

Microsoft

Microsoft Technical Trainer

Enterprise Skills Initiative

DP-605 LAB 03

Design Power BI reports

This document is provided by the Microsoft Technical Trainer (MTT) team for attendees of the ESI training.

Summary

The information in this document is based on content reviewed by Microsoft as of the date shown and may change after that date to reflect evolving market requirements. This document does not guarantee that there will be no changes affecting customers after the stated date.

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Revision history

Date	Version	Author	Change description
2024.07.11	0.9.0	Jin Hwan Woo	Design Power BI reports
2024.07.12	1.0.0	Jin Hwan Woo	Document formatting
2025.01.04	1.1.0	Jin Hwan Woo	Update lab content
2025.08.02	1.2.0	Jin Hwan Woo	Add a section (slicer synchronization)
2025.10.26	1.3.0	Jin Hwan Woo	Updated the lab to the English version

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Overview

In this exercise, you will create a three-page report and then publish it to the Power BI service, where you can open and interact with it.

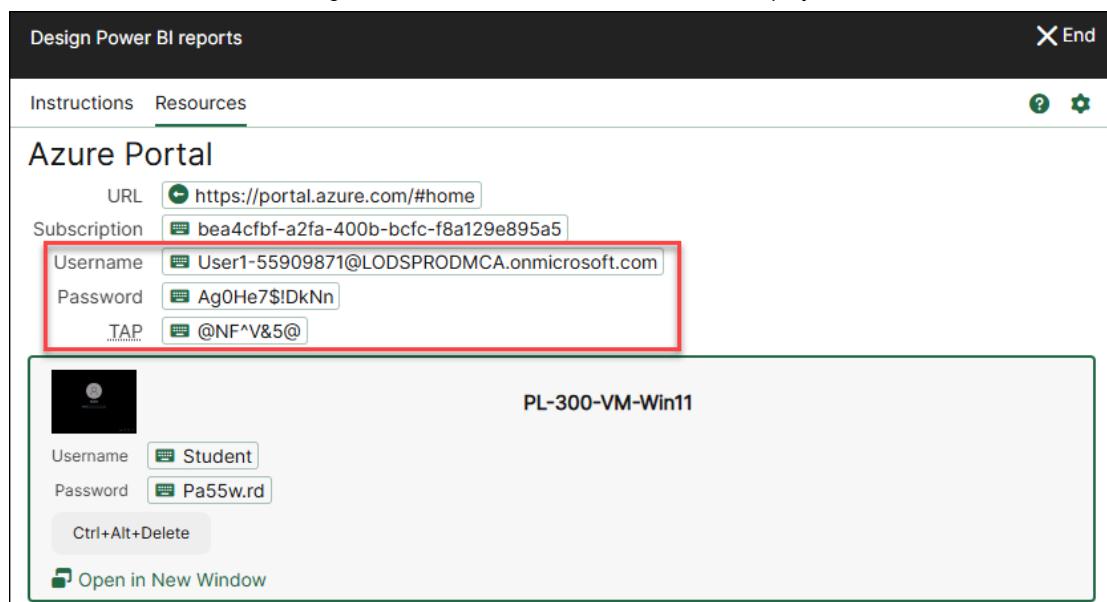
You will learn how to:

- Design a report
- Configure visual fields and formatting properties
- Synchronize slicers
- Publish a report to the Power BI service
- Interact with report visuals

This exercise takes approximately 45 minutes to complete.

EXERCISE 01: Prepare the Environment

1. In the lab environment window, go to the [Resources] tab and review the displayed username and TAP.

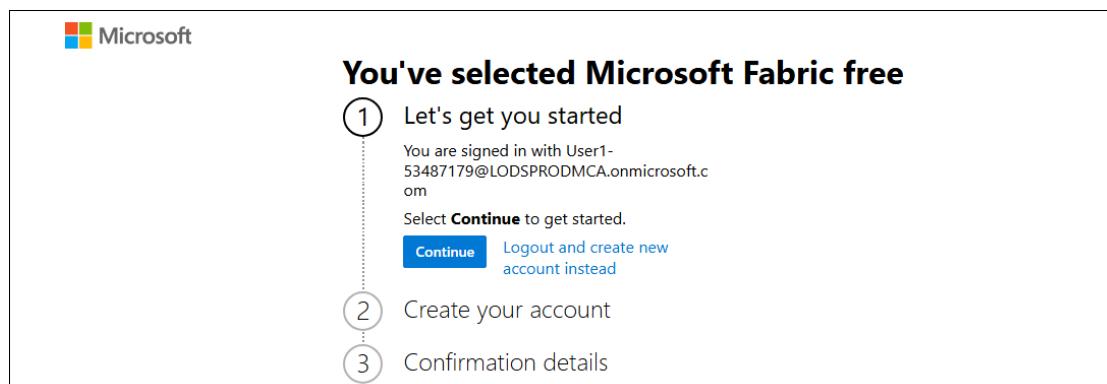


The screenshot shows the 'Design Power BI reports' interface with the 'Resources' tab selected. Under the 'Azure Portal' section, there is a form with the following fields:

- URL: https://portal.azure.com/#home
- Subscription: bea4cfbf-a2fa-400b-bcfc-f8a129e895a5
- Username: User1-55909871@LODSPRODMCA.onmicrosoft.com
- Password: Ag0He7\$!DkNn
- TAP: @NF^V&5@

A red box highlights the 'Username' and 'Password' fields. Below this, there is a section for a VM named 'PL-300-VM-Win11' with fields for 'Username' (Student) and 'Password' (Pa55w.rd), and a 'Ctrl+Alt+Delete' button.

2. Open a browser and go to <https://app.powerbi.com>. Sign in using the username and password you verified earlier. If a free account registration page appears, complete the registration process.



The screenshot shows a Microsoft sign-in page for 'Microsoft Fabric free'. The main message is 'You've selected Microsoft Fabric free'. There are three numbered steps:

- 1 Let's get you started
You are signed in with User1-53487179@LODSPRODMCA.onmicrosoft.com
Select Continue to get started.
[Continue](#) [Logout and create new account instead](#)
- 2 Create your account
- 3 Confirmation details

3. Open a browser and navigate to the following path to download the files required for this lab. Alternatively, click [Download Lab Files] as indicated in the lab instructions to download the necessary files.

<https://github.com/MicrosoftLearning/PL-300-Microsoft-Power-BI-Data-Analyst/raw/Main/Allfiles/Labs/08-design-power-bi-reports/08-design-report.zip>

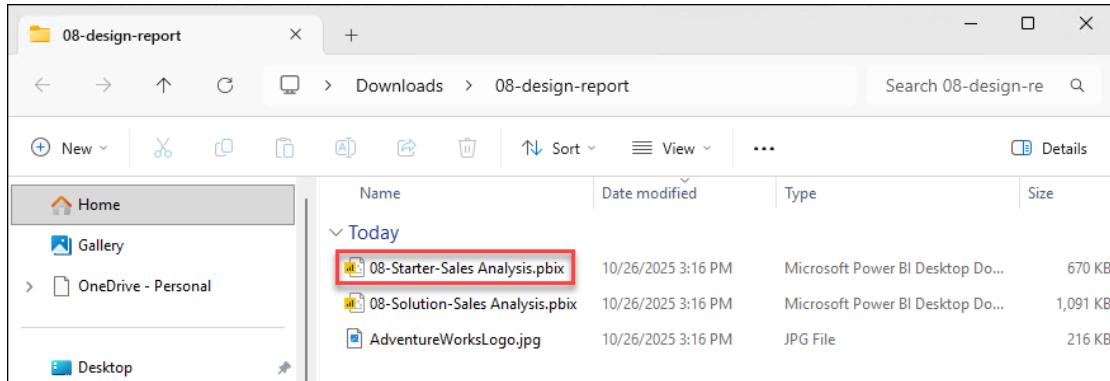
Get started

Select the button below to download the files needed for this lab in order to bypass the download steps below.

Download Lab Files

⚠ If you used the Download Lab Files button above, skip the download steps below. The files will be in the designated folder.

- Extract the downloaded file and open **08-Starter-Sales Analysis.pbix**. If a window prompting you to enter an email address appears, click **[Cancel]**.

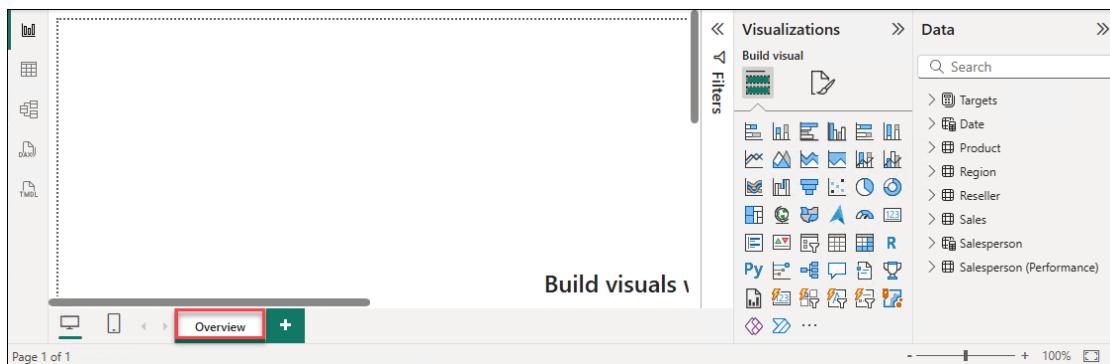


EXERCISE 02: Design the First Page

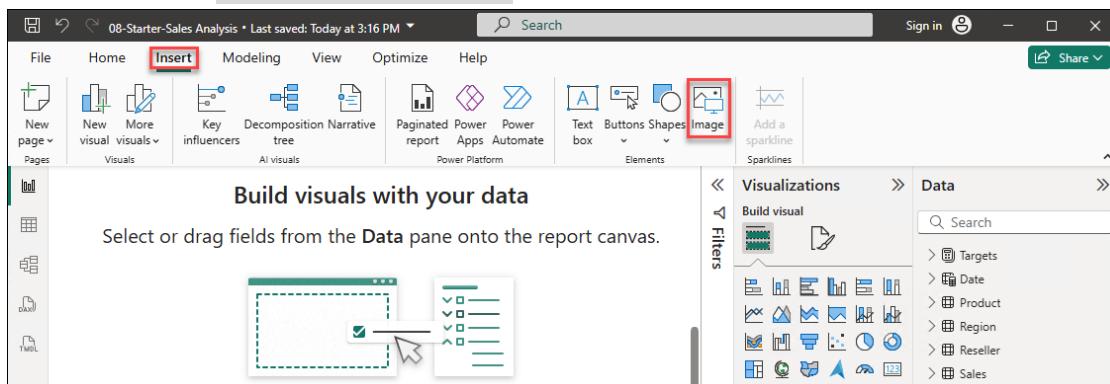
In this task, you will design the first page of your report. When you complete the design, your page will look like the example shown below.



