

SESSION WILL BE DIVIDED INTO

1. What is meant by Data Visualizations?
2. Why do we need it?
3. Types of visuals in Power BI
4. Exploring each Visual

SECTION 1

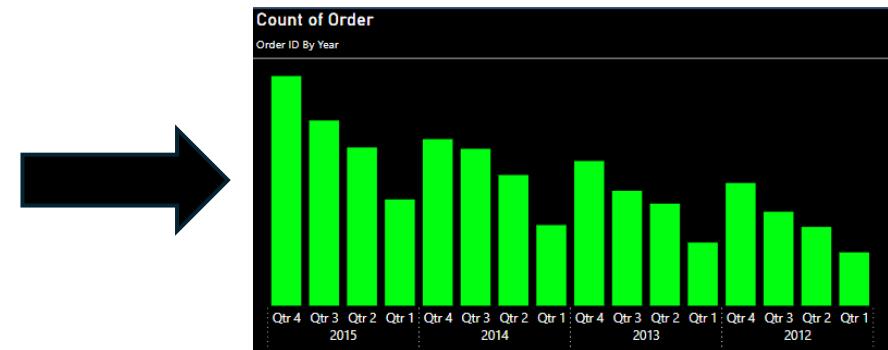
What Is Meant By Data Visualization?

- Data Visualization in Power BI
- Data visualization in Power BI refers to the graphical representation of data, enabling users to easily explore, analyze, and present large amounts of information. It involves transforming raw data into various visual formats such as charts, graphs, and maps, making it easier to draw insights, patterns, and trends.
- Power BI allows users to create interactive visual reports and dashboards.
- It provides a wide variety of customizable visuals to suit different types of data.
- Visuals are dynamic, meaning they respond to user interactions and filters.

SECTION 2

WHY DO WE NEED DATA MODELING?

Row ID	Order ID	Order Date	Ship Date	Ship Mode
40098	CA-2014-AB10015140-41954	11-11-2014	13-11-2014	First Class
26341	IN-2014-JR162107-41675	05-02-2014	07-02-2014	Second Class
25330	IN-2014-CR127307-41929	17-10-2014	18-10-2014	First Class
13524	ES-2014-KM1637548-41667	28-01-2014	30-01-2014	First Class
47221	SG-2014-RH9495111-41948	05-11-2014	06-11-2014	Same Day
22732	IN-2014-JM156557-41818	28-06-2014	01-07-2014	Second Class
30570	IN-2012-TS2134092-41219	06-11-2012	08-11-2012	First Class
31192	IN-2013-MB1808592-41378	14-04-2013	18-04-2013	Standard Class
40099	CA-2014-AB10015140-41954	11-11-2014	13-11-2014	First Class
36258	CA-2012-AB10015140-40974	06-03-2012	07-03-2012	First Class
36259	CA-2012-AB10015140-40974	06-03-2012	07-03-2012	First Class
28879	ID-2013-AJ107801-41383	19-04-2013	22-04-2013	First Class
45794	SA-2012-MM7260110-41269	26-12-2012	28-12-2012	Second Class
4132	MX-2013-VF2171518-41591	13-11-2013	13-11-2013	Same Day
27704	IN-2014-PF1912027-41796	06-06-2014	08-06-2014	Second Class
13779	ES-2015-BP1118545-42216	31-07-2015	03-08-2015	Second Class
39519	CA-2012-AB10015140-40958	19-02-2012	25-02-2012	Standard Class
12069	ES-2015-PJ1883564-42255	08-09-2015	14-09-2015	Standard Class

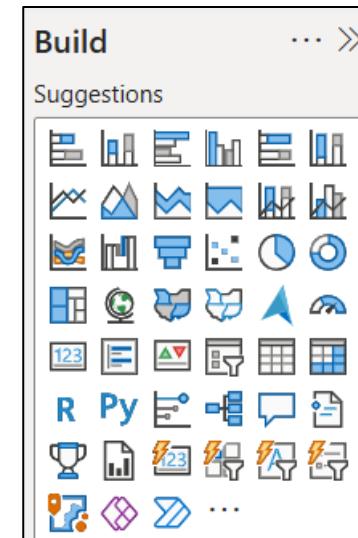


- **A picture is worth a thousand words.**
- Simplifies Complex Data from multiple sources
- Helps in quick decision making.
- Enhances the Data Exploration as well

SECTION 3

Types Of Visuals In Power BI

- Total visuals in power bi are - **42**
- Total certified custom visuals in power bi are - **44**



SECTION 4

Exploring Each Visual

- Chart 1 – Stacked Bar Chart
- When to Use:
 - Use a **Stacked Bar Chart** when you want to compare total values across categories while also breaking down the contribution of subcategories within each bar.
 - Ideal for showing the distribution of parts (subcategories) within a whole across multiple categories, such as sales by region with a breakdown of product categories.
- Why to Use:
 - Use a **Stacked Bar Chart** when you want to compare total values across categories while also breaking down the contribution of subcategories within each bar.

