

# Microsoft Fabric

Fabric Analyst in a Day

Lab 1

Version: August 2024



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## Document Structure

The lab includes steps for the user to follow along with associated screenshots that provide visual aid. In each screenshot, sections are highlighted with orange boxes to indicate the area(s) user should focus on.

**Note:** Some of the screenshots may be out of date due to ongoing product updates.

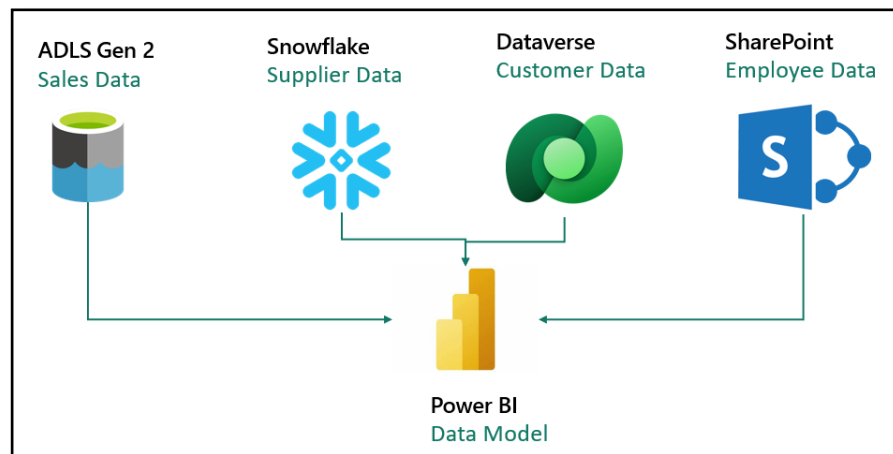
## Scenario / Problem Statement

Fabrikam, Inc. is a wholesale novelty goods distributor. As a wholesaler, Fabrikam's customers are mostly companies who resell to individuals. Fabrikam sells to retail customers across the United States including specialty stores, supermarkets, computing stores, and tourist attraction shops. Fabrikam also sells to other wholesalers via a network of agents who promote the products on Fabrikam's behalf. While all Fabrikam's customers are currently based in the United States, the company is intending to push for expansion into other countries / regions.

You are a Data Analyst in the Sales team. You collect, clean, and interpret data sets to solve business problems. You also put together visualizations like charts and graphs, write reports, and present them to the decision-makers in the organization.

In order to draw valuable insights from the data, you pull data from multiple systems, clean it and mash it together. You pull data from the following sources:

- **Sales Data:** comes from the ERP system and data is stored in an ADLS Gen2 database. It gets updated at noon / 12 PM every day.
- **Supplier Data:** comes from different suppliers and data is stored in a Snowflake database. It gets updated at midnight / 12 AM every day.
- **Customer Data:** comes from Customer Insights and data is stored in Dataverse. The data is always up to date.
- **Employee Data:** comes from the HR system; it is stored as an export file in a SharePoint folder. It gets updated every morning at 9 AM.



You are currently building a dataset on Power BI Premium that pulls the data from the above source systems to satisfy your reporting needs as well as provide end users with the ability to self-serve. You use Power Query to update your model.

**You are facing the following challenges:**

- You need to refresh your dataset at least three times a day to accommodate the different update times for the different data sources.
- Your refreshes take a long time as you need to do a full refresh every time to capture any updates that happened to the source systems.
- Any errors in any of the data sources that you are pulling from will result in your dataset refresh breaking. A lot of times the employee file does not upload on time resulting in your dataset refresh breaking.
- It takes a very long time to make any changes to your data model as Power Query takes a long time to refresh your previews, given the large data sizes and complex transformations.
- You need a Windows PC to use Power BI Desktop even though the corporate standard is Mac.

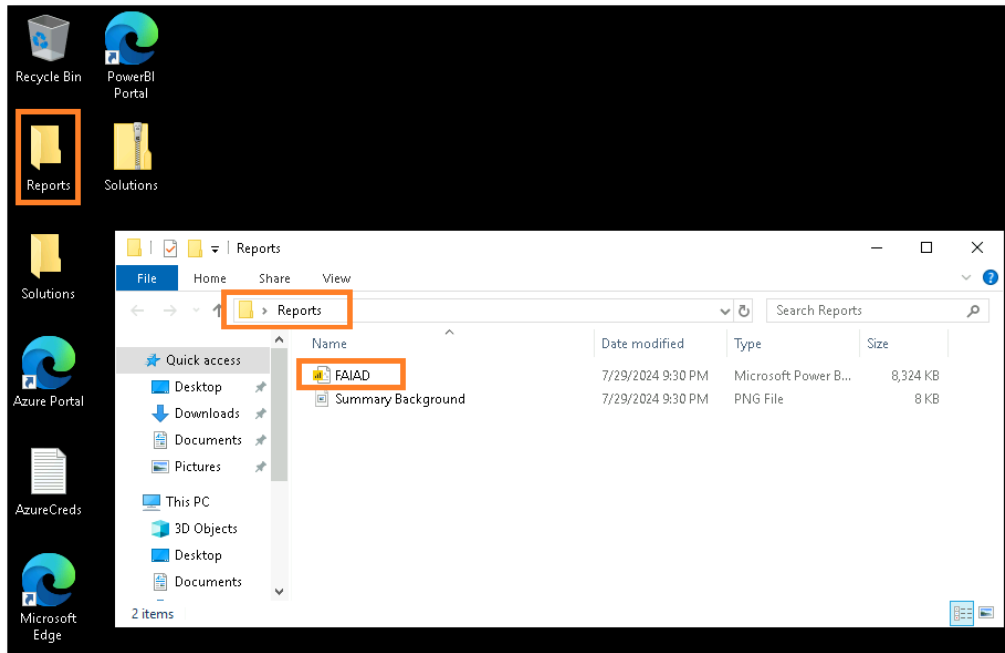
You heard about Microsoft Fabric, and decided to try it to see if it will address your challenges.