- In Power BI Desktop, double-click the page named "Page 1", and rename it to "Overview".



2. On the [Insert] ribbon, select [Elements – Image]. In the [Open] dialog box, navigate to the downloaded lab folder, select the file AdventureWorksLogo.jpg, and then click [Open].



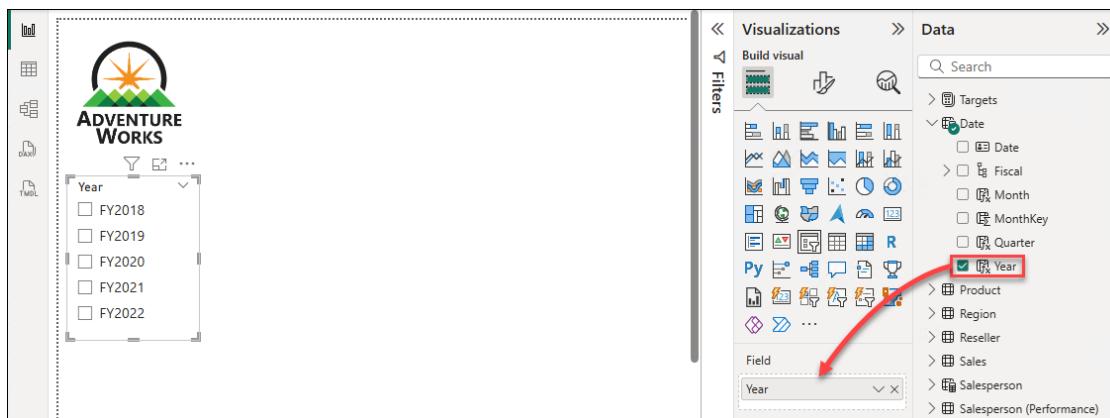
3. Position the inserted image in the upper-left corner and resize it appropriately. Leave a small margin at the top and left sides for better alignment.



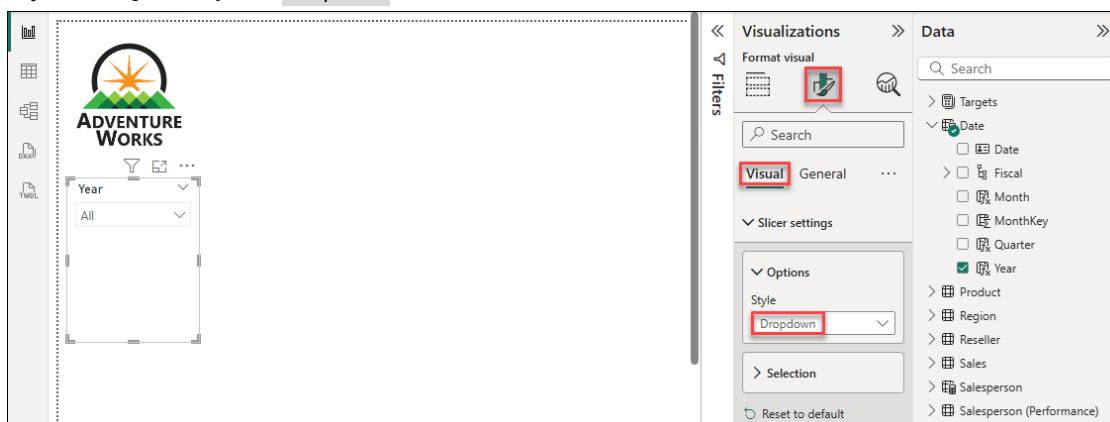
4. Click an empty area on the report page, then in the [Visualizations | Build visual] tab, add a [Slicer] visual.



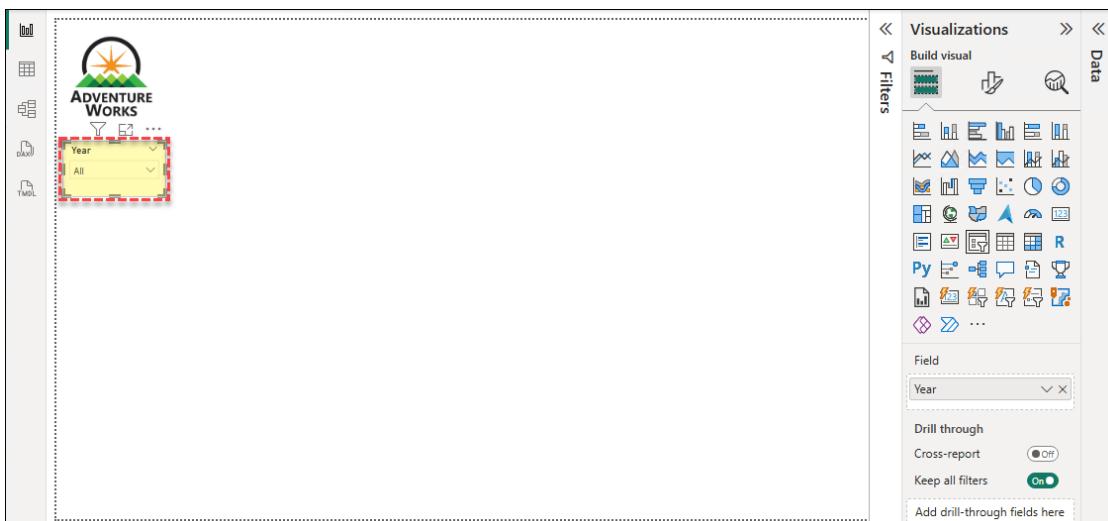
5. With the slicer selected, go to the [Data] pane and select the [Date | Year] field.



6. In the [Visualizations | Format visual] pane, go to the [Visual] tab, then under [Slicer settings – Options – Style], change the style to "Dropdown".



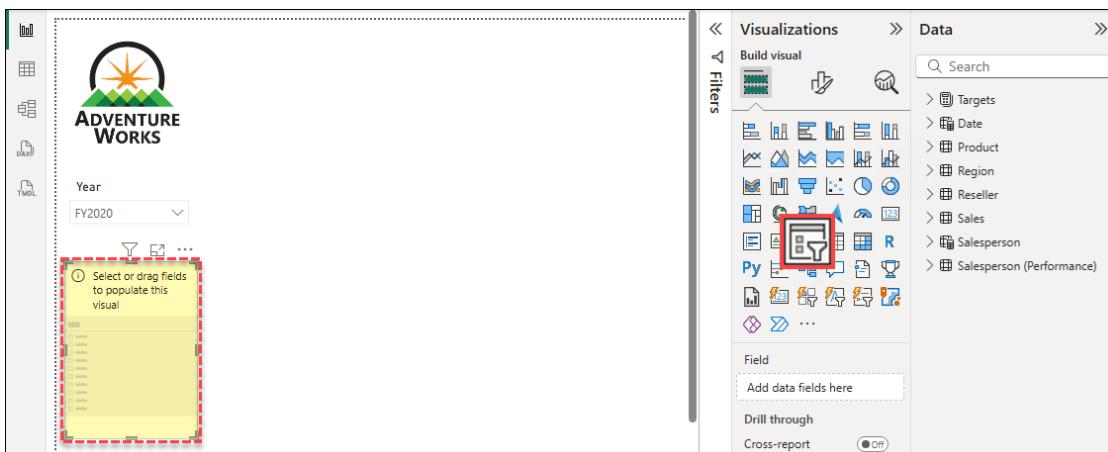
7. Position the slicer visual below the image object and resize it appropriately.



8. In the "Year" slicer, open the dropdown list and select "FY2020". The report page is now filtered to display data for fiscal year 2020.



9. Click an empty area on the report page, then in the [Visualizations | Build visual] pane, add another [Slicer] visual.



10. In the [Data] pane, select the [Region | Region] field. Make sure to choose the regular Region field, not the hierarchical Regions field.

The screenshot shows the Power BI Report view. On the left, there is a logo for ADVENTURE WORKS and two dropdown filters: 'Year' set to 'FY2020' and 'Region' which is expanded to show categories: Australia, Canada, Central, France, Germany, and Northeast. On the right, the 'Filters' pane is open, showing the 'Visualizations' and 'Data' sections. In the 'Data' section, under 'Region', the 'Region' field is selected. A red arrow points from the 'Region' field in the Data pane to the 'Region' slicer on the report page.

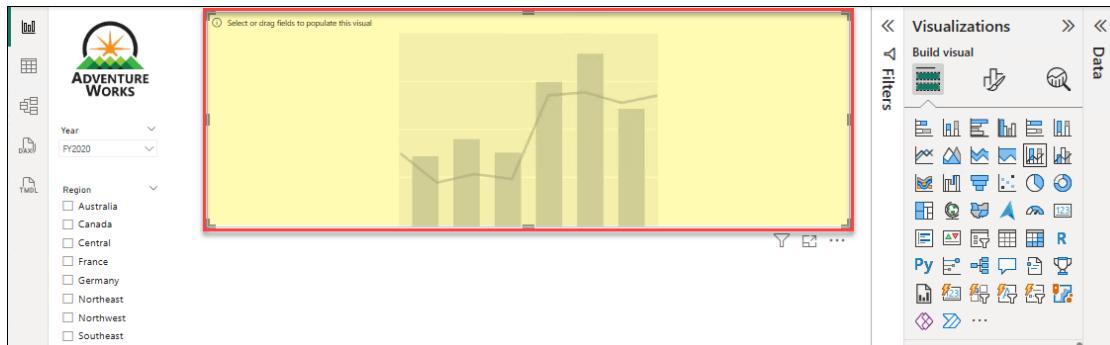
11. Position the added slicer below the Year slicer and resize it appropriately.

The screenshot shows the Power BI Report view. The 'Region' slicer has been moved to the bottom of the page, positioned below the 'Year' slicer. It is highlighted with a yellow dashed border. The report page also includes the ADVENTURE WORKS logo and the 'Year' filter.

