMONTH
(ListOfOrders[Order Date].[Date]))`

Previous Month

Year	Quarter	Month	Sum of Profit	Previous month profit	Month Var	Month Var%
2011	Qtr 1	January	249		249	0.00
2011	Qtr 1	February	800	249	551	2.21
2011	Qtr 1	March	4,042	800	3242	4.05
2011	Qtr 2	April	3,357	4042	-685	-0.17
2011	Qtr 2	May	1,589	3357	-1768	-0.53
2011	Qtr 2	June	5,945	1589	4356	2.74
2011	Qtr 3	July	2,060	5945	-3885	-0.65
2011	Qtr 3	August	6,172	2060	4112	2.00
2011	Qtr 3	September	11,926	6172	5754	0.93
2011	Qtr 4	October	1,918	11926	-10008	-0.84
2011	Qtr 4	November	7,199	1918	5281	2.75
2011	Qtr 4	December	9,230	7199	2031	0.28
2012	Qtr 1	January	2,071	9230	-7159	-0.78
2012	Qtr 1	February	4,210	2071	2139	1.03
2012	Qtr 1	March	2,444	4210	-1766	-0.42
2012	Qtr 2	April	1,008	2444	-1436	-0.59
2012	Qtr 2	May	5,084	1008	4076	4.04
2012	Qtr 2	June	9,696	5084	4612	0.91
2012	Qtr 3	July	6,686	9696	-3010	-0.31
2012	Qtr 3	August	15,639	6686	8953	1.34
2012	Qtr 3	September	4,892	15639	-10747	-0.69
Total			2,83,240	283240	0.00	



Calculate the profit for Previousquarter, Variance and QOQ% change?

Previousquarter Function

Here we are showing profit for previousquarter.

Use

Returns the value of previousquarter

Calculated Measures

Previousquarter=

```
CALCULATE(SUM(OrderBreakdown[Profit]),PREVIOUSQUARTER(ListOfOrders[Order Date].[Date]))
```

Previous Quarter

Year	Quarter	Sum of Profit	Previous Quarter Profit	Qtr Var	Qtr Var%
2011	Qtr 1	5,091		5091	0.00
2011	Qtr 2	10,891	5091	5800	1.14
2011	Qtr 3	20,158	10891	9267	0.85
2011	Qtr 4	18,347	20158	-1811	-0.09
2012	Qtr 1	8,725	18347	-9622	-0.52
2012	Qtr 2	15,788	8725	7063	0.81
2012	Qtr 3	27,217	15788	11429	0.72
2012	Qtr 4	14,493	27217	-12724	-0.47
2013	Qtr 1	17,063	14493	2570	0.18
2013	Qtr 2	16,672	17063	-391	-0.02
2013	Qtr 3	19,330	16672	2658	0.16
2013	Qtr 4	24,135	19330	4805	0.25
2014	Qtr 1	14,040	24135	-10095	-0.42
2014	Qtr 2	20,621	14040	6581	0.47
2014	Qtr 3	25,898	20621	5277	0.26
2014	Qtr 4	24,771	25898	-1127	-0.04
Total		2,83,240	283240	0.00	



Calculate the profit for Previousyear, Variance and YOY% change?

Previousyear Function

Here we are showing profit for previousyear.

Use

Returns the value of previousyear

Calculated Measures

Previousyear=

CALCULATE(SUM(OrderBreakdown[Profit]),PREVIOUSYEAR(ListOfOrders[Order Date].[Date]))

Previous Year

Year	Sum of Profit	Previous Year Profit	Year Var	Year Var%
2011	54,487	54487		0.00
2012	66,223	54487	11736	0.22
2013	77,200	66223	10977	0.17
2014	85,330	77200	8130	0.11
Total	2,83,240	283240		0.00



Calculate the nextday Sales?

Nextday Function

Here we are showing profit for nextday.

Use

Returns the value of nextday.

Calculated Measures

Nextday=
CALCULATE(SUM(OrderBreakdown[Sales]),NEXTDAY(ListOfOrders[Order Date].[Date]))

Next Day

Year	Quarter	Month	Day	Sum of Sales	Next day Sales
2011	Qtr 1	January	1	45	
2011	Qtr 1	January	2		854
2011	Qtr 1	January	3	854	184
2011	Qtr 1	January	4	184	297
2011	Qtr 1	January	5	297	
2011	Qtr 1	January	6		904
2011	Qtr 1	January	7	904	1103
2011	Qtr 1	January	8	1,103	
2011	Qtr 1	January	10		1969
2011	Qtr 1	January	11	1,969	1672
2011	Qtr 1	January	12	1,672	310
2011	Qtr 1	January	13	310	1150
2011	Qtr 1	January	14	1,150	1022
2011	Qtr 1	January	15	1,022	
2011	Qtr 1	January	16		17
2011	Qtr 1	January	17	17	134
2011	Qtr 1	January	18	134	241
2011	Qtr 1	January	19	241	58
2011	Qtr 1	January	20	58	495
Total				23,48,482	



Calculate the nextmonth Sales?

Nextmonth Function

Here we are showing profit for nextmonth.

Use

Returns the value of nextmonth.

Calculated Measures

Nextmonth=

CALCULATE(SUM(OrderBreakdown[Sales]),NEXTMONTH(List
OfOrders[Order Date].[Date]))

Next Month

Year	Quarter	Month	Sum of Sales	Next month Sales
2011	Qtr 1	January	14,335	21646
2011	Qtr 1	February	21,646	20567
2011	Qtr 1	March	20,567	21920
2011	Qtr 2	April	21,920	28955
2011	Qtr 2	May	28,955	48837
2011	Qtr 2	June	48,837	16635
2011	Qtr 3	July	16,635	47822
2011	Qtr 3	August	47,822	62455
2011	Qtr 3	September	62,455	15670
2011	Qtr 4	October	15,670	52567
2011	Qtr 4	November	52,567	62939
2011	Qtr 4	December	62,939	30022
2012	Qtr 1	January	30,022	15304
2012	Qtr 1	February	15,304	41388
2012	Qtr 1	March	41,388	30771
2012	Qtr 2	April	30,771	34359
2012	Qtr 2	May	34,359	54760
2012	Qtr 2	June	54,760	38345
2012	Qtr 3	July	38,345	85111
2012	Qtr 3	August	85,111	61777
Total			23,48,482	



Calculate the nextquarter Sales?

Nextquarter Function

Here we are showing profit for nextquarter.

Use

Returns the value of nextquarter.

Calculated Measures

Nextquarter=

CALCULATE(SUM(OrderBreakdown[Sales]),NEXTQUARTER(List
OfOrders[Order Date].[Date]))

Next Quarter

Year	Quarter	Sum of Sales	Next Quarter Sales
2011	Qtr 1	56,548	99712
2011	Qtr 2	99,712	126912
2011	Qtr 3	1,26,912	131176
2011	Qtr 4	1,31,176	86714
2012	Qtr 1	86,714	119890
2012	Qtr 2	1,19,890	185233
2012	Qtr 3	1,85,233	157043
2012	Qtr 4	1,57,043	121725
2013	Qtr 1	1,21,725	158793
2013	Qtr 2	1,58,793	181576
2013	Qtr 3	1,81,576	168130
2013	Qtr 4	1,68,130	120730
2014	Qtr 1	1,20,730	167945
2014	Qtr 2	1,67,945	250853
2014	Qtr 3	2,50,853	215502
2014	Qtr 4	2,15,502	
Total		23,48,482	



Calculate the nextyear Sales?

Nextyear Function

Here we are showing profit for nextyear.

Use

Returns the value of nextyear.