## Overview of Power BI Desktop Report

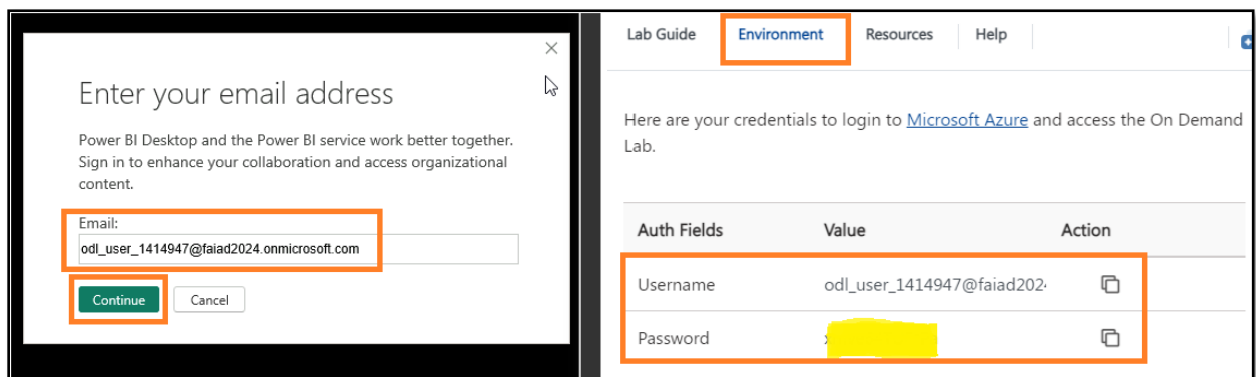
Before we start with Fabric, let's look at the current Report in Power BI Desktop to understand the transformations and the model.

### Task 1: Set up Power BI Desktop in lab environment

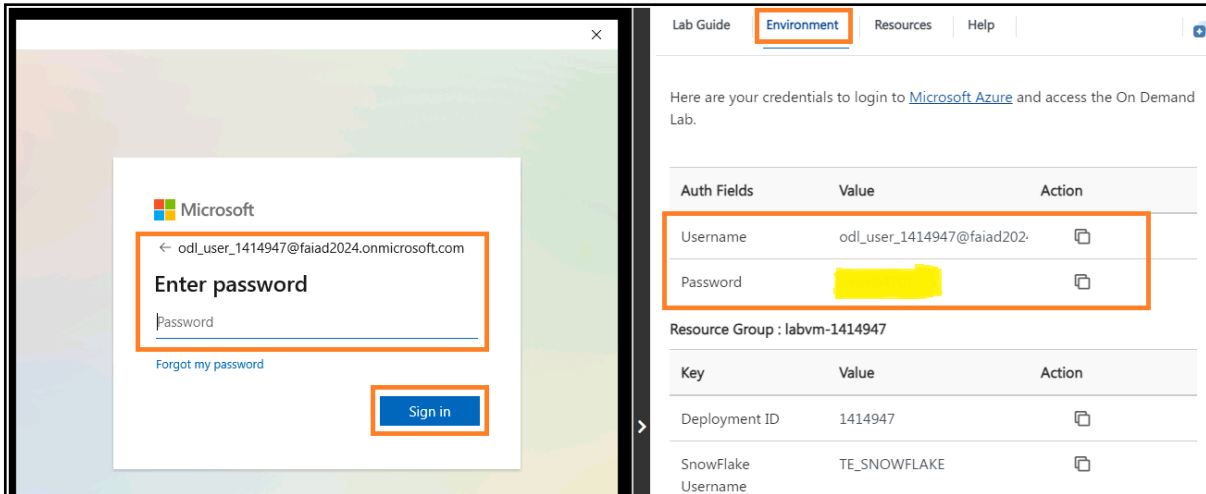
1. Open the **FAIAD.pbix** located in **Reports** folder on the **desktop** of your lab environment. The file will open in Power BI Desktop.



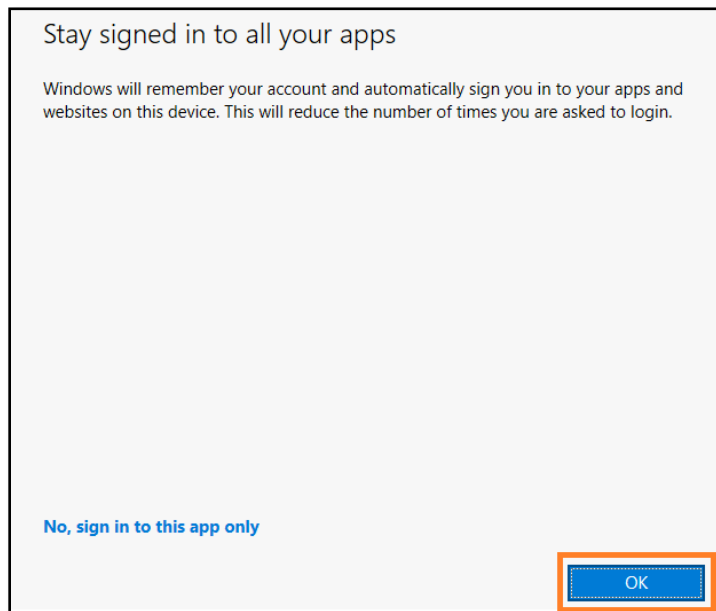
2. Enter your email address dialog opens. Navigate to **Environment Details** tab on the right panel in the lab environment.
3. Copy the **Username** and paste it in the **Email** textbox of the dialog.
4. Select **Continue**.