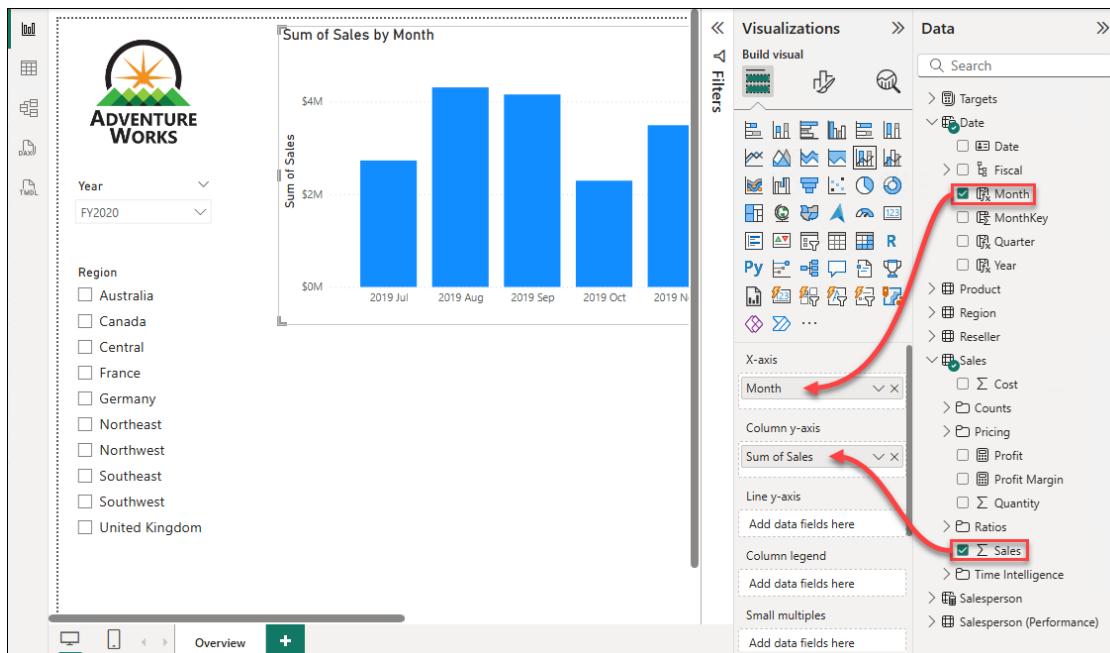
12. Click an empty area on the report page, then in the [Visualizations | Build visual] pane, select the [Line and stacked column chart] visual.

The screenshot shows the Power BI Report view. A new chart visual has been added to the page, located to the right of the company logo. The chart is currently empty and displays the message 'Select or drag fields to populate this visual'. The 'Build visual' pane on the right is open, and the icon for a 'Line and stacked column chart' is highlighted with a red box.

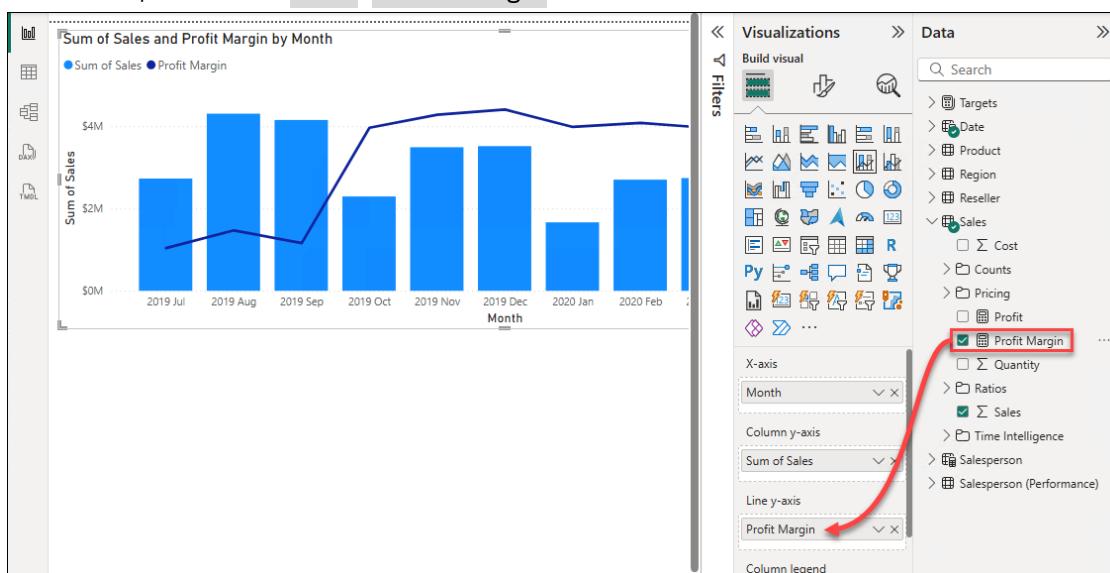
13. Position the added visual to the right of the company logo and resize it appropriately.



14. In the [Data] pane, add the [Date | Month] field to the **X-axis**, and the [Sales | Sales] field to the **Column Y-axis**. When you drag a field onto the visual, it is added to the default well/area. For accuracy, you can also drag the field directly into the corresponding well/area.

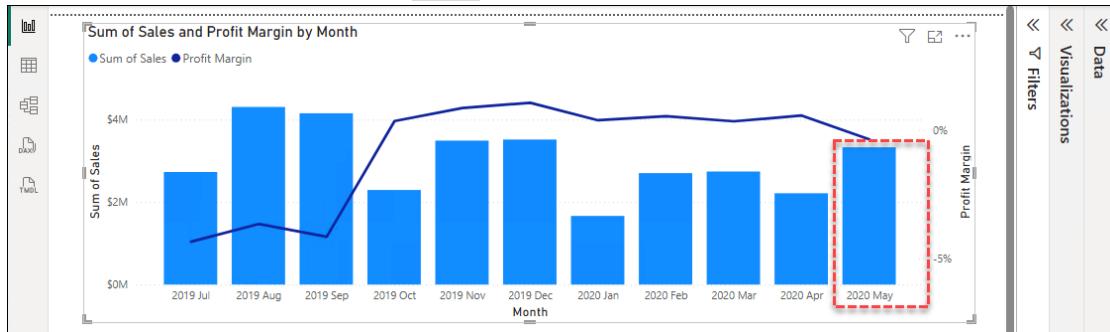


15. In the [Data] pane, add the [Sales | Profit Margin] field to the **Line Y-axis**.

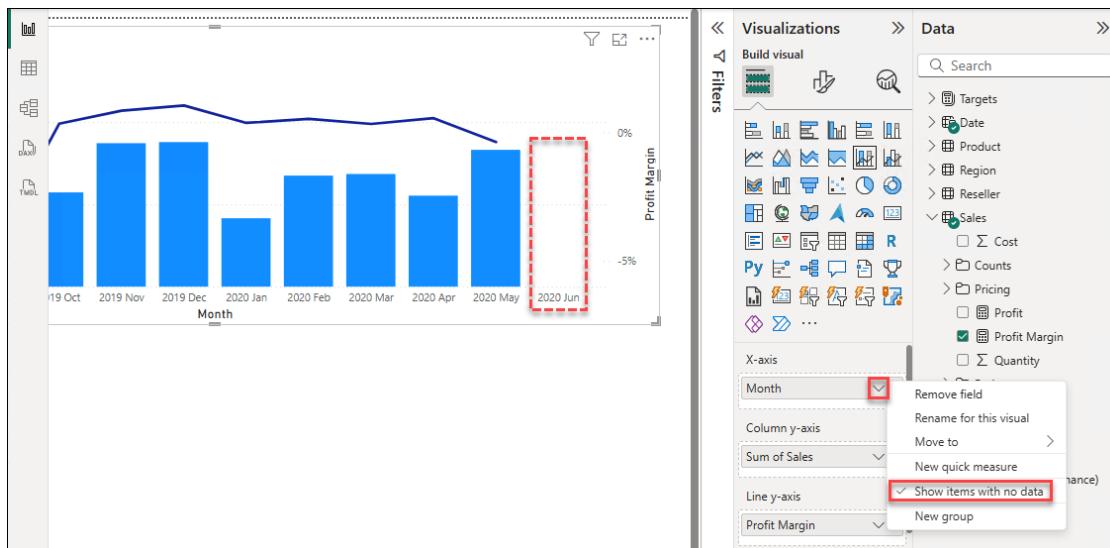


16. Verify that the added visual displays data for only 11 months. The final month of the fiscal year, June 2020,

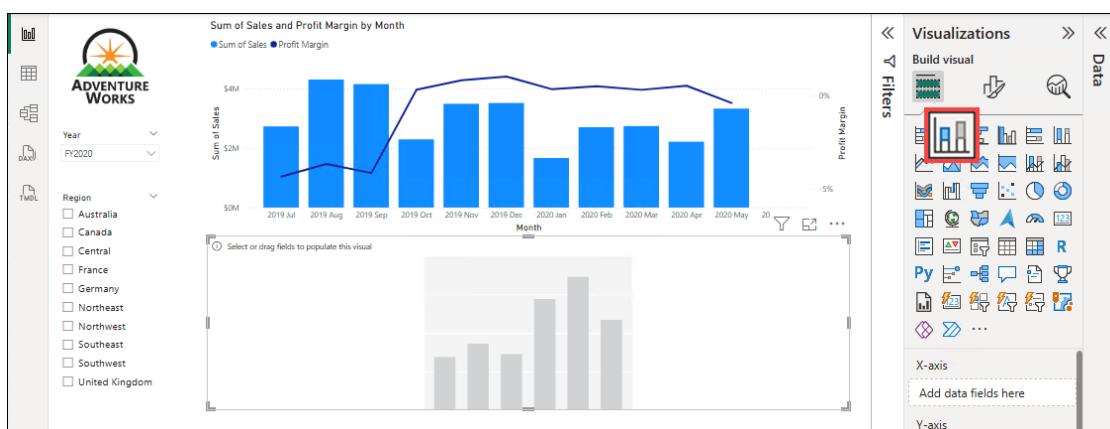
has no sales data. By default, visuals exclude months with BLANK values. You will now configure the visual to display all months, including those with BLANK values.



- In the [Visualizations | Build visual] pane, click the dropdown arrow next to the "Month" field under the X-axis, and select "Show items with no data". Then, verify that the month "2020 Jun", which contains BLANK values, is now displayed.



- Click an empty area on the report. In the [Visualizations | Build visual] pane, select the [Stacked column chart] visual.