Calculated Measures

Nextyear=

```
CALCULATE(SUM(OrderBreakdown[Sales]),NEXTYEAR(ListOfOrders[Order Date].[Date]))
```

Next Year

Year	Sum of Sales	Next Year Sales
2011	4,14,348	548880
2012	5,48,880	630224
2013	6,30,224	755030
2014	7,55,030	
Total	23,48,482	

Compare profit with last year profit?

Sameperiodlastyear Function

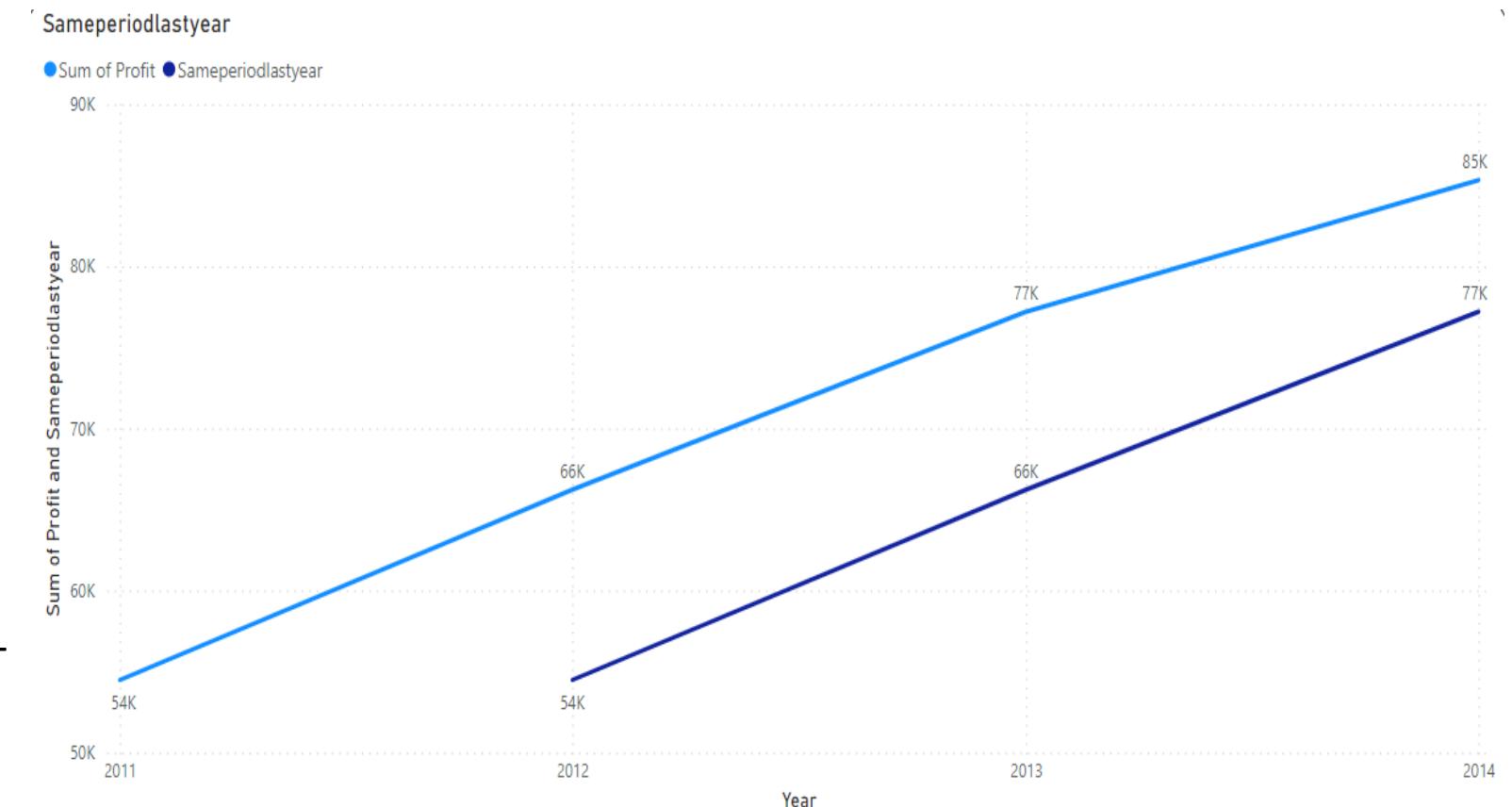
Here we are showing profit for last year.

Use

Returns the value for last year

Calculated Measures

Sameperiodlastyear=
CALCULATE(SUM(OrderBreakdown[Profit]),SAMEPERIODLAST
YEAR(ListOfOrders[Order Date].[Date]))



Compare profit with 5 month back profit?

Dateadd Function

Here we are showing profit for 5 month back.

Use

Returns the 5 month back value

Calculated Measures

Dateadd=

CALCULATE(SUM(OrderBreakdown[Profit]),DATEADD(ListOfOrders[Order Date].[Date],-5,MONTH))

5 monthback profit

Year	Quarter	Month	Sum of Profit	5monthbackprofit
2011	Qtr 1	January	249	
2011	Qtr 1	February	800	
2011	Qtr 1	March	4,042	
2011	Qtr 2	April	3,357	
2011	Qtr 2	May	1,589	
2011	Qtr 2	June	5,945	249
2011	Qtr 3	July	2,060	800
2011	Qtr 3	August	6,172	4042
2011	Qtr 3	September	11,926	3357
2011	Qtr 4	October	1,918	1589
2011	Qtr 4	November	7,199	5945
2011	Qtr 4	December	9,230	2060
2012	Qtr 1	January	2,071	6172
2012	Qtr 1	February	4,210	11926
2012	Qtr 1	March	2,444	1918
2012	Qtr 2	April	1,008	7199
2012	Qtr 2	May	5,084	9230
2012	Qtr 2	June	9,696	2071
2012	Qtr 3	July	6,686	4210
2012	Qtr 3	August	15,639	2444
2012	Qtr 3	September	4,892	1008
Total			2,83,240	234626



Compare profit with 5 month ahead profit?

Dateadd Function

Here we are showing profit for 5 ahead back.

Use

Returns the 5 month ahead value

Calculated Measures

Dateadd=

CALCULATE(SUM(OrderBreakdown[Profit]),DATEADD(ListOfOrders[Order Date].[Date],5,MONTH))

5 day ahead profit

Year	Quarter	Month	Sum of Profit	5monthaheadprofit
2011	Qtr 1	January	249	5945
2011	Qtr 1	February	800	2060
2011	Qtr 1	March	4,042	6172
2011	Qtr 2	April	3,357	11926
2011	Qtr 2	May	1,589	1918
2011	Qtr 2	June	5,945	7199
2011	Qtr 3	July	2,060	9230
2011	Qtr 3	August	6,172	2071
2011	Qtr 3	September	11,926	4210
2011	Qtr 4	October	1,918	2444
2011	Qtr 4	November	7,199	1008
2011	Qtr 4	December	9,230	5084
2012	Qtr 1	January	2,071	9696
2012	Qtr 1	February	4,210	6686
2012	Qtr 1	March	2,444	15639
2012	Qtr 2	April	1,008	4892
2012	Qtr 2	May	5,084	4874
2012	Qtr 2	June	9,696	1267
2012	Qtr 3	July	6,686	8352
2012	Qtr 3	August	15,639	7503
Total			2,83,240	273203



Calculate the sales between 1st march 2014 to 31st march 2014?