5. Sign in dialog opens. Reenter the **Username** by copying it from the **Environment Details** tab.
6. Select **Next**.
7. In the next dialog, enter the **Password Credentials** by copying it from the **Environment Details** tab.
8. Select **Sign in**.



9. **Stay Signed in to all your apps** dialog opens. Select **OK**.

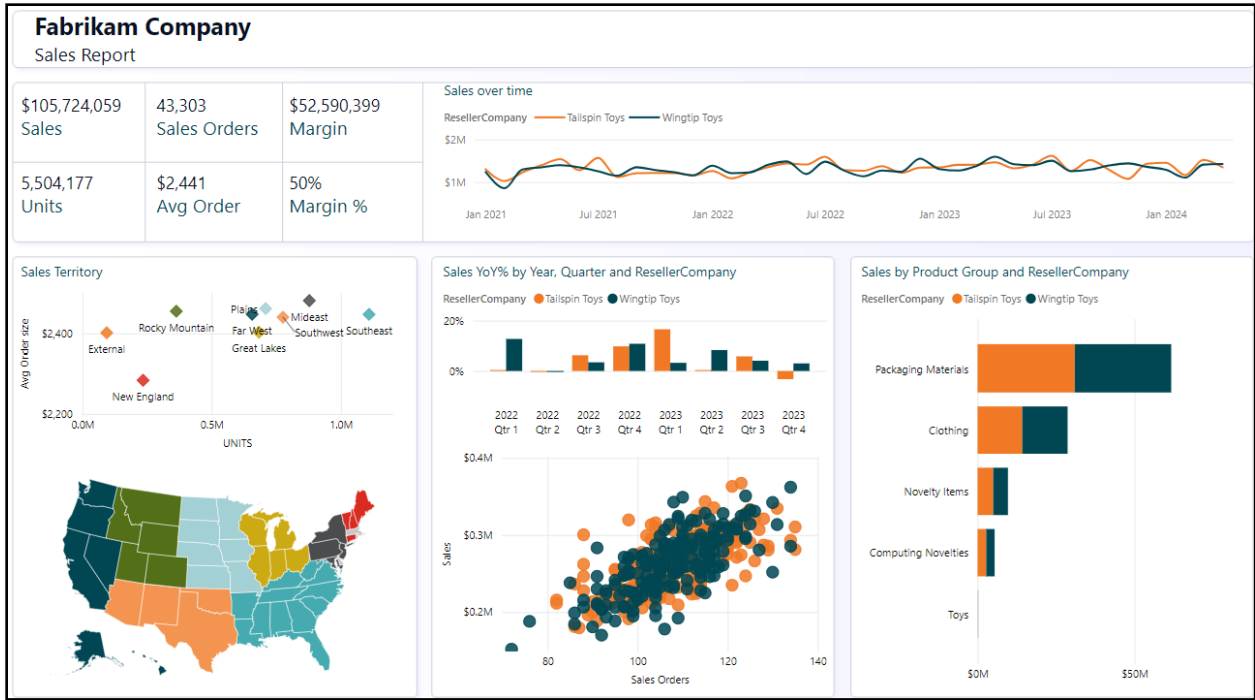


10. **You're all set!** dialog opens. Select **Done**.

Power BI Desktop will now open.

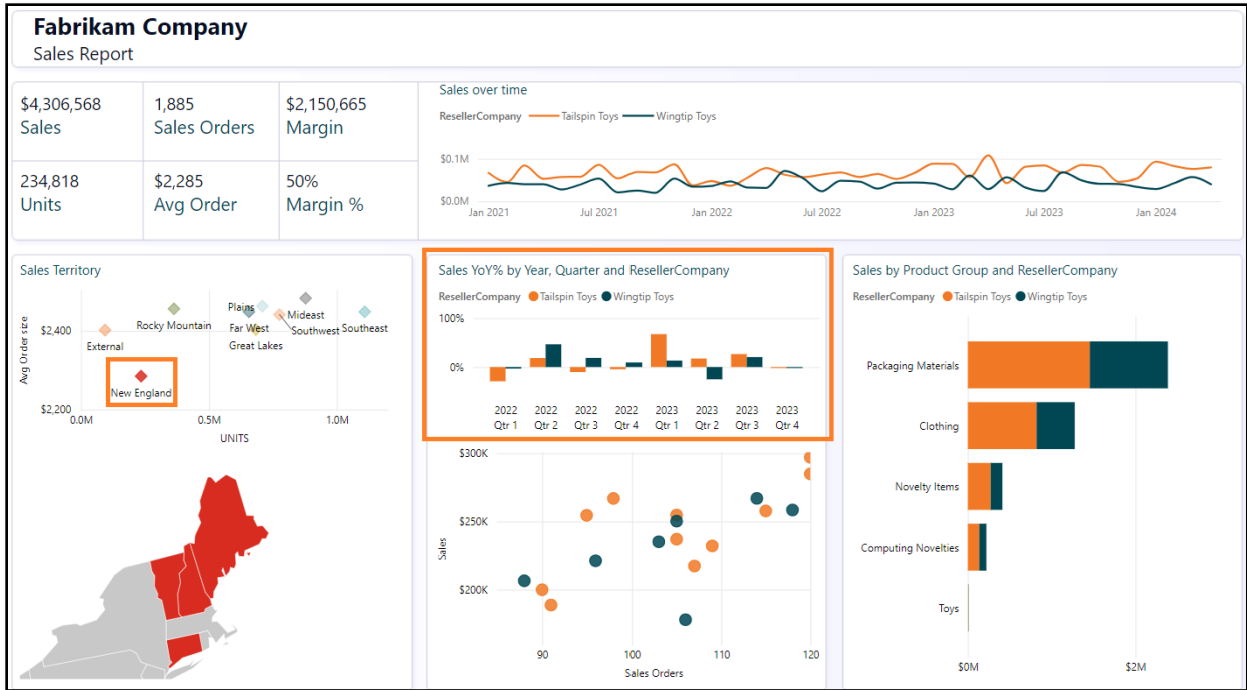
## Task 2: Analyze Power BI Desktop Report

