Exercise: Configure aggregations using DAX

Introduction

In your experience with Power BI, you've learned to turn data into insights. In this exercise, you'll use **DAX** to calculate annual and quarterly profits and analyze data sets to create a clear financial story.

By completing this exercise, you'll demonstrate your ability to:

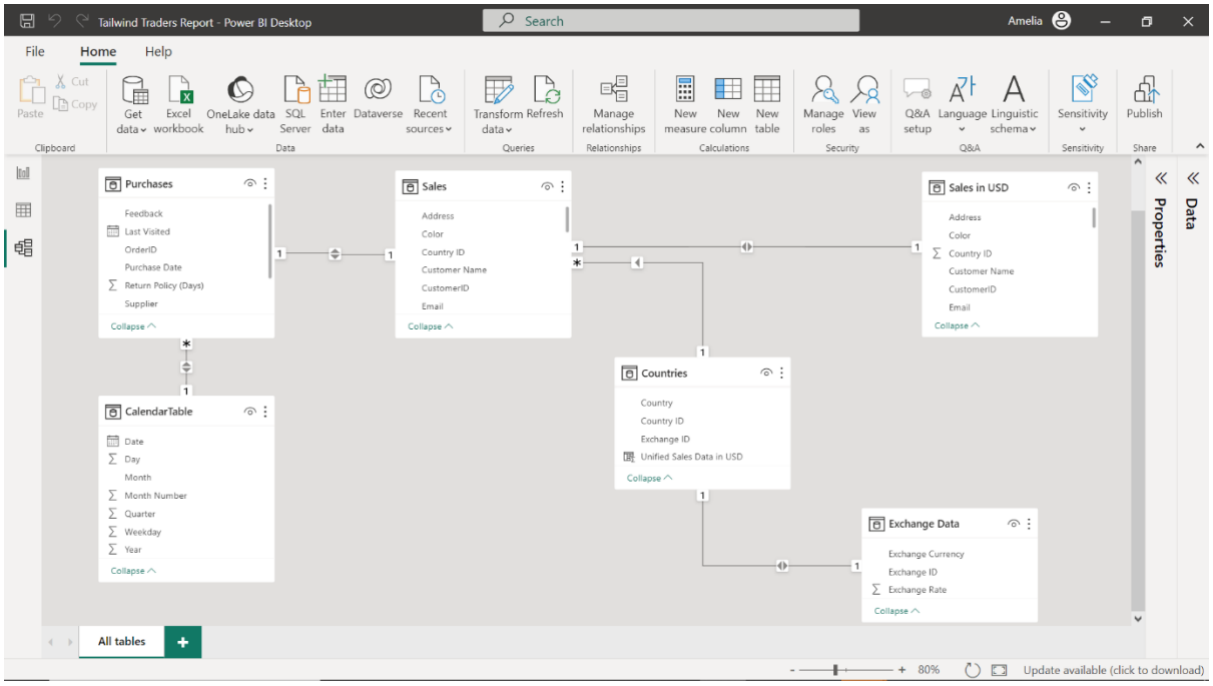
- Create time-based summaries for displaying quarterly, annual, and year-to-date profit data.
- Determine median sales volume to assess Tailwind Traders' performance stability.
- Utilize the Performance Analyzer tool to enhance report generation and ensure fast loading times.

Case study

Tailwind Traders needs to generate insights into its financial performance to inform its strategic decisions for the upcoming business year. The insights it requires include time-based summaries that display quarterly and annual profits and year-to-date breakdowns. The company also requires its median sales volume to assess its financial performance. Let's help Tailwind Traders create this report.

Instructions

Locate and open the **Tailwind Traders Report.pbix** Power BI file you created in the previous exercise. If you followed the steps from the previous exercise correctly, then your data model should resemble the one displayed in the screenshot below. Follow the prompts to configure aggregations for this data model using DAX.



Step 1: Calculate Yearly Profit margin

1. Create a new measure for the **Sales in USD** table.

2. In the formula bar, create a new column that represents the yearly profit margin. This margin should be derived by dividing the gross revenue by the total net revenue within the **Sales in USD** table.

Step 2: Calculate Quarterly Profit

1. Right-click on the **Sales in USD** table in the **Fields** pane and choose **New Measure**.

2. Create a new measure for quarterly profit. Consider using a function that aggregates data until the end of the current quarter. To achieve this, you must reference the calculated yearly profit and a calendar table.

Tip: Consider leveraging the **DATESQTD** function in **DAX** to break down yearly data into quarterly segments.

Step 3: Calculate Year-to-Date Profit

1. Right-click on the **Sales in USD** table in the **Fields** pane and select **New Measure**.

2. Create a new measure for the year-to-date profit. You'll need a function that aggregates data from the start of the year up to the current date.

Tip: **TOTALYTD** is a function to aggregate data on a year-to-date basis. Reference the yearly profit and a calendar table to guide your calculation.

Step 4: Calculate Median Sales

1. Right-click on the **Sales in USD** table in the **Fields** pane and choose **New Measure**.

2. In the formula bar, create a new measure to represent the median sales. Consider the statistical functions in **DAX** that can help you find the middle value of gross revenue.

Hint: The median separates the higher and lower half of a data sample. **MEDIAN** is a **DAX** function that can help you derive this directly from your sales data.

Step 5: Access the Performance Analyzer

1. Find and select the **Performance Analyzer** option within the **View** tab.

2. Create an empty Card visual and drag the **Yearly Profit Margin** field to the **Fields** well. Repeat this process for the **Median Sales**, **Quarterly Profit,** and **YTD Profit**.

3. Begin recording the performance of the card visuals using the Performance Analyzer's recording feature.

4. Refresh your reports to test their performance.

5. Observe the list of all visual items in your report and their respective load times. Ensure the **DAX** query time of visual items is < 200ms and note any slow-loading visuals.

6. Select **Stop** and remove all Card visuals, resulting in a blank Canvas.

Conclusion

You've helped influence Tailwind Traders' strategic decisions by calculating profits and assessing sales consistency. In the data world, accuracy and speed are key. You've also demonstrated the ability to configure calculations using DAX.