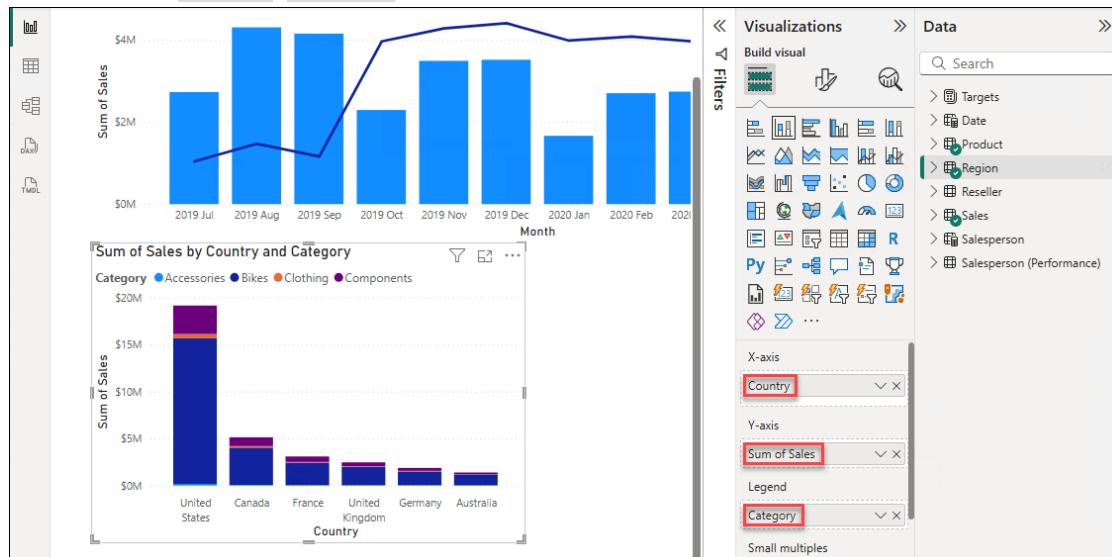


- Position the added visual below the "Line and stacked column chart", and resize it to approximately half the height of that chart.

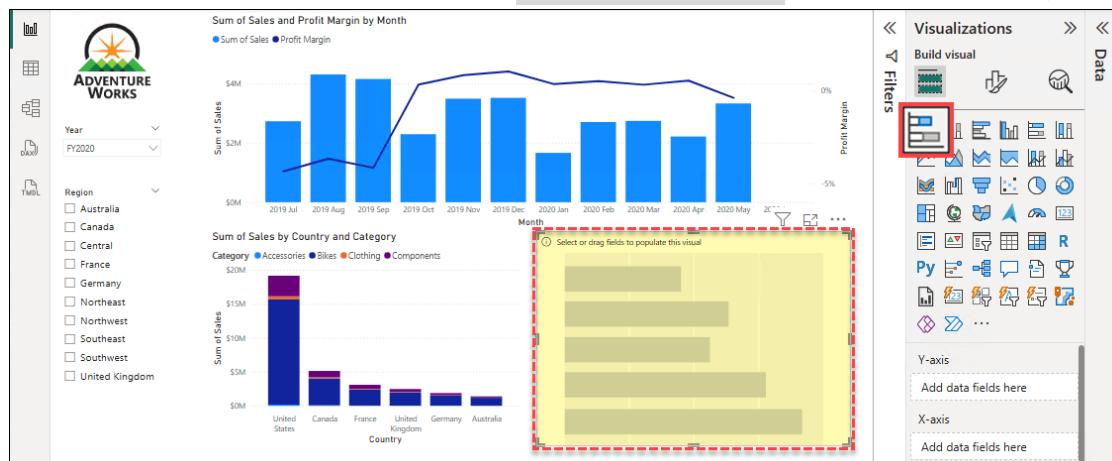


20. In the [Data] pane, add the following fields to the visual wells:

- X-axis: [Region|Country]
- Y-axis: [Sales|Sales]
- Legend: [Product|Category]

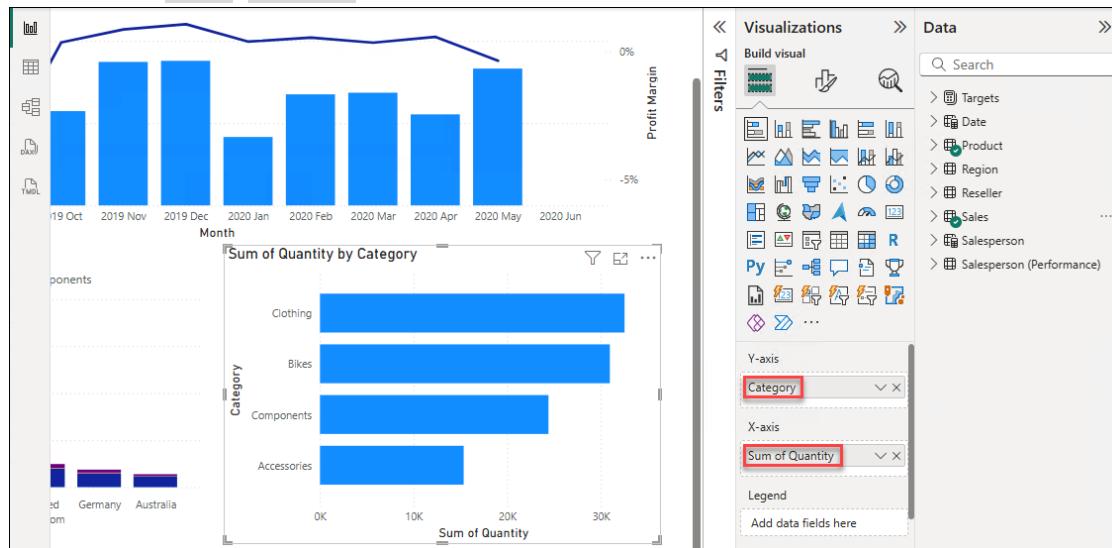


21. Click an empty area on the report. In the [Visualizations | Build visual] pane, select the [Stacked bar chart] visual. Then, position the visual to the right of the "Stacked column chart" and resize it appropriately.

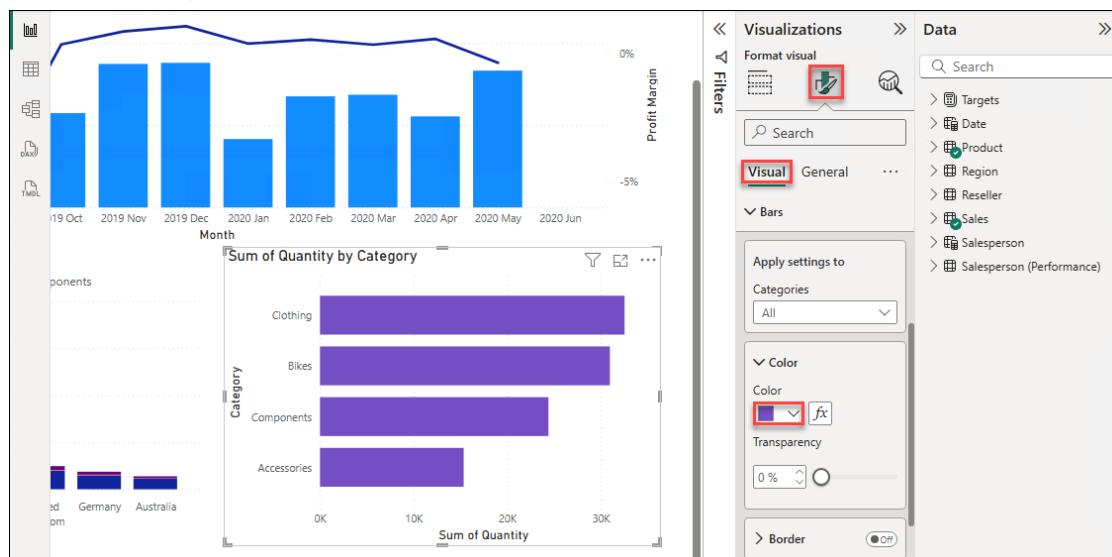


22. In the [Data] pane, add the following fields to the visual wells:

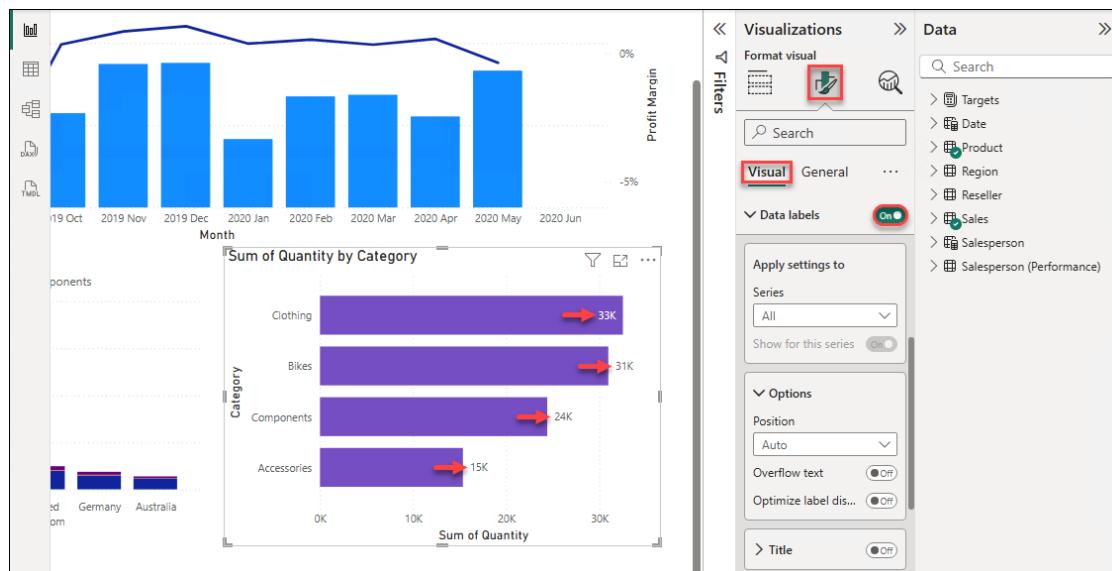
- Y-axis: [Product | Category]
- X-axis: [Sales | Quantity]



23. In the [Visualizations | Format visual] pane, go to the [Visual] tab. Under [Bars – Color], change the default color to a color of your choice.



24. In the [Visualizations | Format visual] pane, go to the [Visual] tab, and turn [Data labels] to "On".



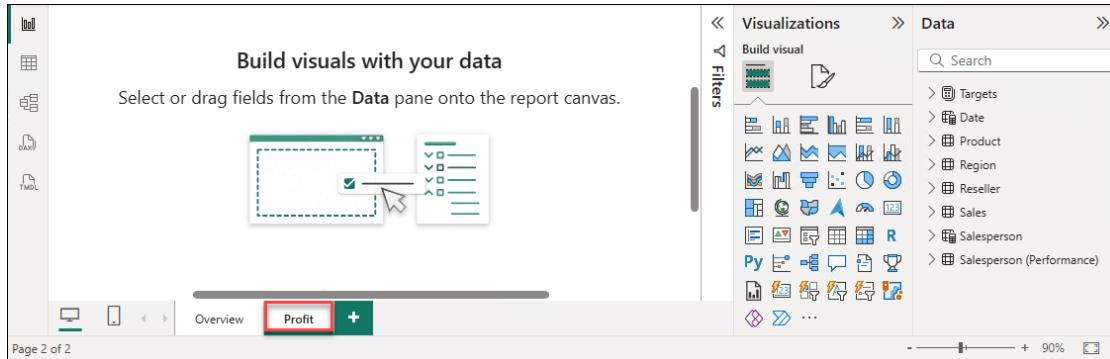
25. Save the Power BI Desktop file.