The report below analyzes Sales for Fabrikam. KPIs are listed on the left top of the page. The remaining visuals highlight Sales over time, by Territory, Product Group, and Reseller Company.

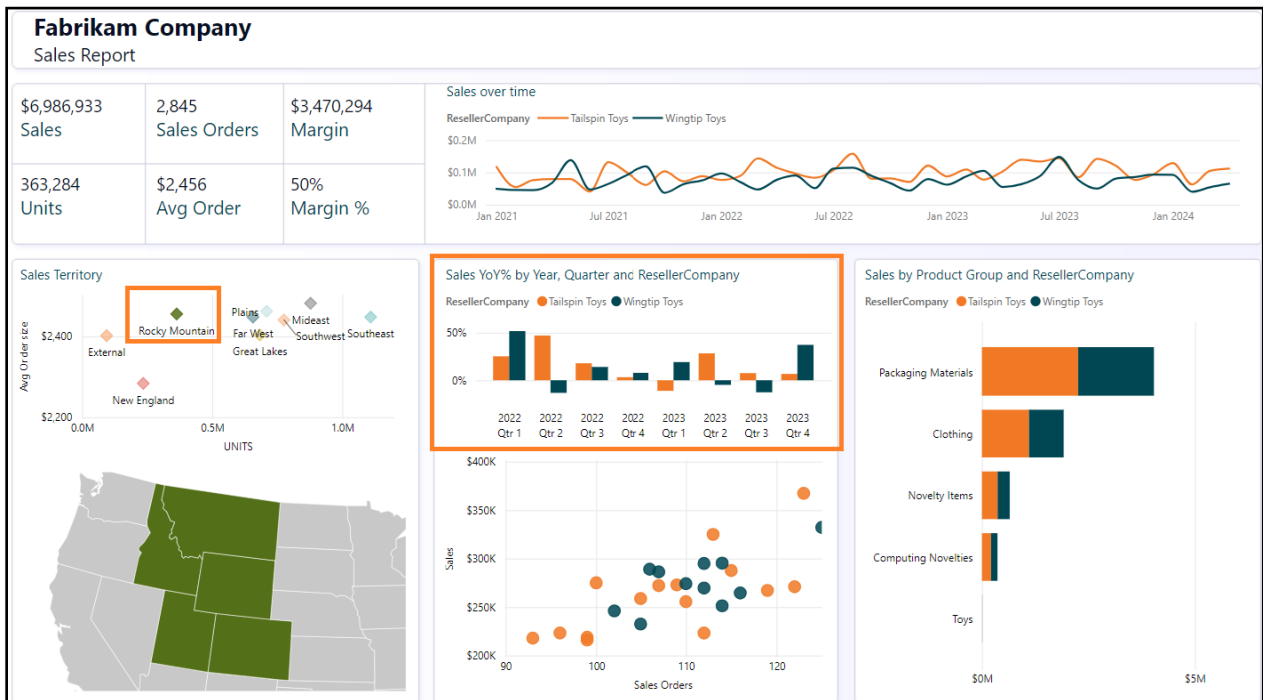


**Note:** In this training, we are focusing on data acquisition, transformation, and modeling using tools available in Fabric. We will not be focusing on report development or navigation. Let's spend a couple of minutes understanding the report and move to the next steps.

- Let's analyze data by Sales Territory. Select **New England** from the **Sales Territory** (Scatter plot) visual. Notice from the Sales over time, Reseller Tailspin Toys has more sales compared to Wingtip Toys in New England. If you look at the Sales YoY% column chart you will notice that Wingtip Toys sales growth has been low and declining quarter over quarter during the past year. After a small rebound in Q3 it went down again in Q4.