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Exploring Each Visual

- Chart 2 – Stacked Column Chart
- When to Use:
 - Use a **Stacked Column Chart** when you want to compare data across categories, but also need to show how different subcategories contribute to each total.
 - Ideal for visualizing data such as sales by month, with a breakdown of sales from different products for each month.
- Why to Use:
 - A stacked column chart helps you compare overall totals for each category while simultaneously seeing the composition of subcategories.

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- Chart 3 – Clustered Bar Chart
- When to Use:
 - Use when you want to compare multiple categories side by side for the same data series. It's useful for comparing the values of different groups within categories.
 - Ideal for scenarios like comparing sales of different products across multiple regions.
- Why to Use:
 - A clustered bar chart makes it easier to directly compare values between subcategories for each main category. Unlike a stacked bar chart, it places subcategories next to each other, allowing for a more straightforward comparison of individual values across different groups.

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Exploring Each Visual

- Chart 4 – Clustered Column Chart
- When to Use:
 - Use when you want to compare multiple data series across different categories, where each data series is grouped together in clusters for better comparison.
 - Ideal for comparing data like sales by product category over several months, where each month's sales for different products are placed side by side.
- Why to Use:
 - A clustered column chart enables direct comparison of individual subcategories across multiple main categories. It's effective when you need to see how different groups perform within each category and compare them across multiple categories.

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Exploring Each Visual

- Chart 5 – 100% Stacked Bar Chart
- When to Use:
 - Use when you want to compare the percentage distribution of subcategories within each category, ensuring all bars are normalized to the same total (100%).
 - Ideal for visualizing data like market share across different regions where the relative contribution of each company (subcategory) needs to be compared within each region.
- Why to Use:
 - A 100% stacked bar chart helps highlight the **proportional** distribution of subcategories within each category, regardless of the actual total value.

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Exploring Each Visual

- Chart 6 – 100% Stacked Column Chart
- When to Use:
 - Use a **100% Stacked Column Chart** when you want to compare the percentage contribution of subcategories across different categories, with each column normalized to 100%.
 - Ideal for scenarios like showing the percentage breakdown of sales by product type across various regions, where the total sales may differ, but focus on distribution as well
- Why to Use:
 - A 100% stacked column chart emphasizes the relative proportion of each subcategory within a category, making it easy to compare **percentage contributions** across categories. This is particularly useful when you want to focus on proportions rather than absolute values

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Exploring Each Visual

- Chart 7 – Line Chart
- When to Use:
 - Use a **Line Chart** when you want to show trends or changes in data over time, especially when the data points are continuous.
 - Ideal for tracking metrics like sales, temperature, or stock prices over days, months, or years.
- Why to Use:
 - A line chart clearly visualizes **trends and patterns** over time, making it easier to spot upward or downward trends. It's especially effective for identifying growth, declines, or seasonal variations in the data.

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Exploring Each Visual

- Chart 8 –Ribbon Chart
- When to Use:
 - Use a **Ribbon Chart** when you want to visualize rankings or changes in data ranking over time across different categories.
 - Ideal for showing how categories such as product sales or market share shift in rank from one period to another (e.g., monthly, quarterly).
- Why to Use:
 - A ribbon chart provides a unique way to **track rank changes** of categories over time, highlighting both the magnitude of the values and the movement in rank. This makes it ideal for understanding which categories are gaining or losing prominence within a dataset.

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- Chart 9 – Scatter Chart
- When to Use:
 - Use a **Scatter Chart** when you want to show the relationship or correlation between two numerical variables.
 - Ideal for scenarios like comparing sales and profit across different products or identifying trends between two sets of data (e.g., advertising spend vs. sales revenue).
- Why to Use:
 - A scatter chart helps visualize the **relationship between two variables**, allowing you to identify correlations, trends, and outliers.

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Exploring Each Visual

- Chart 11 – Tree Map
- When to Use:
 - Use a **Tree Map** when you want to display hierarchical data or show proportions among categories with a visual representation of their relative sizes.
 - Ideal for scenarios like visualizing sales by region and subregion or product category with their subcategories, where you need to see both the hierarchy and the size of each part.
- Why to Use:
 - A tree map allows you to represent **hierarchical data** in a compact, space-efficient format, making it easy to spot both the size and relative importance of each category within the hierarchy. It's particularly useful for identifying patterns and outliers in large datasets.

SECTION 4

Exploring Each Visual

- Chart 12 – Pie Chart & Donut Chart

Aspect	Pie Chart	Donut Chart
Shape	Like a pie, without a hole in centre.	Like a donut, has a hole in the center
When to use	To show proportions or percentages of a whole.	Like a pie chart, used when to show additional information in center.
When to not use	When to many categories, usually (more than 5).	When to many categories, usually (more than 5).
Data Representation	Shows parts as whole as slices of a pizza.	Represents parts of a whole, but the center hole often makes it easier to read.