EXERCISE 03: Design the Second Page

In this task, you will design the second page of your report. When you complete the design, your page will look like the example shown below.

Region	Year	Orders	Sales	Cost	Profit	Profit Margin
Select all	FY2018	739	\$16,429,043	\$16,297,680	\$131,362	0.80 %
Australia	FY2019	1,255	\$27,979,780	\$26,768,232	\$1,211,548	4.33 %
Canada	FY2020	1,802	\$36,568,898	\$36,914,218	(\$345,320)	-0.94 %
Central	Total	3,796	\$80,977,720	\$79,980,130	\$997,590	1.23 %

- At the bottom of the window, click the [+] icon to add a new page, then rename the page to "Profit".

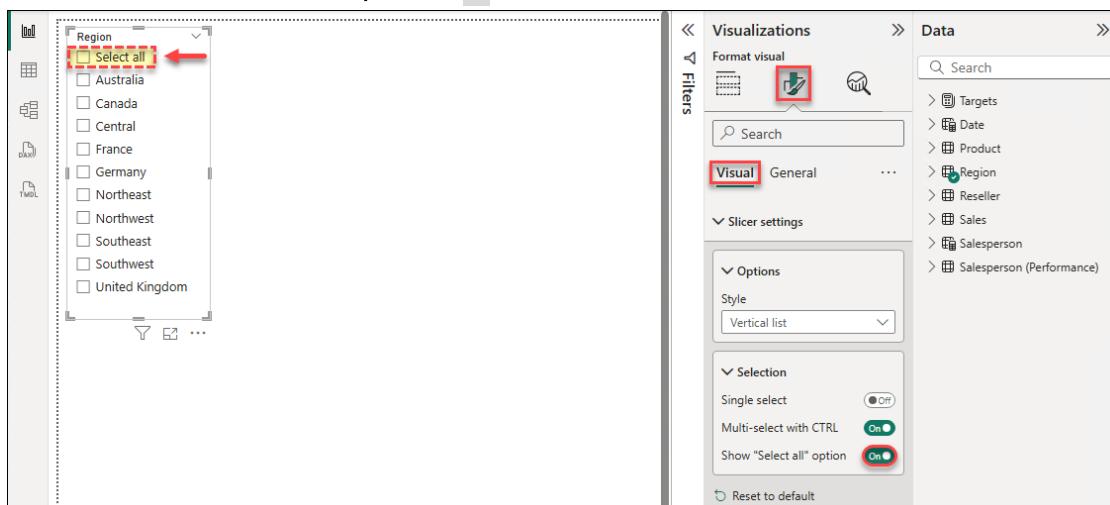


2. In the [Visualizations | Build visual] pane, add a [Slicer] visual. Position it in the upper-left corner and adjust its size appropriately.



3. Configure the added visual as follows:

- In the [Data] pane, add the [Region | Region] field.
- In the [Visualizations | Format visual] pane, go to the [Visual] tab, expand [Slicer settings – Selection], and turn [Show "Select all" option] to "On".



4. In the [Visualizations | Build visual] pane, add a [Matrix] visual. Position and resize the visual as shown in the example below.

The screenshot shows the Power BI Data pane. On the left, there is a tree view of 'Region' with various country and city nodes. In the center, a matrix visual is displayed with a red border around its outline. On the right, the 'Visualizations' pane shows a grid of icons, and the 'Data' pane lists 'Rows' and 'Columns' sections, both with 'Add data fields here' buttons.

5. In the [Data] pane, add the [Date|Fiscal] hierarchy to the "Rows" well.

The screenshot shows the Power BI Data pane. On the left, there is a tree view of 'Year' with nodes for FY2018 through FY2022. In the center, a matrix visual is displayed. On the right, the 'Visualizations' pane shows a grid of icons, and the 'Data' pane has the 'Rows' well open. Inside the 'Rows' well, the 'Fiscal' hierarchy is listed under 'Date', with 'Year', 'Quarter', and 'Month' as its children. A red arrow points from the 'Fiscal' node in the 'Data' pane to the 'Fiscal' node in the 'Rows' well.

6. In the [Data] pane, add the following five fields from the Sales table to the "Values" well:

- [Sales|Counts|Orders]
- [Sales|Sales]
- [Sales|Cost]
- [Sales|Profit]
- [Sales|Profit Margin]

The screenshot shows the Power BI Data pane. On the left, there is a table visualization showing sales data for years 2018, 2019, and 2020. In the center, a matrix visual is displayed. On the right, the 'Visualizations' pane shows a grid of icons, and the 'Data' pane has the 'Values' well open. Inside the 'Values' well, five fields are listed: 'Orders', 'Sum of Sales', 'Sum of Cost', 'Profit', and 'Profit Margin'. To the right of the 'Values' well, a list of available fields from the 'Sales' table is shown, with several fields checked: 'Σ Cost' (3), 'Counts' (Counts), 'Orders' (1), 'Profit' (4), 'Profit Margin' (5), 'Σ Sales' (2), and 'Quantity'. Red numbers (1-5) are placed next to the checked fields in the list.

7. In the [Visualizations | Format visual] pane, go to the [Visual] tab, expand [Layout and style presets], and set the "Layout" option to "Tabular" format.

The screenshot shows the 'Format visual' pane with the 'Visual' tab selected. Under 'Layout and style presets', the 'Layout' dropdown is set to 'Tabular'. A red box highlights this dropdown. The 'Style' dropdown is set to 'Default'. There is also a 'Repeat row headers' toggle switch.

8. In the [Data] pane, add the [Product | Category] field to the [Filters] pane under "Filters on this page". After adding the filter, click the [Expand or collapse filter card] icon to collapse the filter.

- Using fields in the Filters pane produces the same results as a slicer.
- One difference is that filters do not take up space on the report page.
- Another difference is that filters can be configured to meet more advanced filtering requirements.

The screenshot shows the 'Data' pane with the 'Filters' section open. A red arrow points from the 'Category' checkbox in the 'Product' category tree to the 'Filters on this page' section. In the 'Filters on this page' section, a red circle highlights the filter card for 'Category'. The filter card shows 'Category is (All)' and has an 'Expand/Collapse' icon (indicated by a red circle).

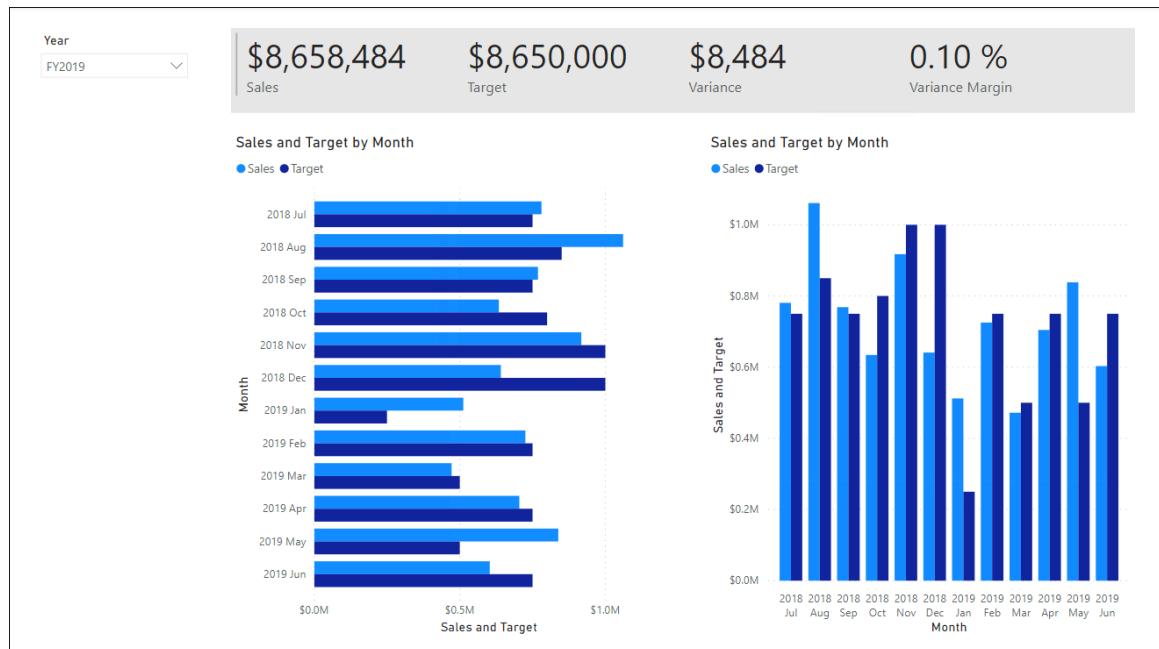
9. In the same way, add the following fields from the Product table to "Filters on this page".

- [Product | Subcategory]
- [Product | Product]
- [Product | Color]

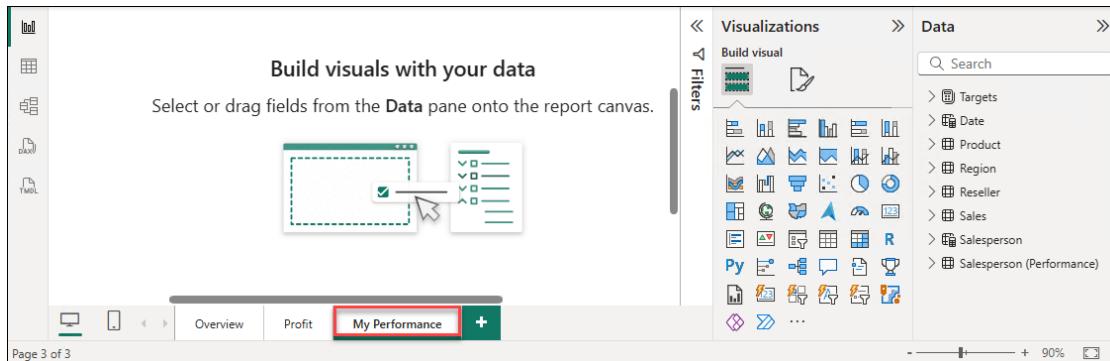
- The design of the second page is now complete. Save the Power BI Desktop file.