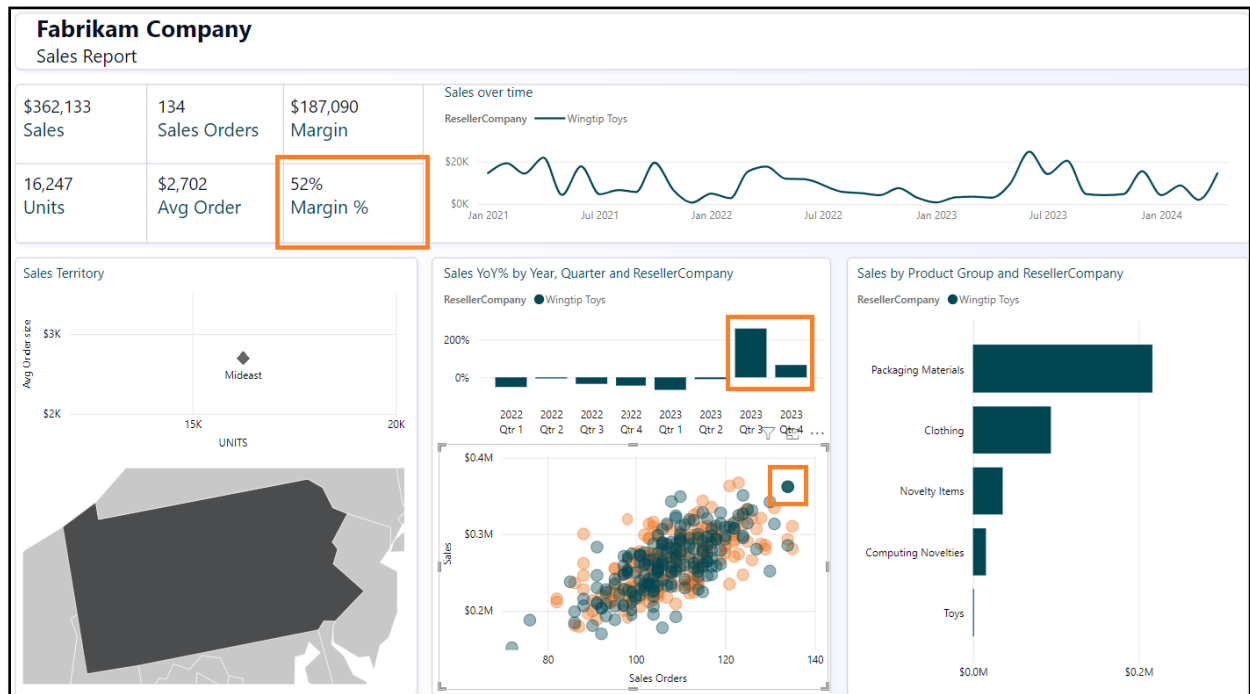
2. Let's compare this to the Rocky Mountain territory. Select **Rocky Mountain** from **Sales Territory** (Scatter plot) visual. Notice in the Sales YoY% column chart, sales for Wingtip Toys has increased dramatically in 2023 Q4 after being low for the previous two quarters.



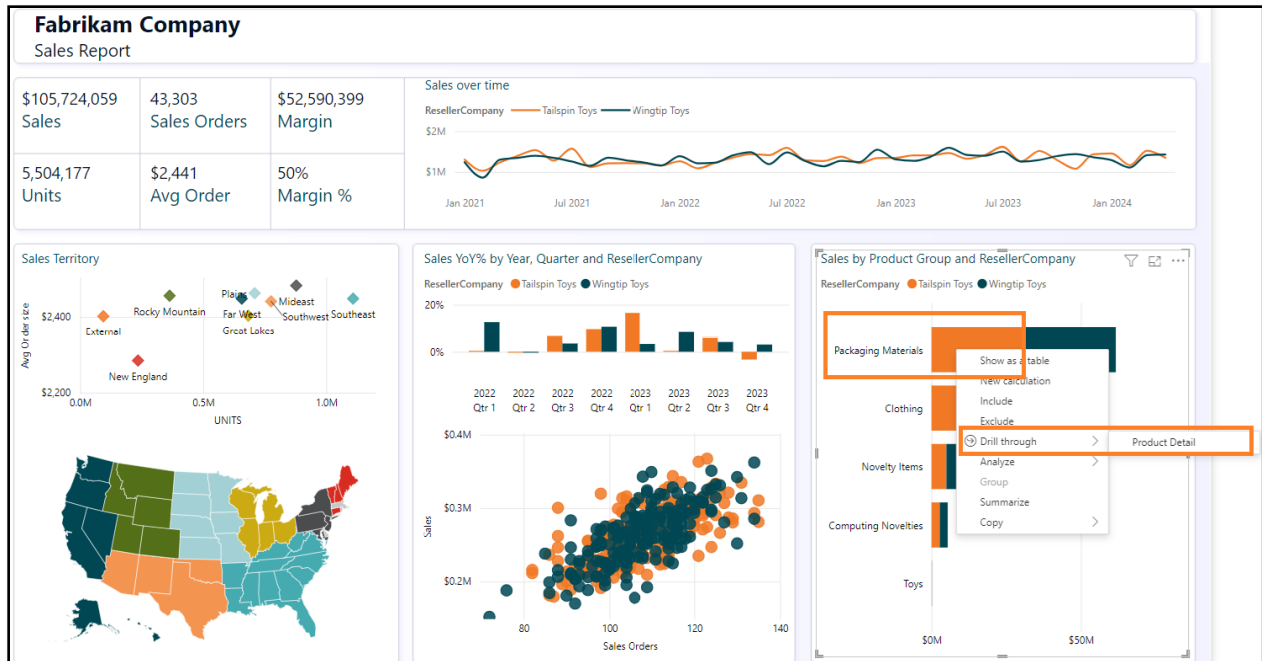
3. Select **Rocky Mountain** from **Sales Territory** to remove the filter.



- From the Scatter plot visual on the bottom center of the screen (Sales Orders by Sales) select the outlier on the top right (4<sup>th</sup> quadrant). Notice the margin % is 52%, which is above the average of 50%. Also, the Sales YoY% has gone up the last two quarters of 2023.