Datesbetween Function

Here we are showing sales between 1st march 2014 to 31st march 2014

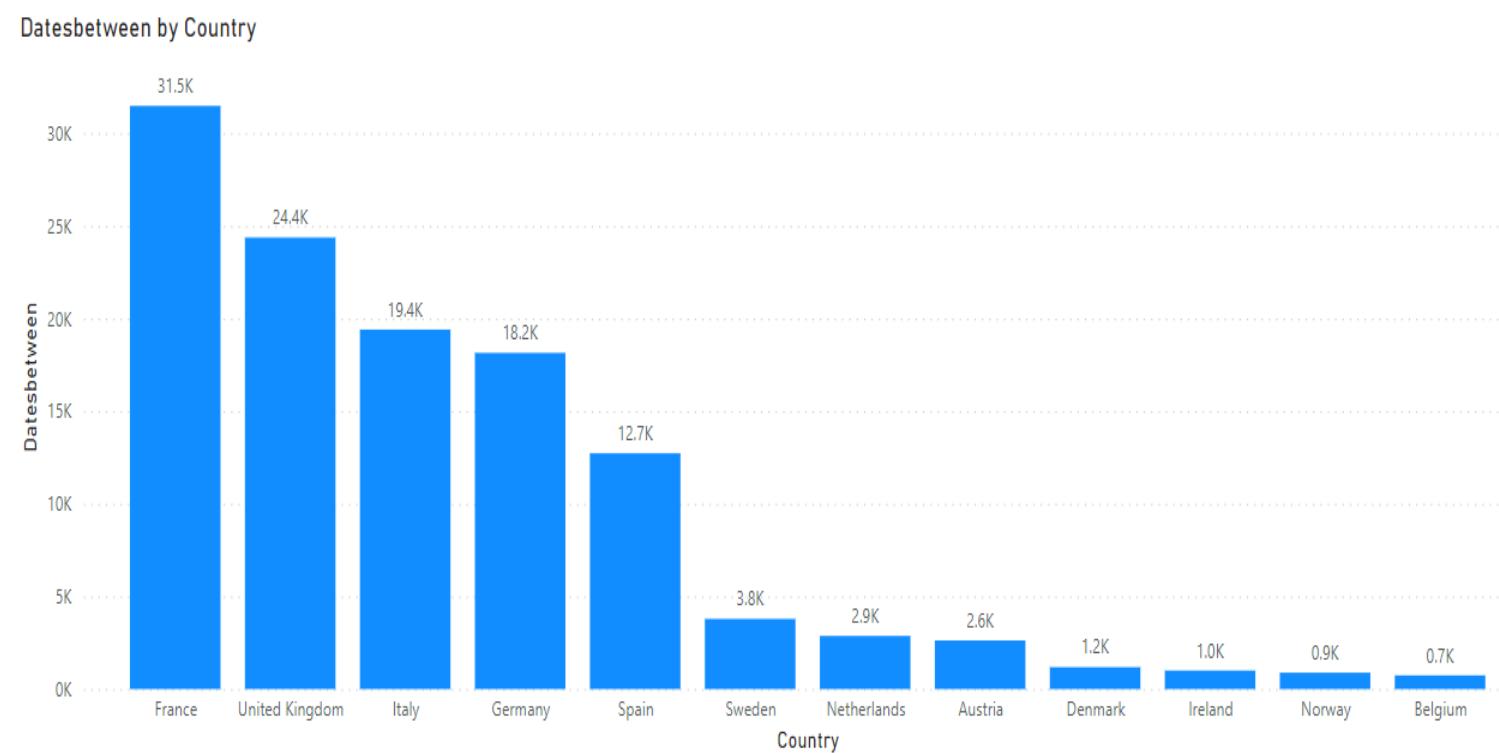
Use

Returns a table that contains a column of dates that begins with a specified start date and continues until a specified end date.

Calculated Measures

Datesbetween=

```
CALCULATE(SUM(OrderBreakdown[Sales]),DATESBETWEEN(ListOfOrders[Order Date],"01/03/2014","31/03/2014"))
```



Calculate quarterly profit using datesinperiod function for each segment?

Datesinperiod Function

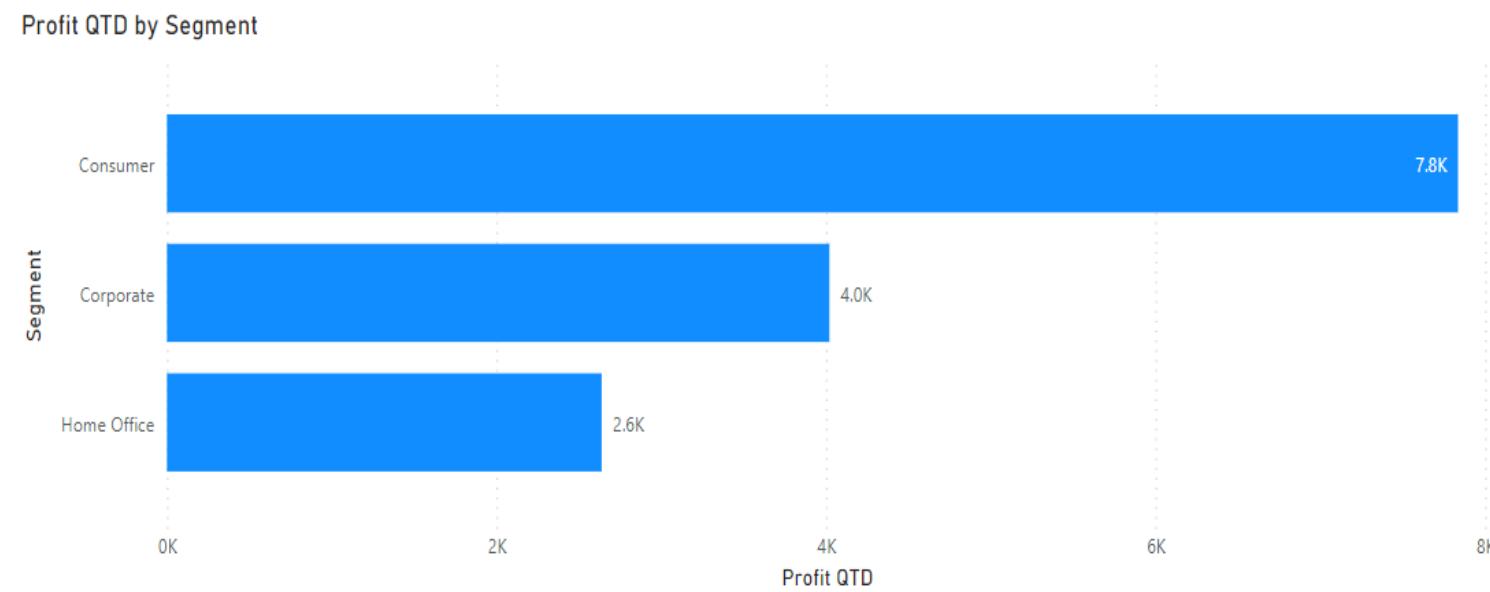
Here we are showing quarterly profit for each segment.

Use

Returns a table that contains a column of dates that begins with a specified start date and continues for the specified number and type of date intervals.

Calculated Measures

```
Datesinperiod= CALCULATE(  
    SUM(OrderBreakdown[Profit]),  
    DATESINPERIOD(ListOfOrders[Order  
Date],MAX(ListOfOrders[Order Date]), -3,MONTH))
```



Calculate YTD profit using datesinperiod function for each region?