EXERCISE 04: Design the Third Page

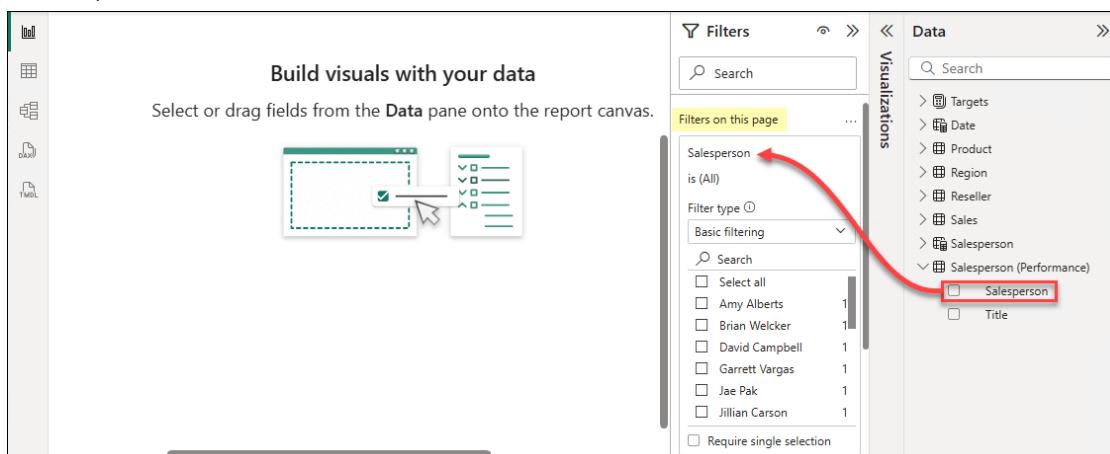
In this task, you will design the final, third report page. When you complete the design, your page will look like the example shown below.



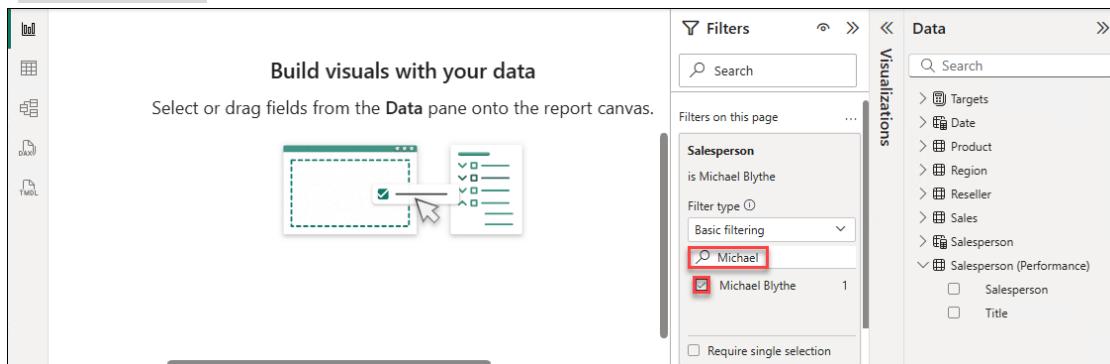
- At the bottom of the window, click the [+] icon to add a new page, then rename the page to "My Performance".



2. To simulate the effect of a Row-Level Security (RLS) filter, add a new filter. In the [Data] pane, add the [Salesperson (Performance)] | Salesperson field to the "Filters on this page" area in the [Filters] pane.



3. In the added filter, select the user "Michael Blythe". The report page is now filtered to display data only for "Michael Blythe".

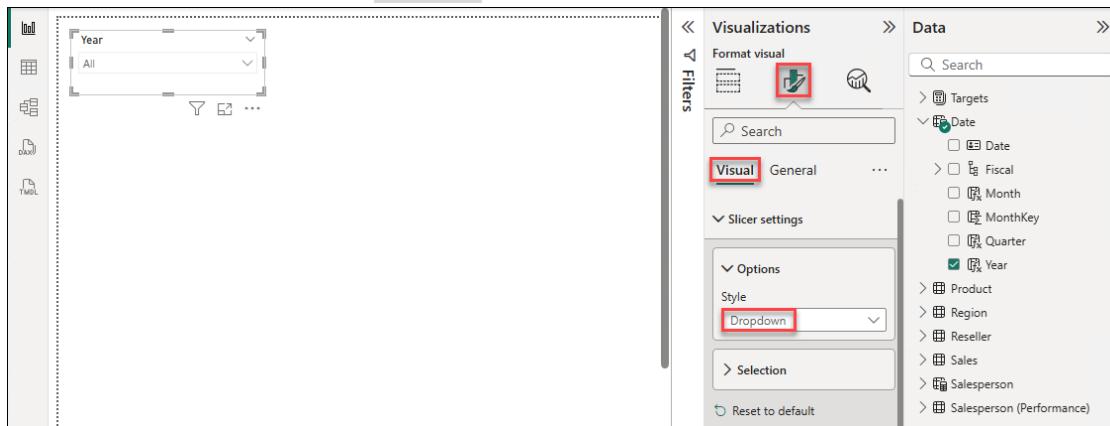


4. In the [Visualizations | Build visual] pane, add a [Slicer] visual. Position it as shown below and adjust its size accordingly.



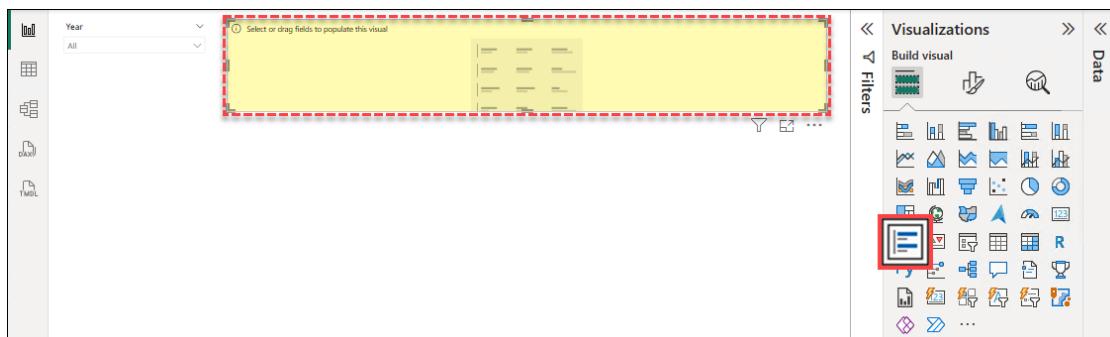
5. Configure the added slicer visual as follows:

- In the [Data] pane, add the [Date|Year] field.
- In the [Visualizations | Format visual] pane, go to the [Visual] tab, and under [Slicer settings – Options – Style], change the style to "Dropdown".



6. Click an empty area on the report. In the [Visualizations | Build visual] pane, add a [Multi-row card] visual.

Position it as shown below and adjust its size accordingly.



7. In the [Data] pane, add the following fields to the visual:

- [Sales|Sales]
- [Targets|Target]
- [Targets|Variance]
- [Targets|Variance Margin]

The screenshot shows the Power BI interface with the Visualizations pane open. In the Fields section, four filters are selected: Sum of Sales, Target, Variance, and Variance Margin. These filters are highlighted with red boxes. The Data pane on the right lists various targets, date, product, region, reseller, and sales fields.

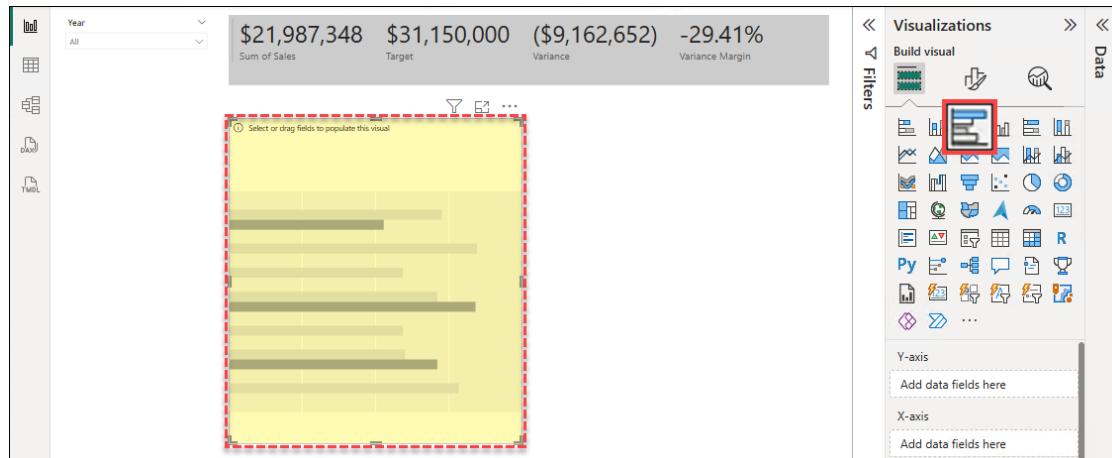
8. In the [Visualizations | Format visual] pane, go to the [Visual] tab. Expand [Callout] and set the font size to 28.

The screenshot shows the Visualizations pane with the Format visual tab selected. The Callout section is expanded, and the Font size is set to 28, which is highlighted with a red box. The General tab is also highlighted with a red box.

9. In the [Visualizations | Format visual] pane, go to the [General] tab. Expand [Effects – Background], and set the background color to a light gray to create contrast with other visuals.

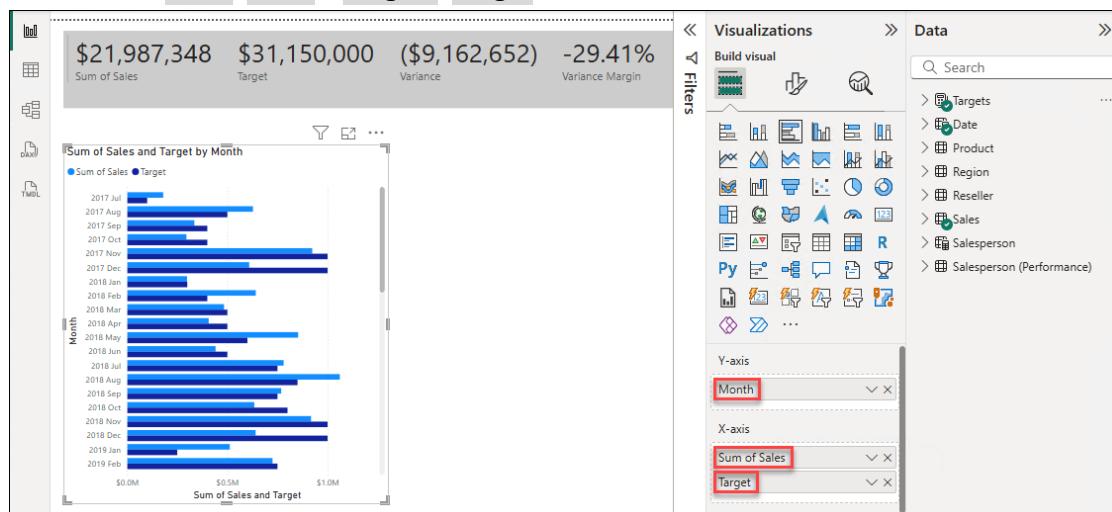
The screenshot shows the Visualizations pane with the General tab selected. The Effects section is expanded, and the Background color is set to a light gray, which is highlighted with a red box. The Visual border and Shadow options are also visible.

