How to Create a Monthly and Yearly Line Chart in Power BI

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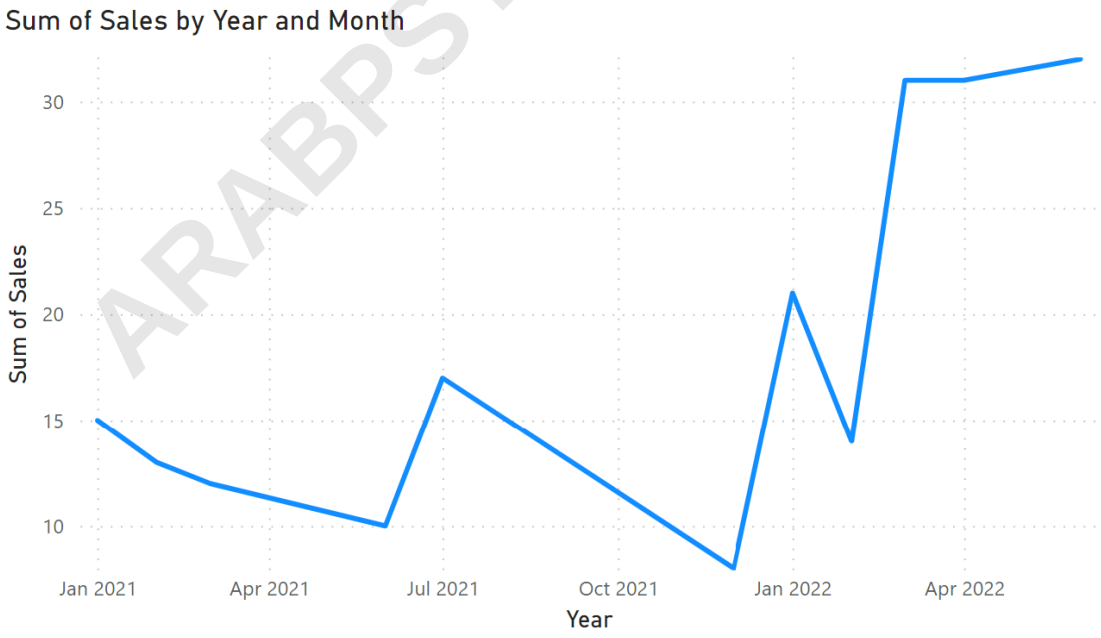
To create a **Line Chart** by Month and Year in **Power BI**, you can follow these systematic steps:

Start by importing your **time-series data** into **Power BI** and ensuring you have a dedicated date column.
Next, click on the "**Line Chart**" visualization option from the **Visualization** pane on the right.
You will need to create a composite month/year column first, then drag that newly created column onto the "Axis" field, and finally, add the desired measure (like sales or count) to the "Values" field.
This careful configuration ensures the chronological integrity of your display, allowing you to track **trends** and patterns over time. You can further customize the chart by adding filters, titles, and other formatting options to enhance the visual representation of your **data**.

In advanced **Power BI** reporting, it is frequently necessary to visualize key performance indicators (KPIs) aggregated specifically by month and year. While **Power BI** automatically handles date hierarchies, sometimes a cleaner, continuous axis is required for clear trend analysis. This specific process involves generating a composite date field to ensure accurate sorting and display, a common requirement when working with continuous **time-series data** across multiple years.

The following detailed, step-by-step example illustrates precisely how to construct a **Line Chart** that accurately displays summarized values categorized by both month and year. This method guarantees that your months are ordered chronologically, regardless of year boundaries, which is crucial for identifying long-term trends:



We will now dive deep into the necessary data modeling and **DAX** calculations required to achieve