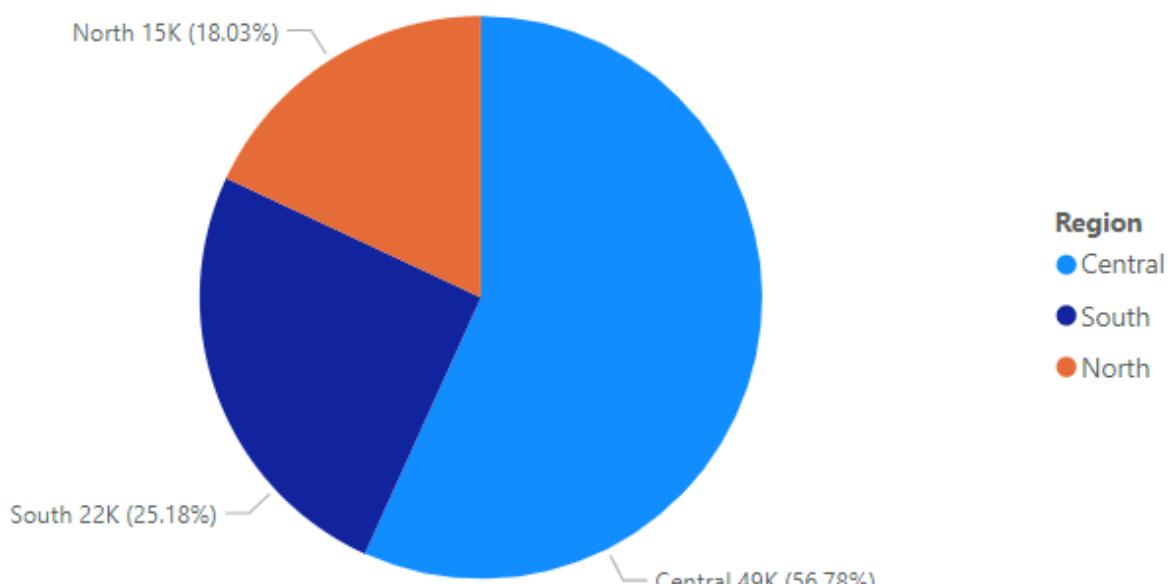
Datesinperiod Function

Here we are showing ytd profit for each region.

Use

Returns the expression value based on Year-To-Date function

YTD by Region



Calculated Measures

Datesinperiod=

```
CALCULATE(SUM(OrderBreakdown[Profit]),DATESINPERIOD(ListOfOrders[Order Date], MAX(ListOfOrders[Order Date]),-12,MONTH))
```

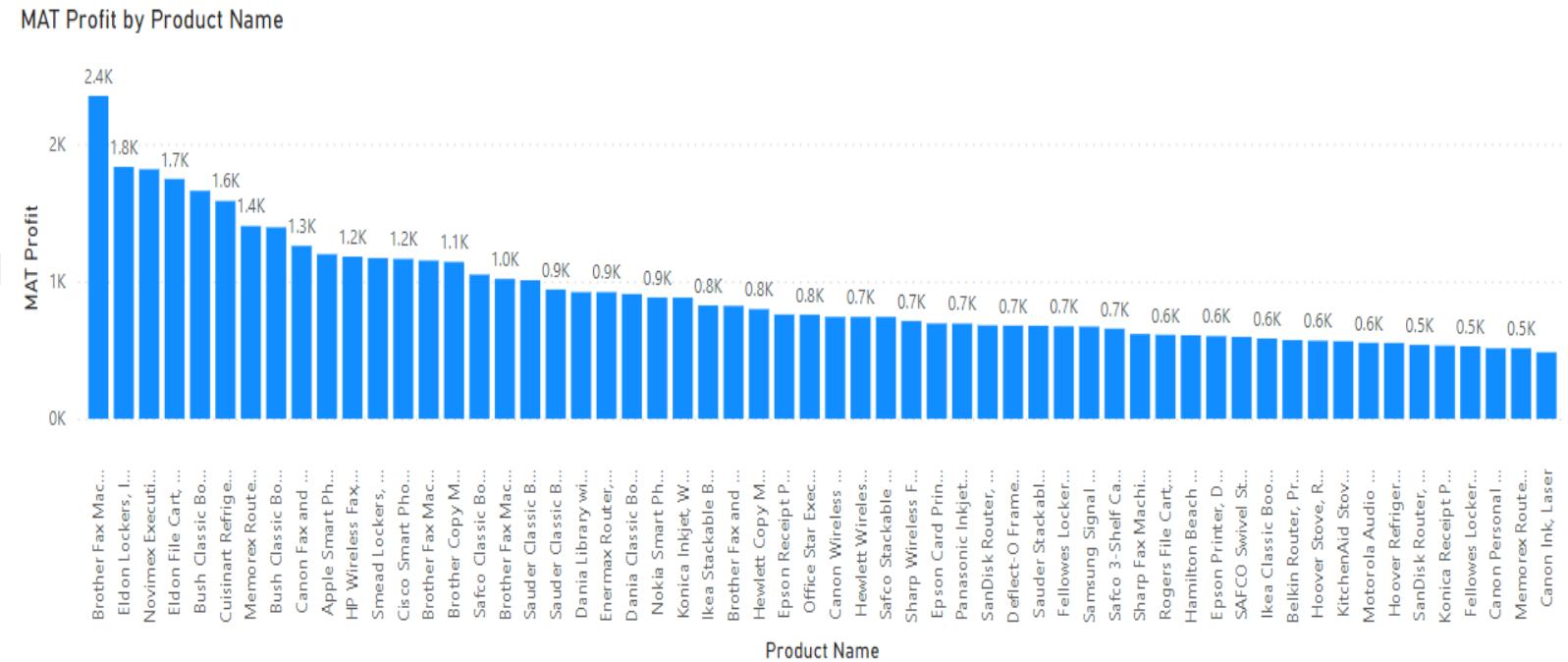
Calculate MAT Sales using datesinperiod function for each product?

Datesinperiod Function

Here we are showing MAT profit for each product.

Use

Returns the expression value based on Moving-Anual-Total function



Calculated Measures

Datesinperiod=

```
CALCULATE (Sum(Amount),DATESINPERIOD (  
Dim_Date[Date].[Date], MAX ( Dim_Date[Date] ),-  
12,Month))
```

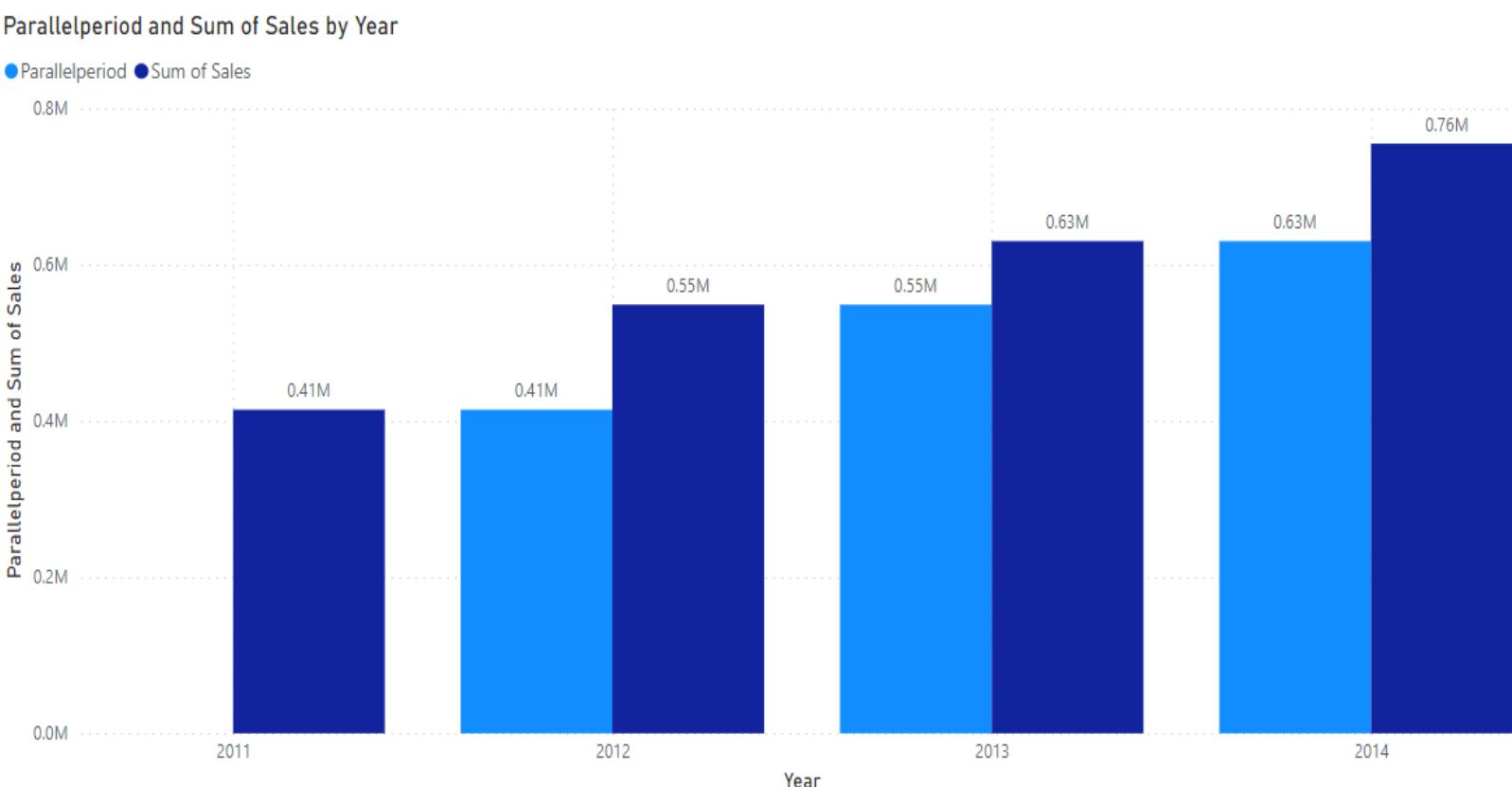
Compare sales with previous year using parallelperiod function?