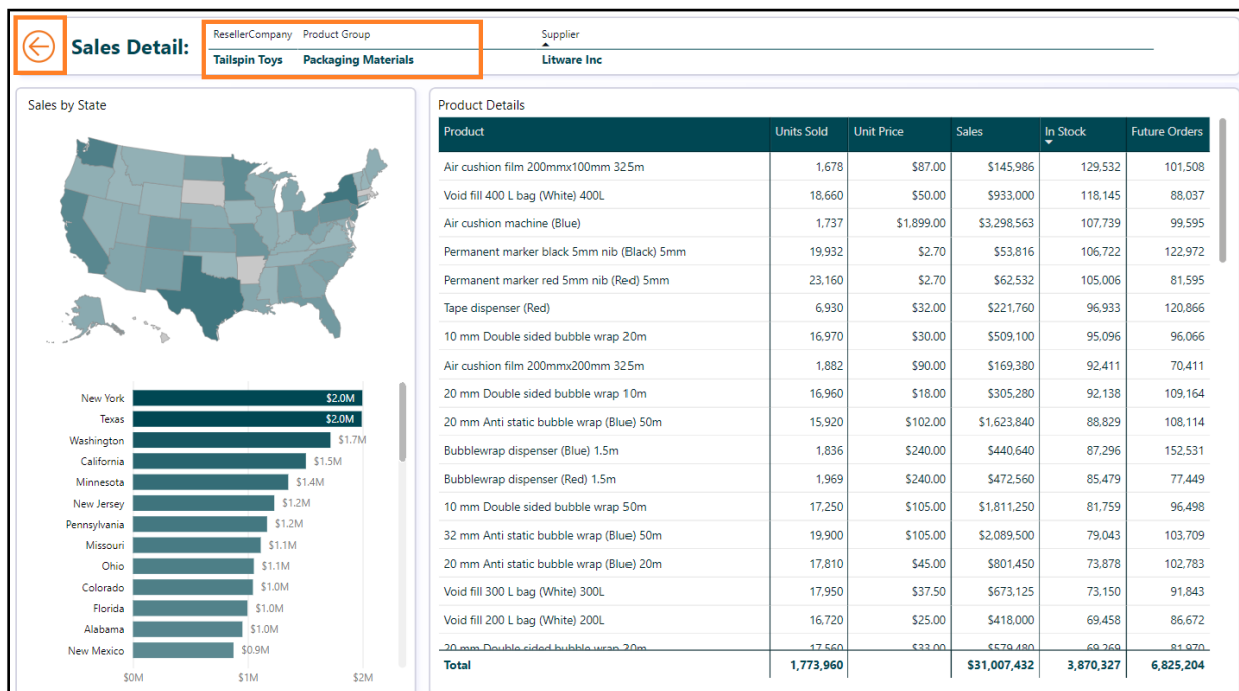


- Select the outlier Reseller in the Scatter plot visual to **remove the filter**.
- Let's get the Product details by Product Group and Reseller. From the Sales by Product Group and Reseller Company bar chart visual, **right click on the Packaging Materials bar for Tailspin Toys** and from the dialog select **Drill through -> Product Detail**.



You will be navigated to the page which provides the Product Details. Notice there are some future orders in place as well.

- Once you are done reviewing this page, select the **Ctrl+back arrow** on the top right of the page to be navigated back to the Sales Report.