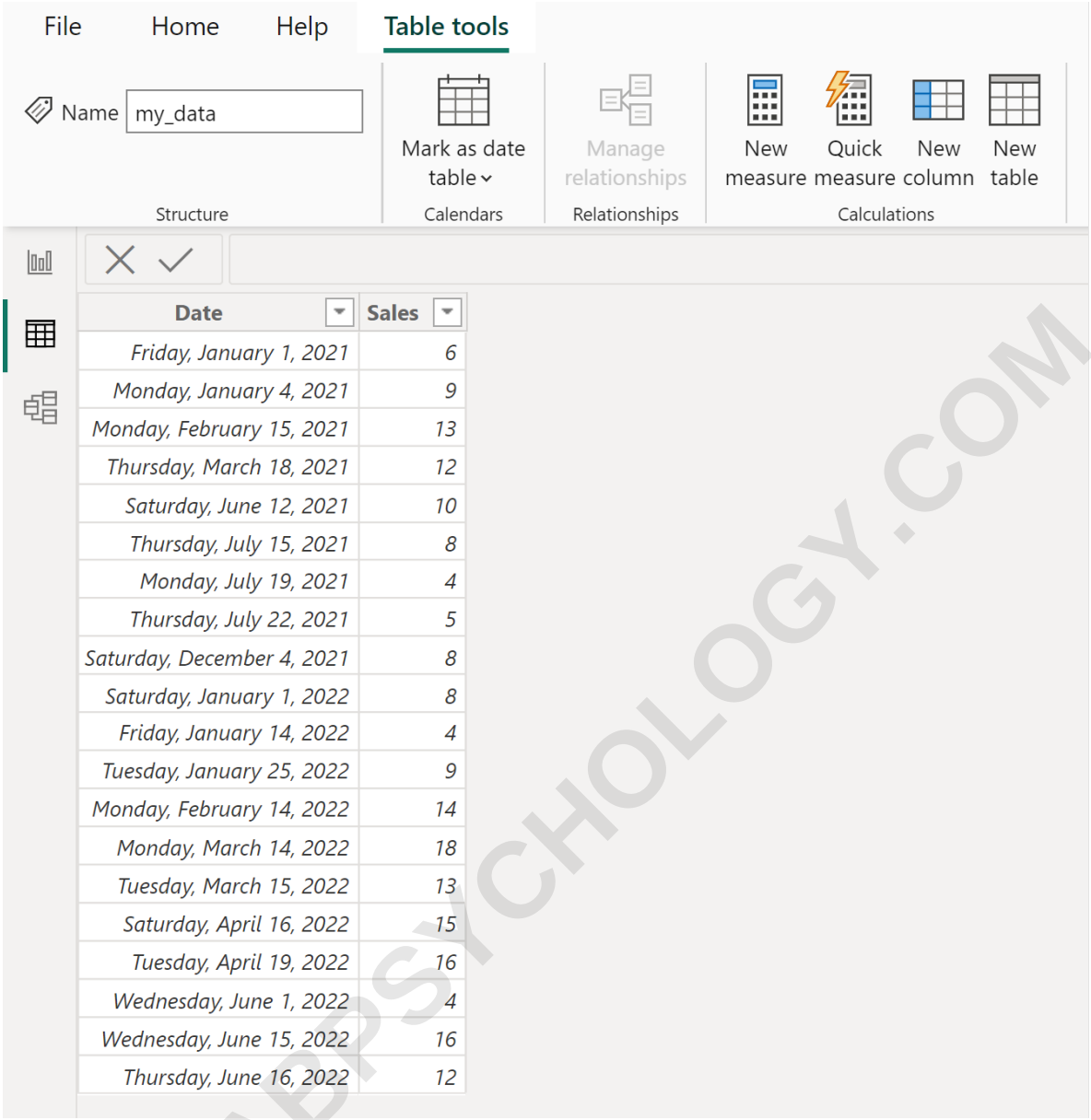
this professional result, focusing on best practices for date handling and **visualization** setup in the Power BI Desktop environment.

Step 1: Loading the Source Dataset into Power BI

The foundation of any meaningful **data visualization** project in **Power BI** is the quality and structure of the imported data. Before creating the chart, we must first load the relevant dataset into the Power BI Desktop environment. This dataset should contain, at minimum, a standard date column and a measure column (such as Sales, Revenue, or Quantity) that we intend to aggregate and visualize over time. For optimal results, ensure your data is clean and prepared prior to loading.

For this specific tutorial, we will utilize a sample dataset that tracks daily sales figures for a company across multiple years. It is crucial that the 'Date' column is recognized by **Power BI** as a Date type; otherwise, the required time-intelligence functions and hierarchy creation will not function correctly. If your date column is imported as a text field, you must convert its data type using the Power Query Editor before proceeding to the next steps of data manipulation and **DAX** calculation.

Below is a representation of the initial dataset we will be working with. Notice the distinct 'Date' column and the 'Sales' column, which will serve as our primary measure for the Y-axis aggregation. This raw data structure is typical for **time-series data** analysis:



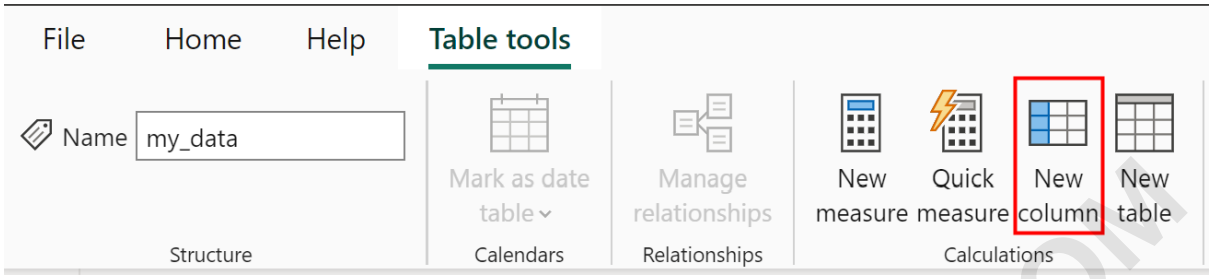
Date	Sales
Friday, January 1, 2021	6
Monday, January 4, 2021	9
Monday, February 15, 2021	13
Thursday, March 18, 2021	12
Saturday, June 12, 2021	10
Thursday, July 15, 2021	8
Monday, July 19, 2021	4
Thursday, July 22, 2021	5
Saturday, December 4, 2021	8
Saturday, January 1, 2022	8
Friday, January 14, 2022	4
Tuesday, January 25, 2022	9
Monday, February 14, 2022	14
Monday, March 14, 2022	18
Tuesday, March 15, 2022	13
Saturday, April 16, 2022	15
Tuesday, April 19, 2022	16
Wednesday, June 1, 2022	4
Wednesday, June 15, 2022	16
Thursday, June 16, 2022	12