Parallelperiod Function

Here we are showing lastyear profit for each year.

Use

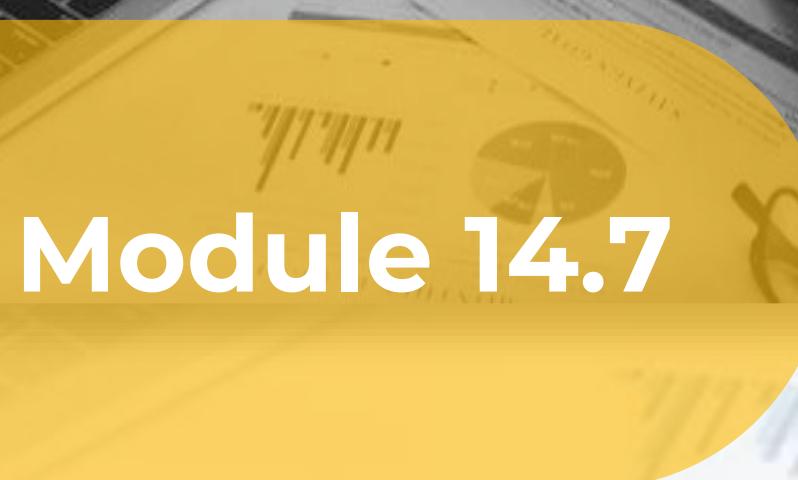
Returns the values for parallelperiod based on specified intervals in the function.



Calculated Measures

Datesinperiod=

Calculate(Sum(Amount), Parallelperiod(Date_dim[date],-1,year))



Module 14.7

Advanced DAX Function

Calculate monthly and ytd sales for each sub category?

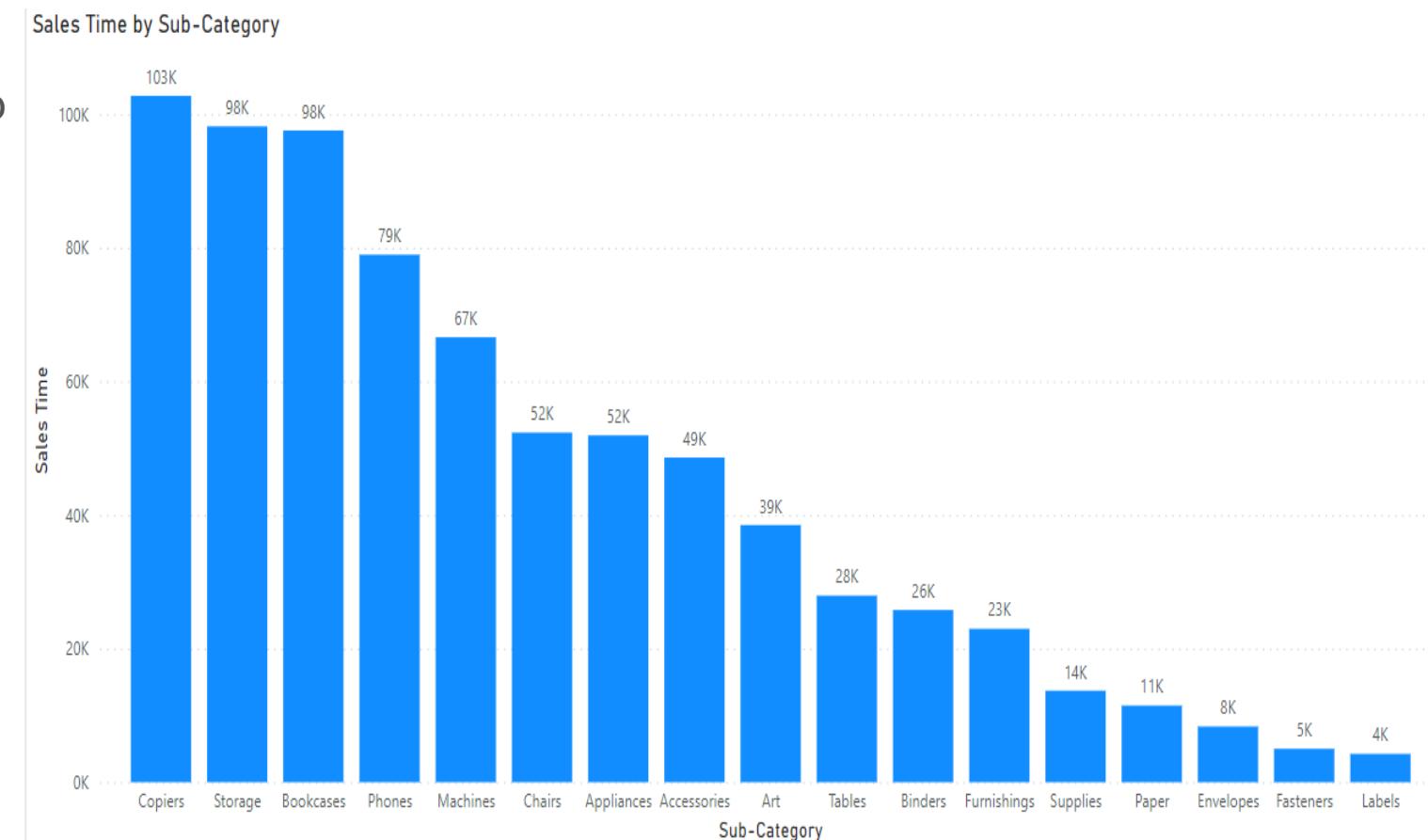
Selectedvalue Function

Here we are showing monthly and ytd sales for each sub category

Calculated Measures

Sales Time =

```
IF(SELECTEDVALUE(Timeframe[Timeperiod])="Monthly",
SUM(OrderBreakdown[Sales]),
IF(SELECTEDVALUE(Timeframe[Timeperiod])="Ytd",
CALCULATE(SUM(OrderBreakdown[Sales]),
FILTER(all(ListOfOrders),ListOfOrders[Order
Date]<=MAX(ListOfOrders[Order Date])&&
ListOfOrders[Order Date].[Year]= max(ListOfOrders[Order
Date].[Year])))))
```