10. Click an empty area on the report. In the [Visualizations | Build visual] pane, add a [Clustered Bar Chart] visual. Position it as shown below and adjust its size appropriately.



11. In the [Data] pane, add the following fields to the visual wells:

- Y-axis: [Date|Month]
- X-axis: [Sales|Sales], [Targets|Target]



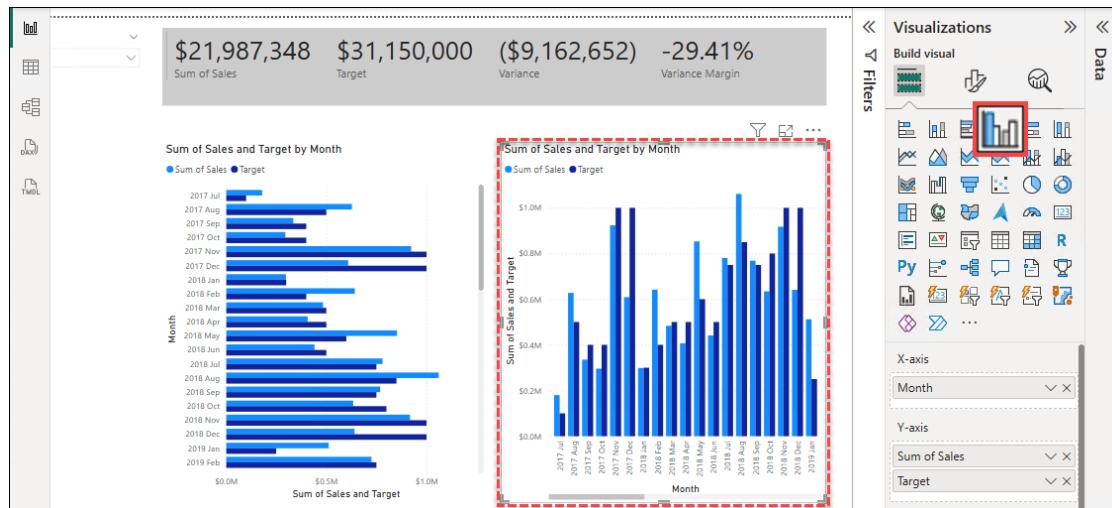
12. Copy the configured visual by pressing <Ctrl + C>, then paste it by pressing <Ctrl + V>. Position the duplicated visual as shown below and adjust its size accordingly.



13. In the [Visualizations | Build visual] pane, change the pasted visual to a [Clustered column chart].

- You can now view the same data represented in two different visualization types.

- While this layout does not make optimal use of page space, you will improve it in the "Enhance the report in Power BI Desktop" exercise by overlapping the two visuals.
- Adding buttons to the page will allow report users to choose which visual to display.



14. Save the Power BI Desktop report.

EXERCISE 05: Synchronize Slicers

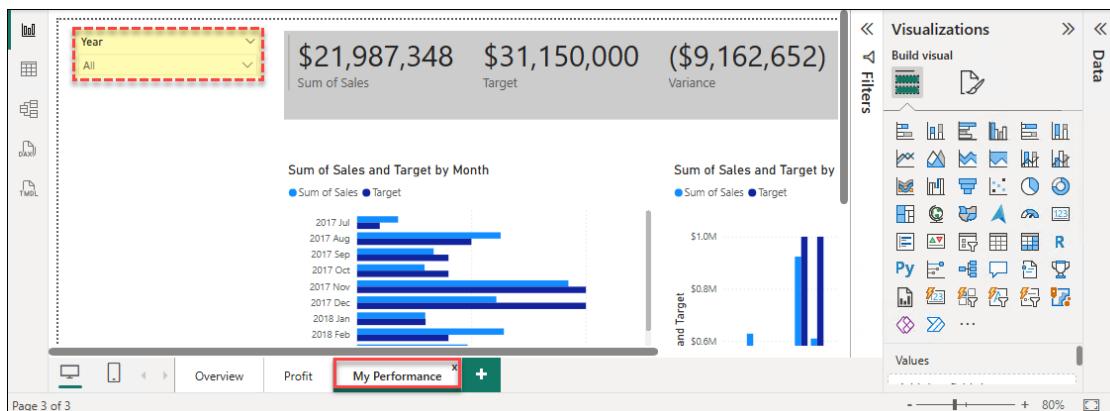
In this task, you will synchronize the Year and Region slicers.

1. On the [Overview] page in Power BI Desktop, select "FY2018" as the value in the Year slicer.

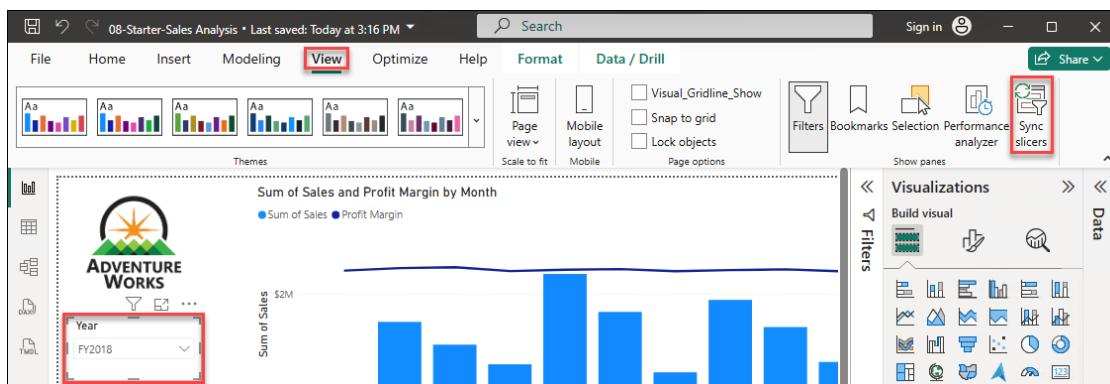


2. Navigate to the [My Performance] page and verify that the Year slicer value is different from the one previously selected.

- When slicers are not synchronized, data may be displayed incorrectly, which can lead to user frustration.
- You will now synchronize the slicers across the report.



3. Return to the [Overview] page. Select the Year slicer, then on the [View] ribbon, click [Show panes – Sync slicers].



4. In the [Sync slicers] pane, you can see which pages display the slicer (eye icon) and which pages it's synchronized with (circular arrows icon). Select both the Overview and My Performance pages to ensure the slicer is synchronized across them.



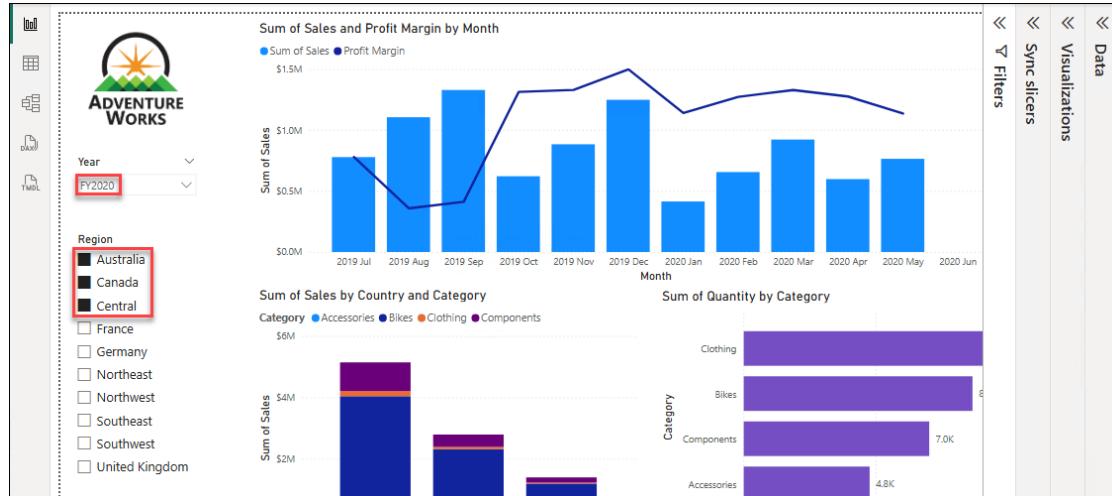
5. On the [Overview] page, select the Region slicer. In the [Sync slicers] pane, select both the Overview and Profit pages so that the slicer is synchronized between them.



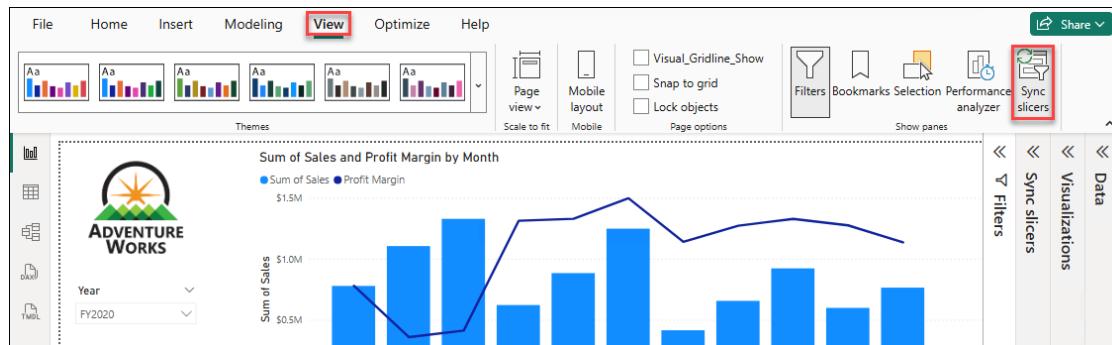
6. On the [Overview] page, select appropriate filtering values for both the Year and Region slicers. Then verify

the following:

- Navigate to the [Profit] page and confirm that the selection made in the **Region** slicer on the [Overview] page is reflected there.
- Navigate to the [My Performance] page and confirm that the selection made in the **Year** slicer on the [Overview] page is also reflected.