Step 2: Generating a Dedicated Month and Year Column (The Crucial Step)

The standard date hierarchy in **Power BI** often breaks dates down into Year, Quarter, Month, and Day. While useful for drill-down functionality, plotting this default hierarchy on a **Line Chart** can sometimes lead to jagged, segmented views if not properly managed. To create a smooth, continuous axis where the chronological order of months spanning multiple years is maintained (e.g., Dec 2022 followed immediately by Jan 2023), we must construct a new calculated column that explicitly combines the month and year into a single chronological string.

To initiate this data modeling change, navigate to the **Table tools** tab found along the top ribbon in the Power BI Desktop interface. This step is executed within the Data View rather than the Report

View. Within this section, locate and click the **New column** icon. This action opens the formula bar, allowing us to input the necessary **DAX** expression to define the new column's values, which will combine the necessary date components into a single label.



Step 3: Understanding the DAX Formula for Date Formatting

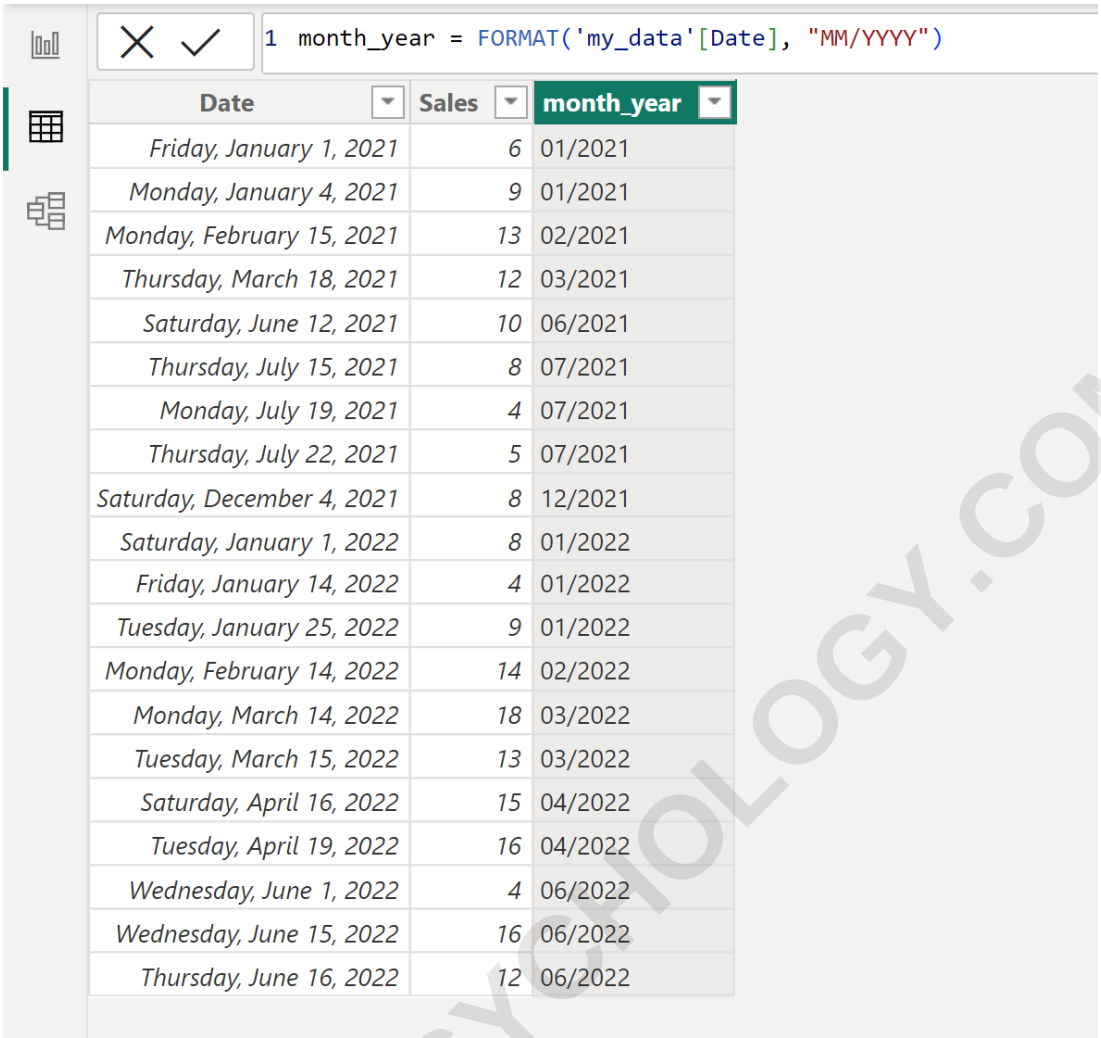
We will now input a powerful **DAX** formula utilizing the `FORMAT` function. The purpose of this function is to take our existing date field and convert it into a standardized text string that clearly represents the Month and Year, ensuring consistency across all records. This newly created column will serve as the backbone of our chart's X-axis, providing the necessary labels.