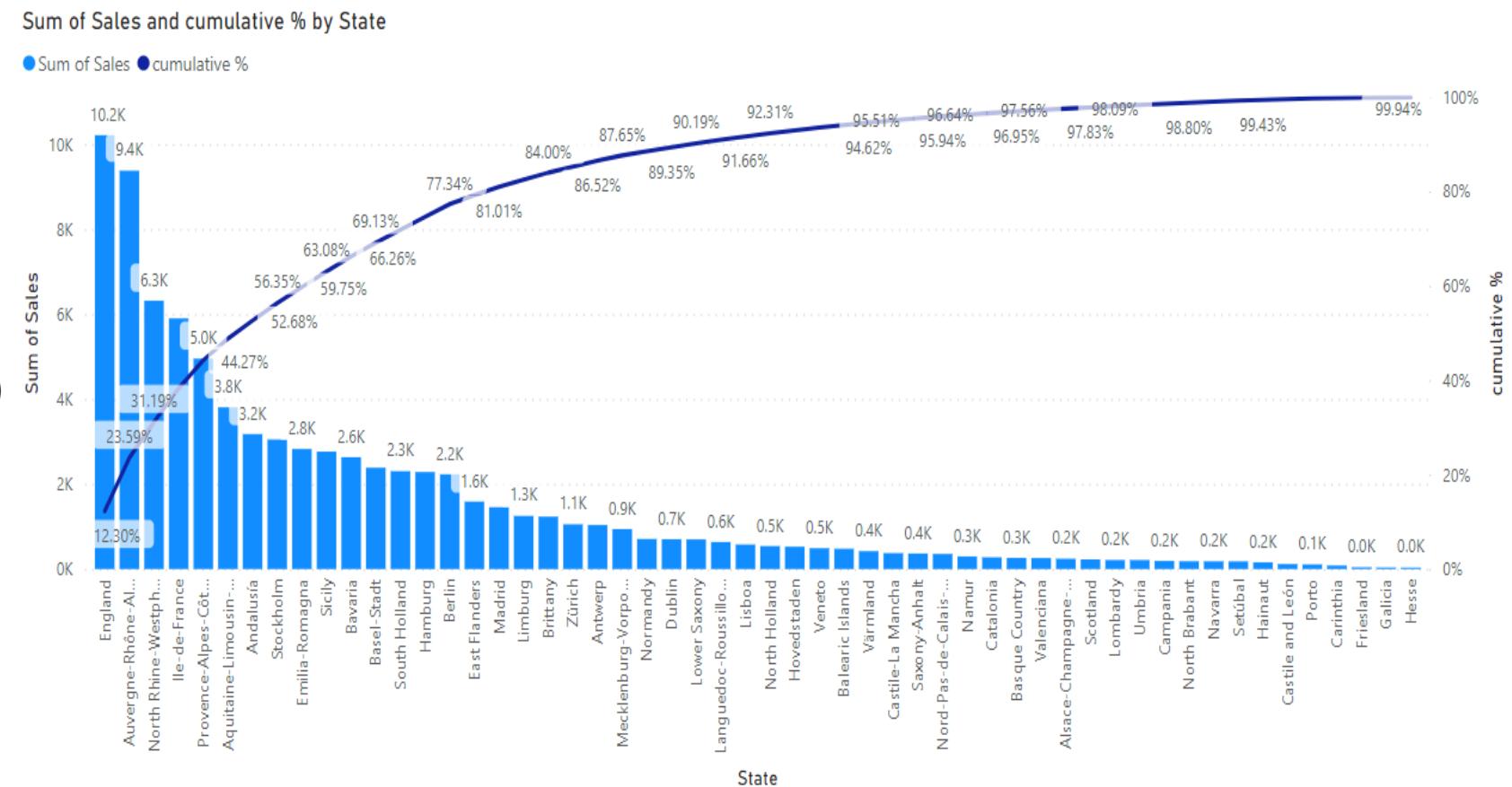
Calculate Cumulative Sales %?

Cumulative %

Here we are showing cumulative sales%.

Calculated Measures

```
Cumulative % = Var sales = SUM(OrderBreakdown[Sales])
return
DIVIDE(
    CALCULATE(SUM(OrderBreakdown[Sales]),
    FILTER(
        ALLSELECTED(ListOfOrders[State]),
        CALCULATE(SUM(OrderBreakdown[Sales])>=sales))),
    [All sales])
```



Calculate Running total sales?

Running Total

Here we are showing running total sales.

Calculated Measures

Sales Running Total = CALCULATE([Sales
Time],FILTER(ALL(ListOfOrders[Country]),
ListOfOrders[Country]<=MAX(ListOfOrders[Country])))

Country	Sum of Sales	Sales Running Total
Austria	114	114
Belgium	4,222	4336
Denmark	527	4863
France	27,235	32098
Germany	15,512	47610
Ireland	703	48313
Italy	6,709	55022
Netherlands	3,207	58229
Portugal	870	59099
Spain	6,629	65728
Sweden	3,474	69202
Switzerland	3,442	72644
United Kingdom	10,444	83088
Total	83,088	83088

Calculate profit making top countries?

Top N (Ranking)

Here we are showing profit making top countries.