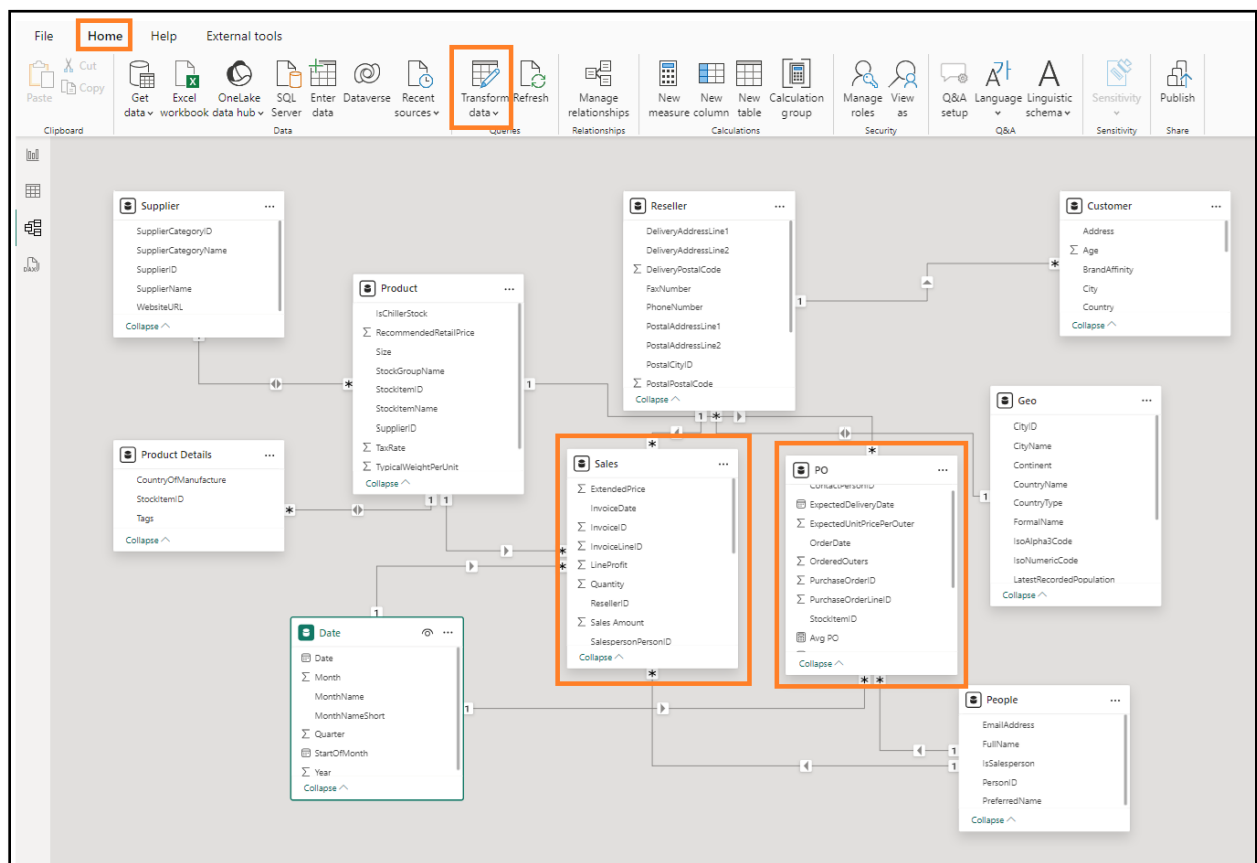


- Feel free to further analyze the report. Once ready let's look at the model view. From the left panel, select **Model view icon**. Notice there are two fact tables, Sales and PO.

- Granularity of Sales data is by Date, Reseller, Product, and People. Date, Reseller, Product, and People connect to Sales.
- Granularity of PO data is by Date, Product, and People. Date, Product, and People connect to PO.
- We have Supplier data by Product. Supplier connects to Product.
- We have Reseller's location data by Geo. Geo connects to Reseller.
- We have Customer information by Reseller. Customer connects to Reseller.

### Task 3: Review Power Queries

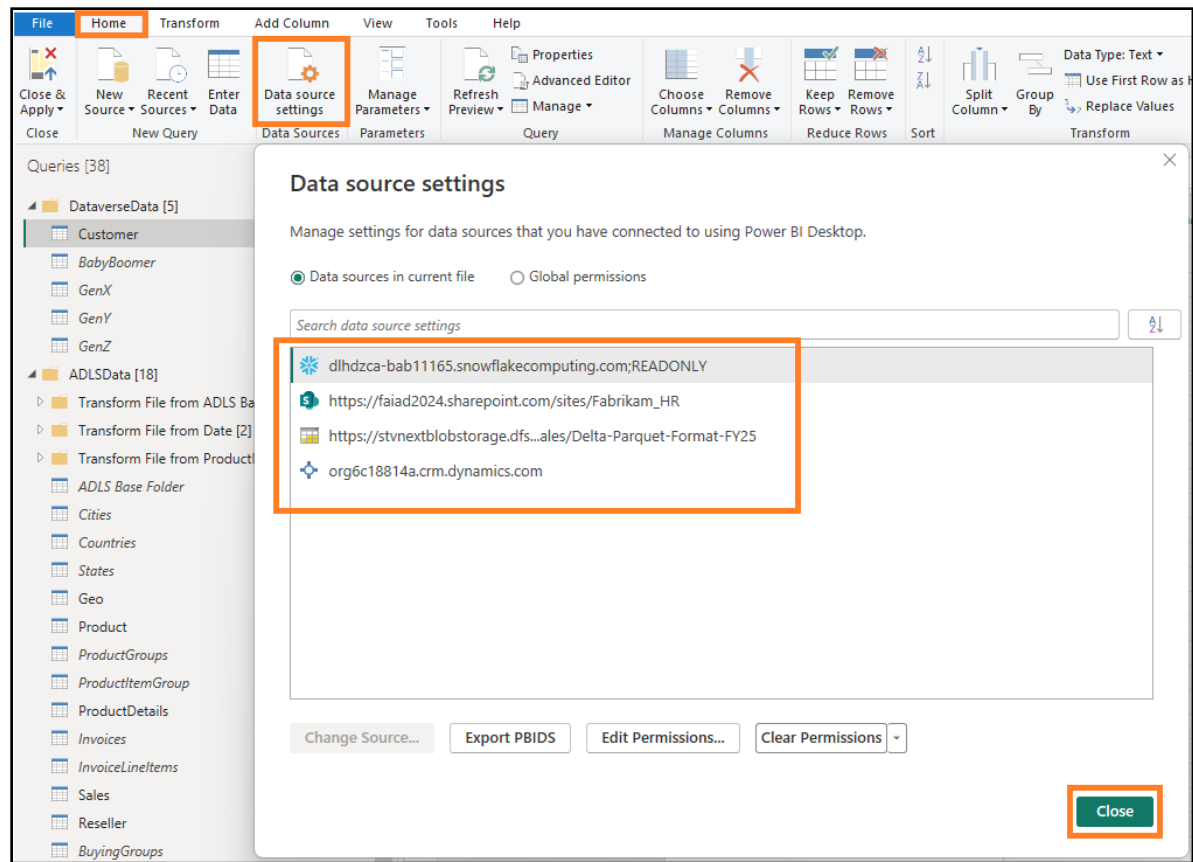
- Let's look at Power Query to understand the data sources. From the ribbon select **Home -> Transform data**.



- Power Query window opens. From the ribbon, select **Home -> Data source settings**. Data source settings dialog opens. As you scroll through the list you will notice there are four data sources as mentioned in the problem statement:

- Snowflake
- SharePoint
- ADLS Gen2
- Dataverse

- Select **Close** to close the Data source settings dialog.



4. In the left Queries panel, notice the queries are grouped by data source.
5. Notice **DataverseData** folder has Customer data available in four different queries: BabyBoomer, GenX, GenY, and GenZ. These four queries are appended to create Customer query.
6. You can enter the credentials for the Dataverse data source by entering the **Username** and **Password** available in the **Environment Variables** tab (next to the Lab Guide). Please select Microsoft account option.