Type the following precise formula into the newly activated formula bar. Note that `'my_data'` refers to the name of your data table, which may need adjustment based on your actual data model. The output is a formatted text string that is easily readable and chronologically meaningful:

month_year = FORMAT('my_data', "MM/YYYY")

The format string `"MM/YYYY"` instructs **DAX** to extract the two-digit month and the four-digit year, separated by a forward slash. Upon execution, this formula creates the new column named `month_year` that only contains the month and the year of each date, thereby simplifying the subsequent **visualization** steps. Crucially, if you intend to sort this text column later, you must return to the Data View and set its 'Sort by Column' property to the original `Date` column to maintain correct chronological order.

After successfully applying the **DAX** calculation, your data table will be updated to include this new, essential column. Observe how the `month_year` column neatly groups the dates, providing the clean X-axis labels we require for plotting accurate **time-series data**:

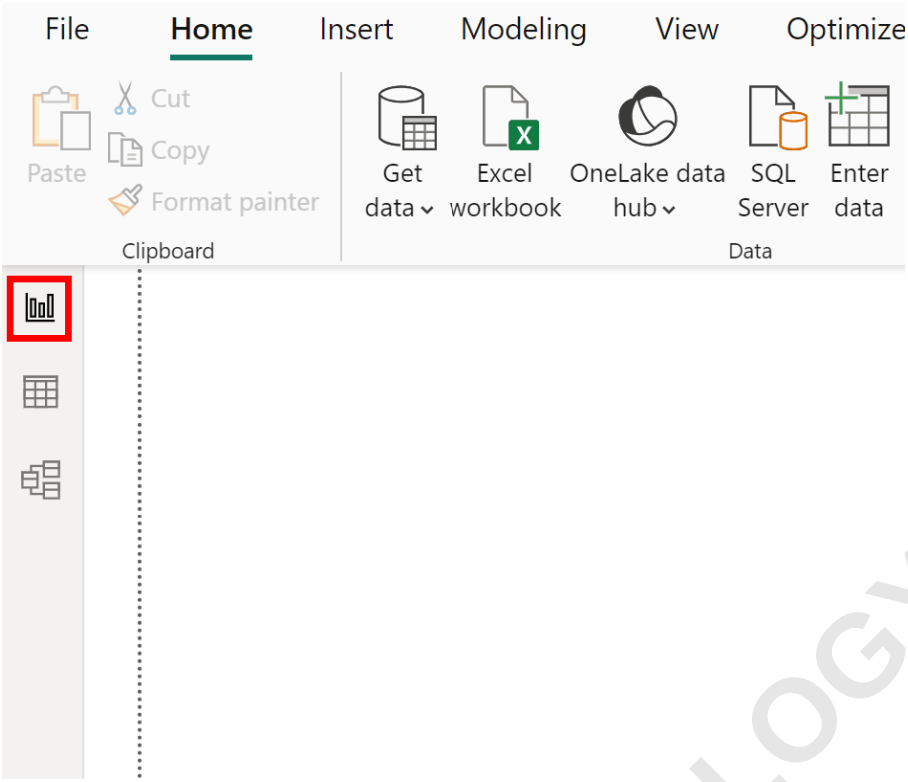


```
1 month_year = FORMAT('my_data'[Date], "MM/YYYY")
```