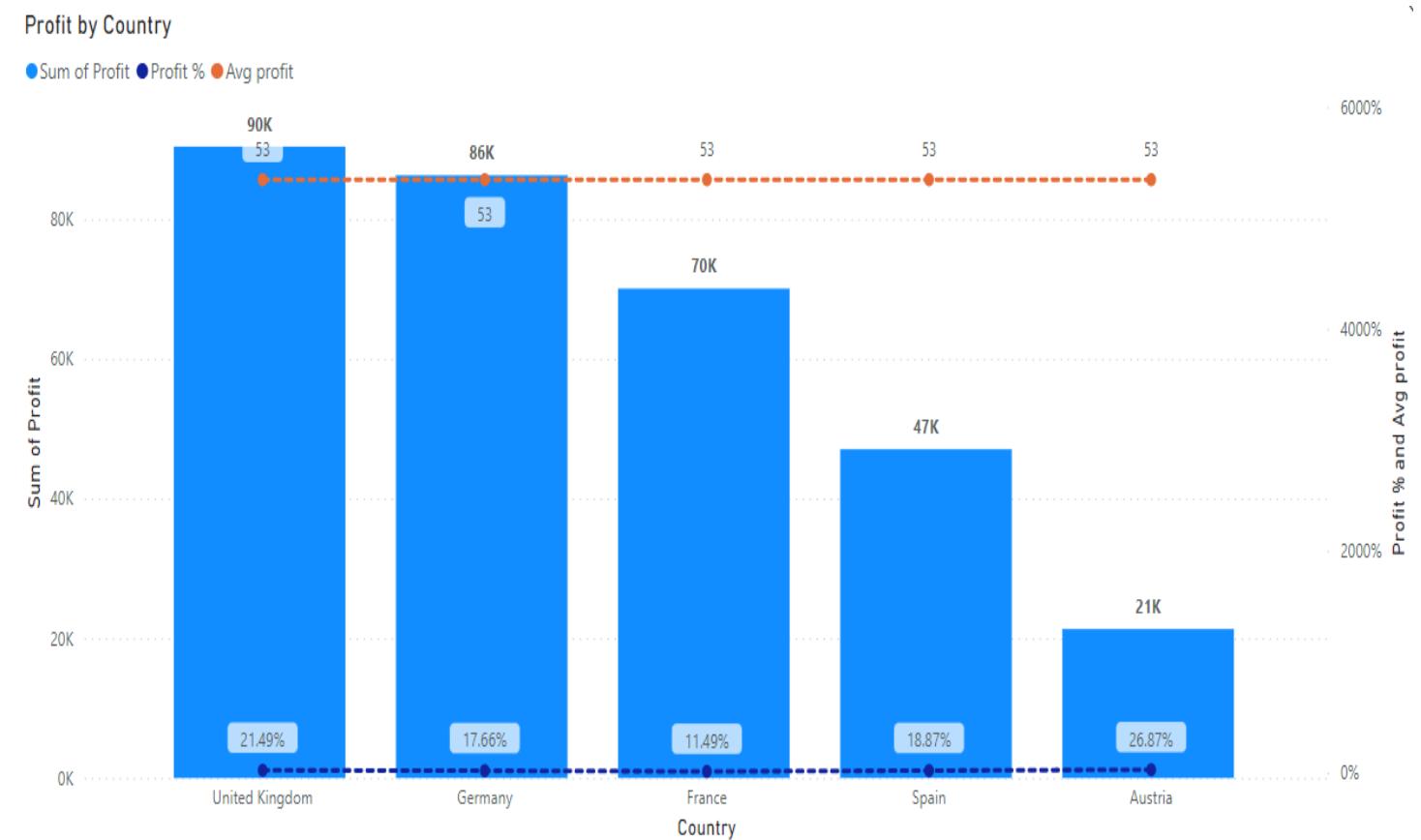
Calculated Measures

Rank country =

```
Var A = RANKX(ALL(ListOfOrders[Country]),[Profit],,,DESC)
Var B = IF(HASONEVALUE('Top N Country'[Top N Country]), MIN('Top
N Country'[Top N Country]),20)
```

Return

```
IF(A<=B,1,0)
```



Calculate Sales & Profit contribution for each sub category?

Product Contribution

Here we are showing sales & profit contribution for each sub category.

Sub-Category	No of Products	%GT Sum of Sales	%GT Sum of Profit
Accessories	14	5.91%	6.89%
Appliances	10	10.40%	0.39%
Art	37	5.06%	7.74%
Binders	38	4.95%	6.32%
Bookcases	10	11.17%	25.19%
Chairs	15	5.66%	-1.53%
Copiers	17	15.95%	11.77%
Envelopes	12	1.22%	2.34%
Fasteners	9	0.46%	0.83%
Furnishings	15	2.96%	2.30%
Labels	11	0.60%	0.41%
Machines	16	5.21%	0.14%
Paper	16	2.31%	5.60%
Phones	19	13.98%	27.96%
Storage	31	9.74%	2.13%
Supplies	14	1.51%	1.53%
Tables	2	2.89%	-0.01%
Total	286	100.00%	100.00%

Apply conditional formatting using dax?

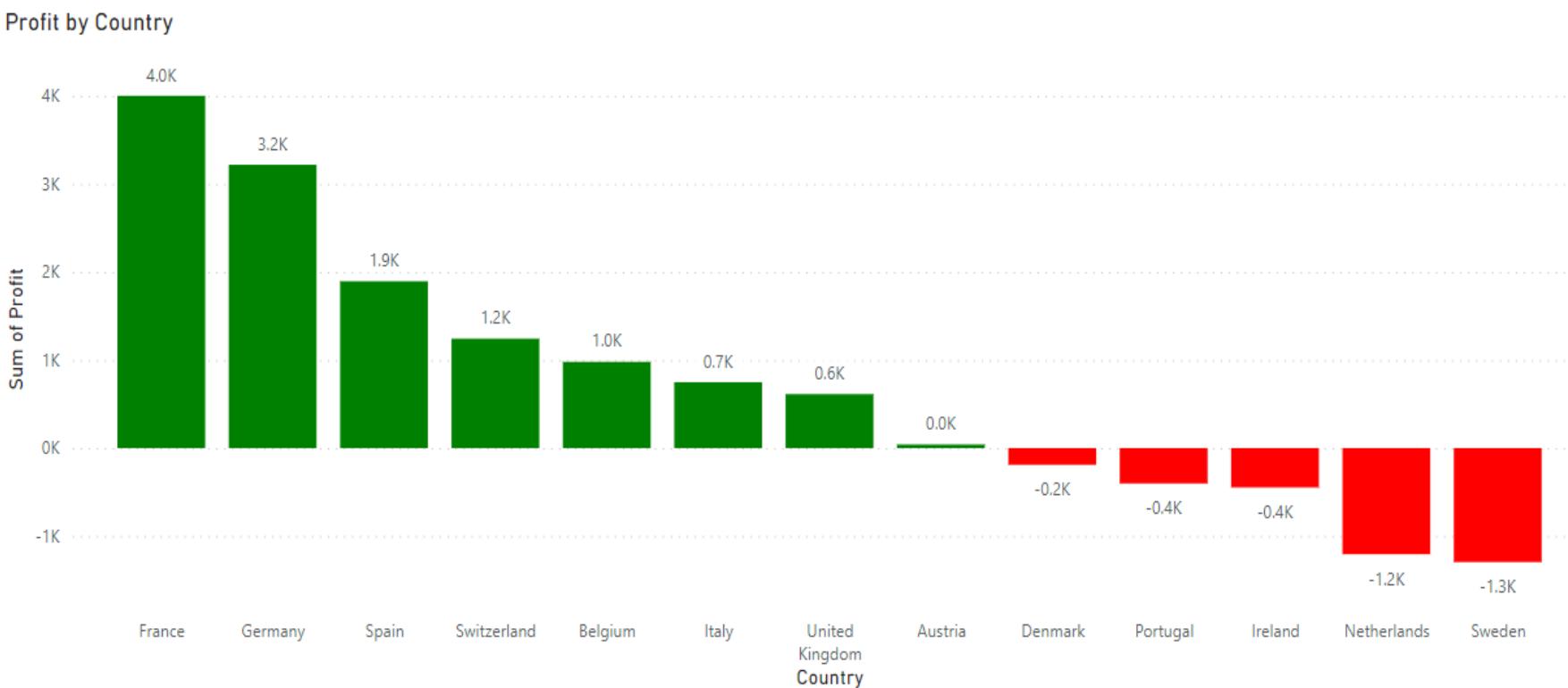
Conditional formating

Here we are showing green bars for Positive profit and red bars for negative profit.

Calculated Measures

Conditional formatting =

```
IF(SUM(OrderBreakdown[Profit])>0,"Green",
IF(SUM(OrderBreakdown[Profit])<0,"Red"))
```



Calculate Total Active products?