Lab Guide **Environment** Resources Help

Here are your credentials to login to [Microsoft Azure](#) and access the On Demand Lab.

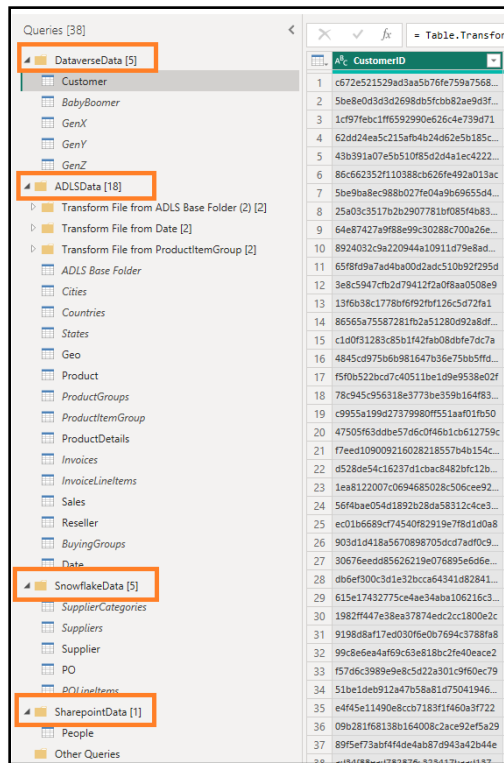
Auth Fields	Value	Action
Username	odl_user_1414947@faiad202-	
Password	xmve64TUF*Pa	

Resource Group : labvm-1414947

Key	Value	Action
Deployment ID	1414947	
Snowflake Username	TE_SNOWFLAKE	
Snowflake Password	8UpfRpExVDXv2AC	
Adls storage account URL	https://stvnexblobstorage.df	
Adls storage account Access key	Lpwn8hQASMPe5r4F+VFXAv	
Labvm Admin Username	demouser	

7. For ADLS data source, use the **Account Key** option and enter the **Adls storage account Access key** that is available in the **Environment Variables** tab (next to the Lab Guide).
8. Notice the **ADLSData** folder has multiple dimensions: Geo, Product, Reseller, and Date. It also has Sales fact.
  - a. **Geo dimension** is created by merging data from Cities, Countries, and States query.
  - b. **Product dimension** is created by merging data from Product Groups and Product Item Group query.
  - c. **Reseller dimension** is filtered using BuyingGroup query.
  - d. **Sales fact** is created by merging InvoiceLineItems with Invoice query.
9. For the Snowflake data source, use the **Snowflake Username** and **Snowflake Password** that is available in the **Environment Variables** tab (next to the Lab Guide).
10. Notice the **SnowflakeData** folder has Supplier dimension and PO (Order / Spend) fact.
  - a. **Supplier dimension** is created by merging Suppliers query with SupplierCategories query.
  - b. **PO fact** is created by merging PO with PO Line Items query.
11. For the SharePoint data source, enter the **Username** and **Password** available in **Environment Variables** tab (next to Lab guide). Please select Microsoft account option.

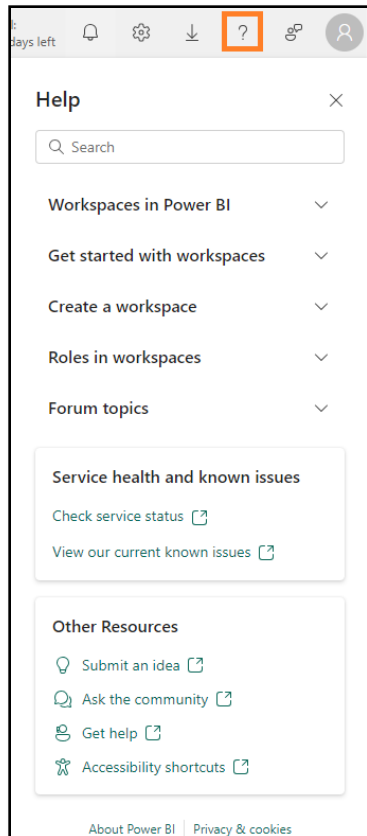
12. Notice the **SharepointData** folder has People dimension.



Now we know what we are dealing with. In the following labs, we will create a similar Power Query using Dataflow Gen2 and model using Lakehouse.

## References

Fabric Analyst in a Day (FAIAD) introduces you to some of the key functions available in Microsoft Fabric. In the menu of the service, the Help (?) section has links to some great resources.



Here are a few more resources that will help you with your next steps with Microsoft Fabric.

- See blog post to read the full [Microsoft Fabric GA announcement](#)
- Explore Fabric through the [Guided Tour](#)
- Sign up for the [Microsoft Fabric free trial](#)
- Visit the [Microsoft Fabric website](#)
- Learn new skills by exploring the [Fabric Learning modules](#)
- Explore the [Fabric technical documentation](#)
- Read the [free e-book on getting started with Fabric](#)
- Join the [Fabric community](#) to post your questions, share your feedback, and learn from others

Read the more in-depth Fabric experience announcement blogs:

- [Data Factory experience in Fabric blog](#)
- [Synapse Data Engineering experience in Fabric blog](#)
- [Synapse Data Science experience in Fabric blog](#)
- [Synapse Data Warehousing experience in Fabric blog](#)
- [Synapse Real-Time Analytics experience in Fabric blog](#)
- [Power BI announcement blog](#)
- [Data Activator experience in Fabric blog](#)
- [Administration and governance in Fabric blog](#)
- [OneLake in Fabric blog](#)

- [Dataverse and Microsoft Fabric integration blog](#)

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