Date	Sales	month_year
Friday, January 1, 2021	6	01/2021
Monday, January 4, 2021	9	01/2021
Monday, February 15, 2021	13	02/2021
Thursday, March 18, 2021	12	03/2021
Saturday, June 12, 2021	10	06/2021
Thursday, July 15, 2021	8	07/2021
Monday, July 19, 2021	4	07/2021
Thursday, July 22, 2021	5	07/2021
Saturday, December 4, 2021	8	12/2021
Saturday, January 1, 2022	8	01/2022
Friday, January 14, 2022	4	01/2022
Tuesday, January 25, 2022	9	01/2022
Monday, February 14, 2022	14	02/2022
Monday, March 14, 2022	18	03/2022
Tuesday, March 15, 2022	13	03/2022
Saturday, April 16, 2022	15	04/2022
Tuesday, April 19, 2022	16	04/2022
Wednesday, June 1, 2022	4	06/2022
Wednesday, June 15, 2022	16	06/2022
Thursday, June 16, 2022	12	06/2022

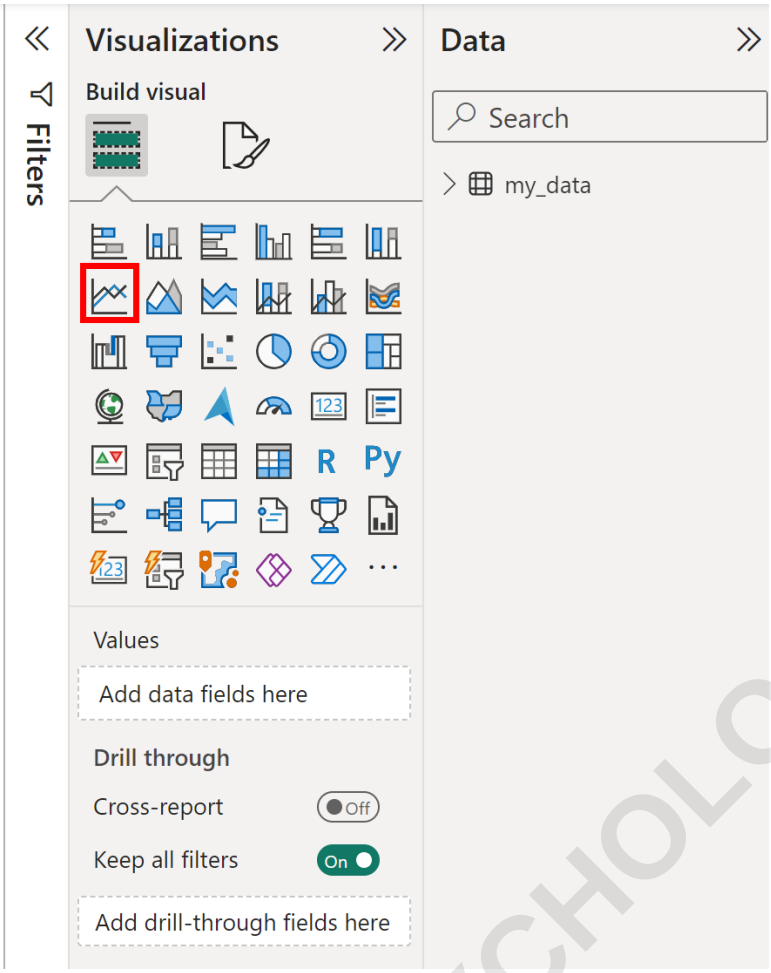
Step 4: Initiating the Line Chart Visualization

With our data model now prepared with the necessary chronological identifier, the next step is to move from the data modeling view back to the primary reporting canvas. This is where we will select and insert the **Line Chart** visual that will display our sales trends. Begin by clicking the **Report View** icon, which is typically situated on the left-hand side navigation pane of the Power BI Desktop application, ensuring you are ready to configure the visual elements.