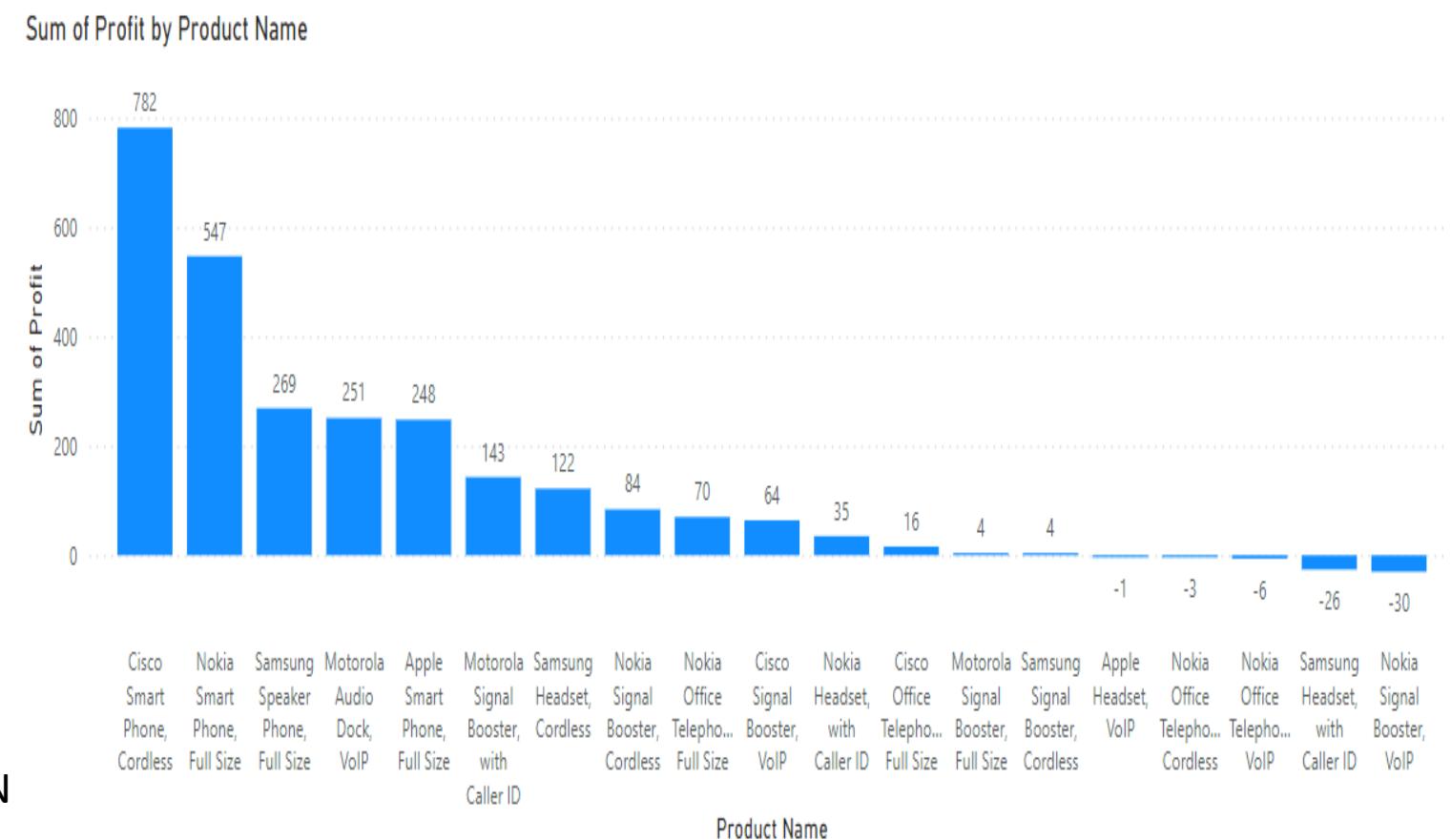
Active Products

Here we are showing active products till date.

Calculated Measures

Active Products till date =

```
IF (
    HASONEFILTER ( OrderBreakdown[Product Name] ),
    IF ( SELECTEDVALUE ( OrderBreakdown[Product Name] ) IN
VALUES ( OrderBreakdown[Product Name] ), 1, 0 ),
    SUMX (
        VALUES ( OrderBreakdown[Product Name] ),
        CALCULATE (
            IF ( SELECTEDVALUE ( OrderBreakdown[Product Name] ) IN
VALUES ( OrderBreakdown[Product Name] ), 1, 0 ))))
```



Calculate 3 month prior and 6 month prior MAT and highlight loss making and profit making products?

MAT

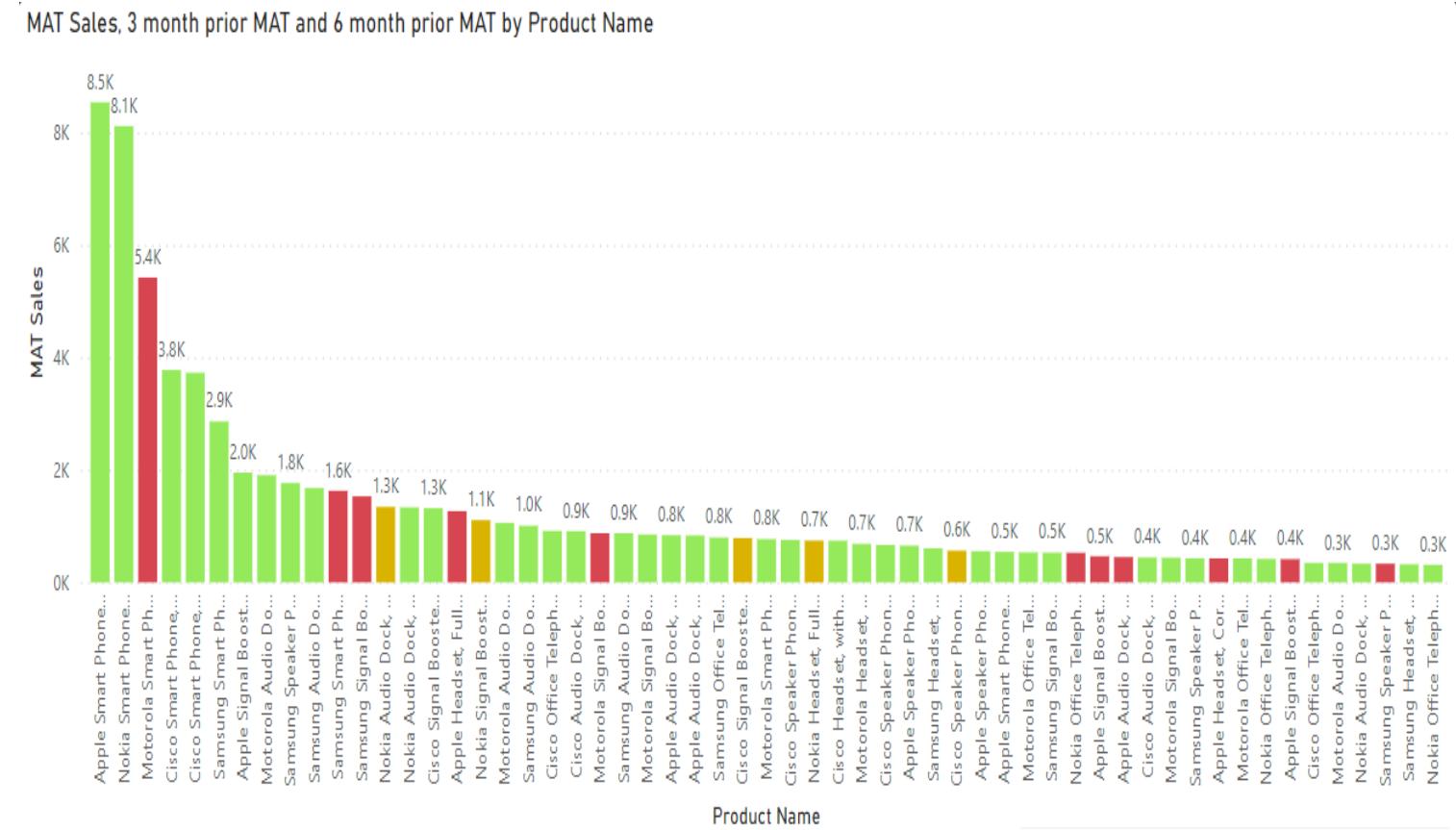
Here we are showing 3 month prior and 6 month prior MAT and highlight loss making and profit making products.

Calculated Measures

3 month prior MAT = CALCULATE([MAT Sales],DATESINPERIOD(ListOfOrders[Order Date].[Date],EOMONTH(MAX(ListOfOrders[Order Date]),-3),-3,MONTH))

MAT conditions =

IF([MAT Sales]< [6 month prior MAT],1,
IF([MAT Sales]< [3 month prior MAT],2,3))





THANK YOU

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