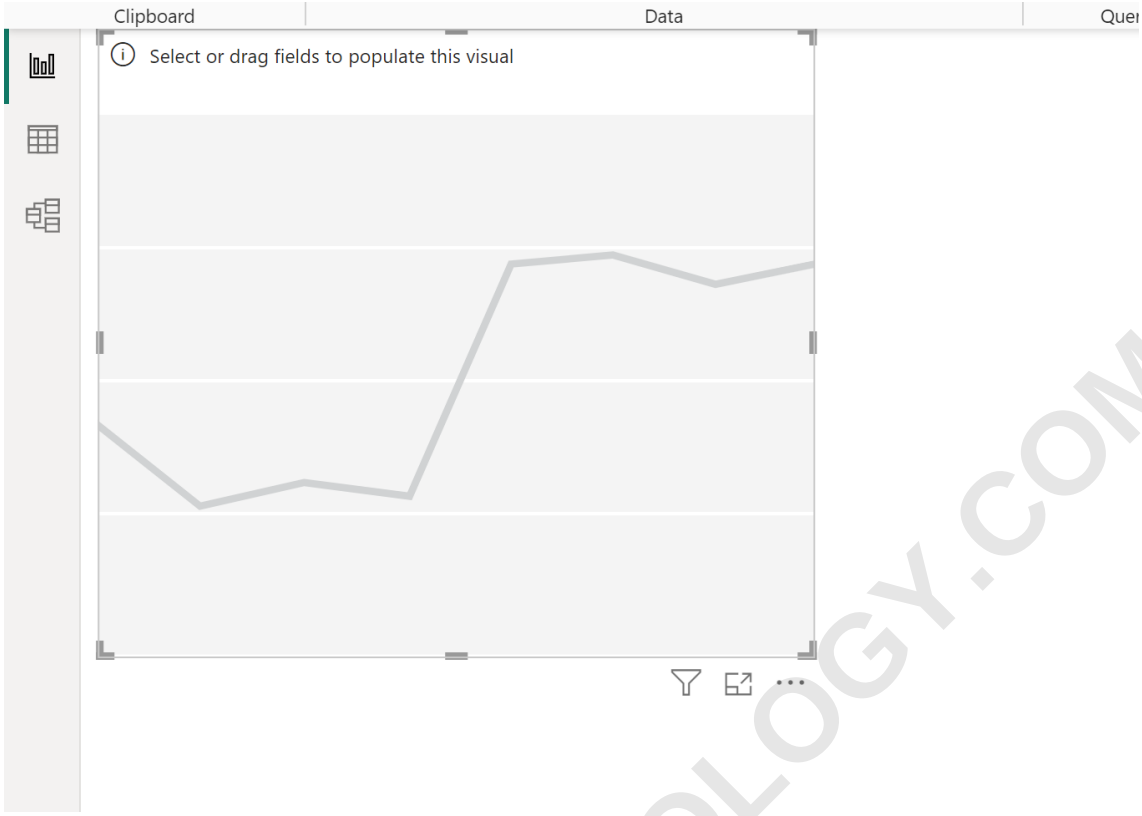


Once you are on the report canvas, direct your attention to the right side of the screen where the **Visualizations** pane is located. This pane hosts all available chart types, organized for easy selection. Locate and click on the **Line chart** icon, which is optimized for displaying trends over time. A basic, empty container for the visual will immediately appear on your report canvas, ready for field configuration.

Selecting the correct visual type is paramount for visualizing **time-series data**, and the **Line Chart** is the industry standard for tracking continuity and change over a chronological axis. Ensure the visual is selected before proceeding to drag fields into the respective wells.



The insertion of the visual results in a blank placeholder element on the report canvas, as shown below. This placeholder is now awaiting the necessary data inputs to populate its axes and values, transforming it into a functional visualization:



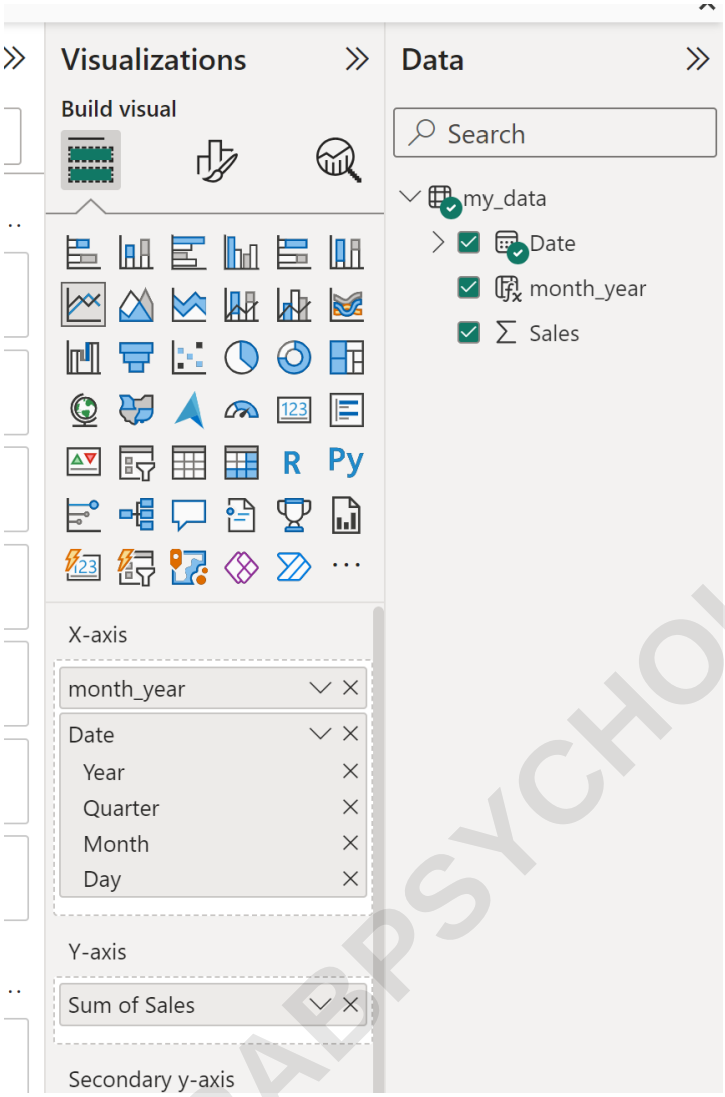
Step 5: Configuring the Visualization Fields (X-axis and Y-axis Setup)

The core configuration involves mapping the relevant columns from our data table to the corresponding fields within the **Line Chart** visual. For a proper month-and-year display, we must utilize both the calculated `month_year` column and the original `Date` column, as this is critical for correct sorting and hierarchy setup, a complexity inherent in plotting text-based date labels chronologically.

Follow this precise sequence for placing the fields into the Visualizations pane:

Drag the custom calculated column, `month_year`, and place it under the **X-axis** label. This provides the correct display name for the chronological points, pulling the formatted text we created in Step 2.
Next, drag the original `Date` variable and place it immediately underneath the `month_year` column, still within the **X-axis** field well. This action sets up the crucial date hierarchy required for accurate sorting of the month/year text field and provides the underlying structure for refinement.
Finally, drag the measure variable, `Sales`, and place it under the **Y-axis** label. This measure determines the height of the line chart points, representing the aggregated sales totals for each corresponding month/year period.

The **Power BI** interface should now reflect this specific arrangement within the fields pane, ensuring that both the display format and the underlying sort logic are present before we proceed to refinement:



Step 6: Fine-Tuning the Axis Hierarchy for Accurate Time Series Display

The dual configuration from the previous step is a prerequisite for correct sorting, but it introduces unnecessary hierarchy elements that clutter the final **Line Chart**. Since we only want to display the Sales aggregated by the specific Month and Year combination, we must remove the redundant components automatically generated by **Power BI** when a date field is added to the axis.

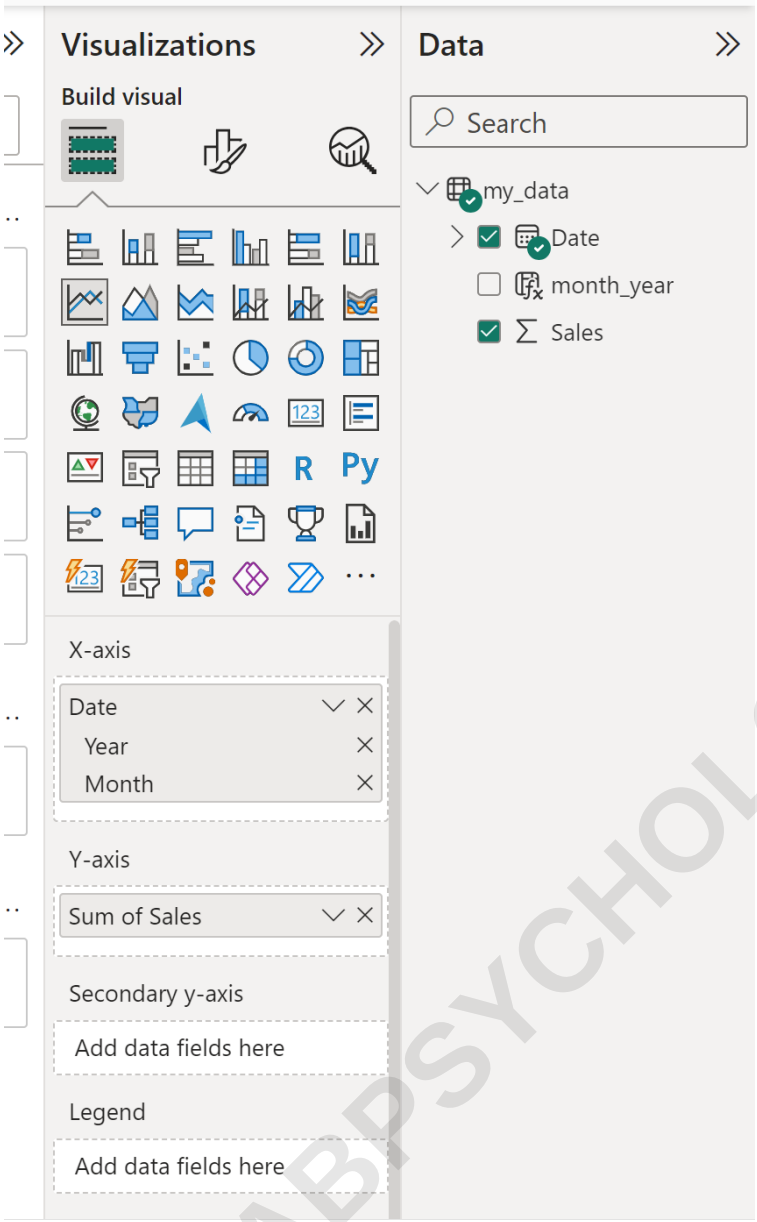
The following cleanup steps are essential to achieve the desired visual output, transforming the chart from a standard drill-down hierarchy into a continuous time-series plot:

First, locate the `month_year` variable within the **X-axis** field well and remove it entirely. Its initial

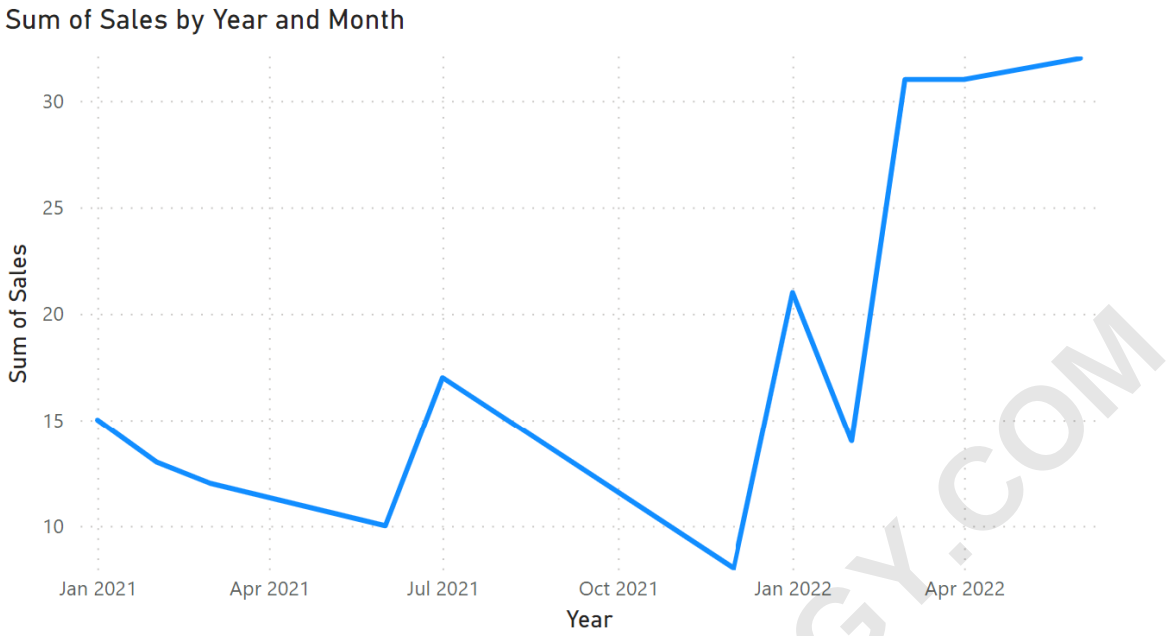
purpose was only to establish the display format, but the `Date` field's hierarchy will manage the final components once the redundant levels are eliminated.
Next, look at the remaining `Date` dropdown menu under the X-axis. This hierarchy automatically contains Year, Quarter, Month, and Day. Click on the dropdown arrow for the `Date` field and explicitly remove the **Quarter** and **Day** options, leaving only Year and Month.

By keeping only the Year and Month components of the original Date hierarchy, combined with the underlying custom column sorting (which, ideally, was set in the Data view for the `month_year` column to sort by the original `Date` column), we force **Power BI** to plot the sales data continuously along the chronological axis without interruption or unnecessary drill-down levels. This results in the clear, continuous trend line sought by analysts.

After successfully removing the unwanted elements, your X-axis field configuration should look simplified, containing only the necessary Year and Month elements:



The culmination of these precise data modeling and **visualization** steps results in a clean, highly readable **Line Chart**. This chart accurately displays the sum of sales aggregated by the month and year combination, clearly illustrating the long-term trends present in your sales **data** set, ready for executive review:



Conclusion: Analyzing Trends and Next Steps

Creating a highly specialized **Line Chart** aggregated specifically by month and year in **Power BI** requires a brief but essential detour into data transformation using **DAX**. By generating a composite date column and then carefully managing the axis hierarchy, we overcome the common limitations of standard date aggregation, resulting in a superior visual representation of **time-series data**. This precise method guarantees that the chronological sequence of data points is respected, regardless of year boundaries.

This technique is indispensable for financial analysts, business intelligence specialists, and data scientists who require accurate trend identification over multi-year periods without unwanted segmentation. Once the foundational chart is built, you are encouraged to further enhance its readability by applying formatting options, such as adjusting the title to clearly state the aggregation level, adding data labels for precision, and utilizing conditional formatting to highlight critical peaks or troughs in the sales performance.

The following resources offer additional tutorials explaining how to perform other common and complex tasks within the **Power BI** environment, helping you unlock the full potential of your business intelligence reporting:

How to Calculate Running Totals in Power BI
A Comprehensive Guide to Using Calculated Columns vs. Measures
Implementing Advanced Filtering Techniques in Power BI Reports