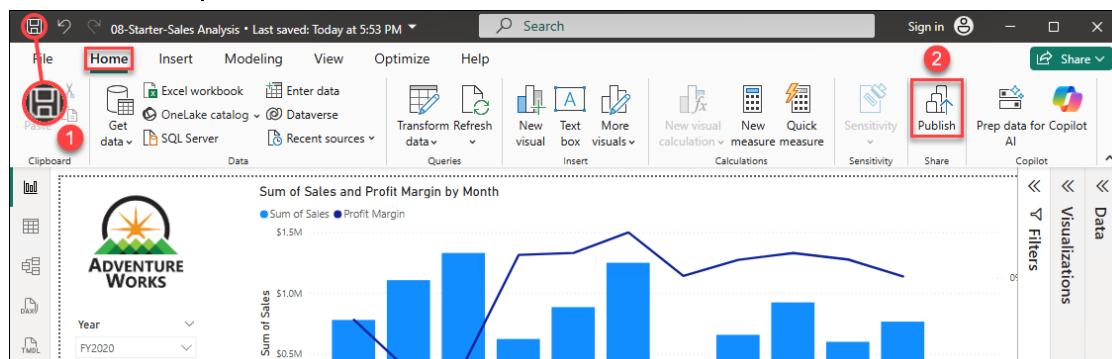
7. To close the [Sync slicers] pane, go to the [View] ribbon and select [Show panes – Sync slicers] again.



EXERCISE 06: Publish the Report

In this task, you will publish the report to the Power BI service.

1. In Power BI Desktop, click [Save], then on the [Home] ribbon, select [Share – Publish].



2. In the [Enter your email address] window, sign in using the account and TAP (Temporary Access Pass) password you registered at the beginning of the lab. If the [Automatically sign in to all desktop apps and web sites on this device?] window appears, click [Yes, all apps].

Automatically sign in to all desktop apps and websites on this device?

Selecting Yes, all apps will:

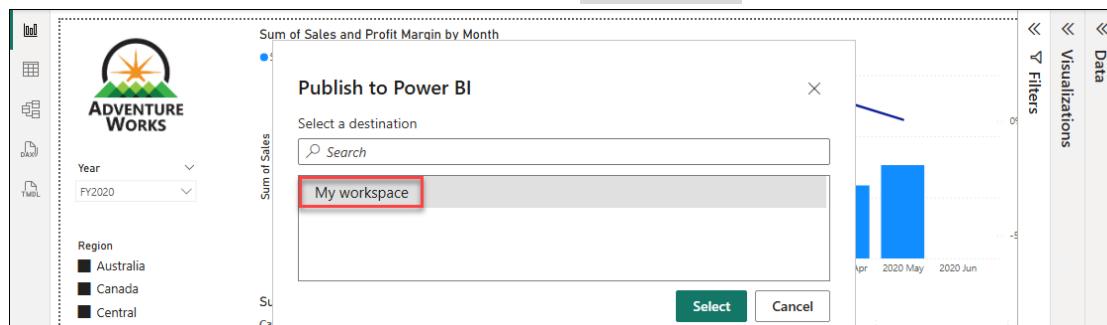
- Allow us to use your work or school account to sign you in to other desktop apps and websites you use on this device.
- Register this device with your organization, allowing your organization to view device information like the device's name.

Is this a shared device? If so, consider signing in to this app only.

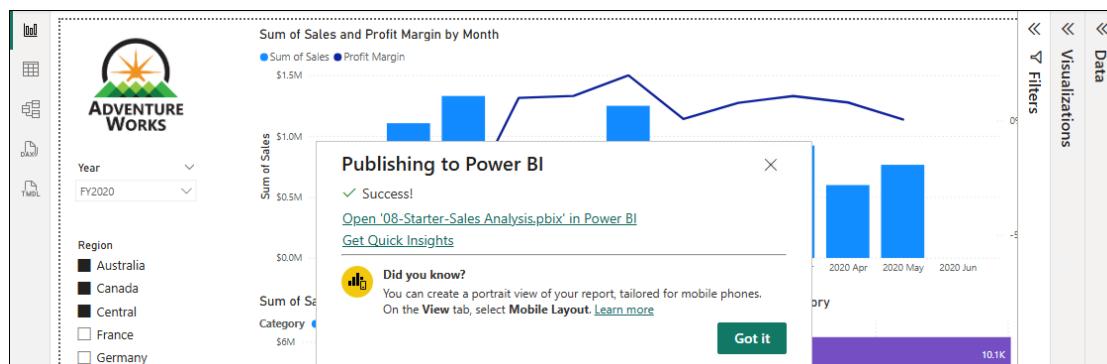
[Learn more](#)

Yes, all apps
No, this app only

3. When the [Publish to Power BI] window appears, select "My workspace", and then click [Select].



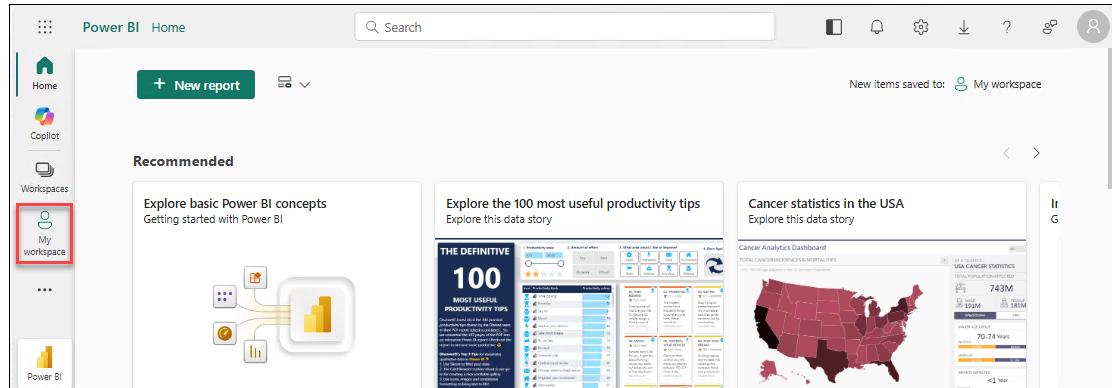
4. When the publishing process to Power BI is complete, click [Got it] to close the window.



EXERCISE 07: Explore the Report

In this task, you will explore the report that was published to the Power BI service.

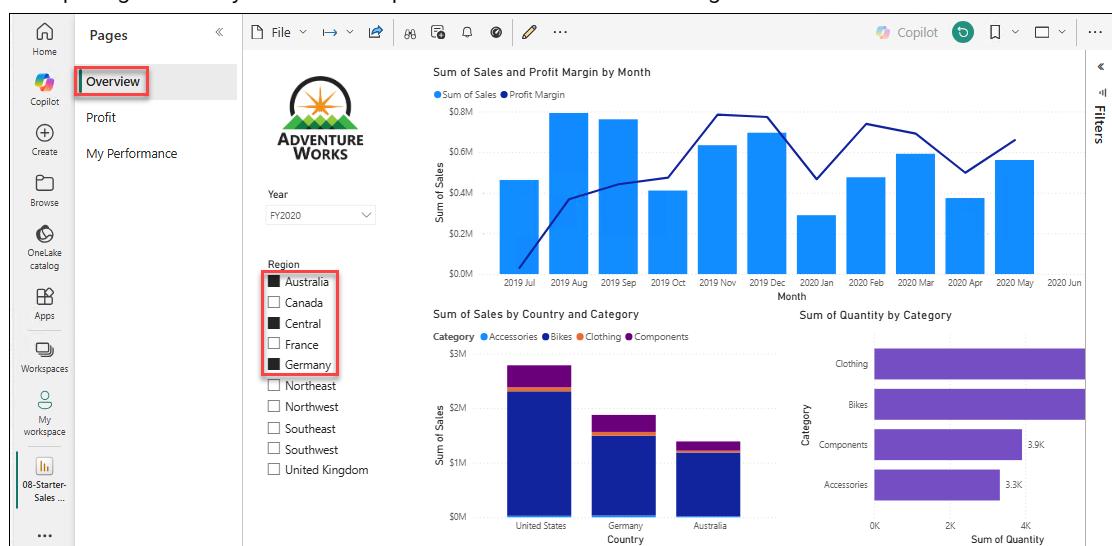
- Open a browser and go to <https://app.powerbi.com>, then sign in. In the left navigation menu of the Power BI site, click [My workspace].



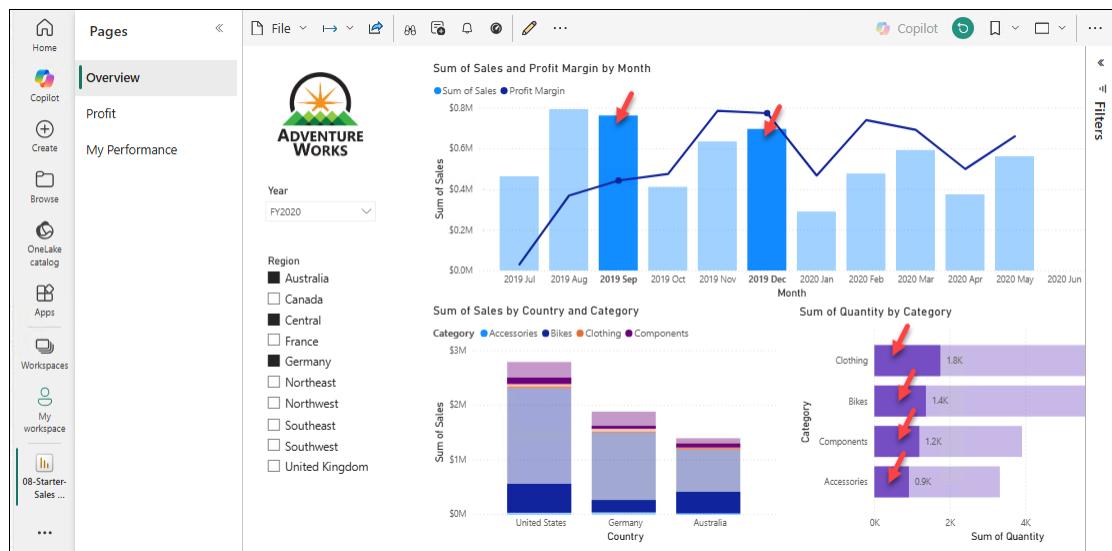
- On the [My workspace] page, review the following details, then click the "08-Starter-Sales Analysis" report.
 - If the semantic model is not visible, refresh the browser.
 - When you publish a Power BI Desktop file, its data model is published as a **semantic model**.
 - If the [Upgrade to a paid Power BI license] window appears, click [Try free].

This screenshot shows the 'My workspace' list view. It lists two items: '08-Starter-Sales Analysis' (Report) and '08-Starter-Sales Analysis' (Semantic m...). The first item is highlighted with a red box. The table columns include Name, Status, Type, Task, Owner, Refreshed, Next refresh, and Reset. The 'Refreshed' column shows the date and time as 10/26/2025, 6:01:59 PM for both entries.

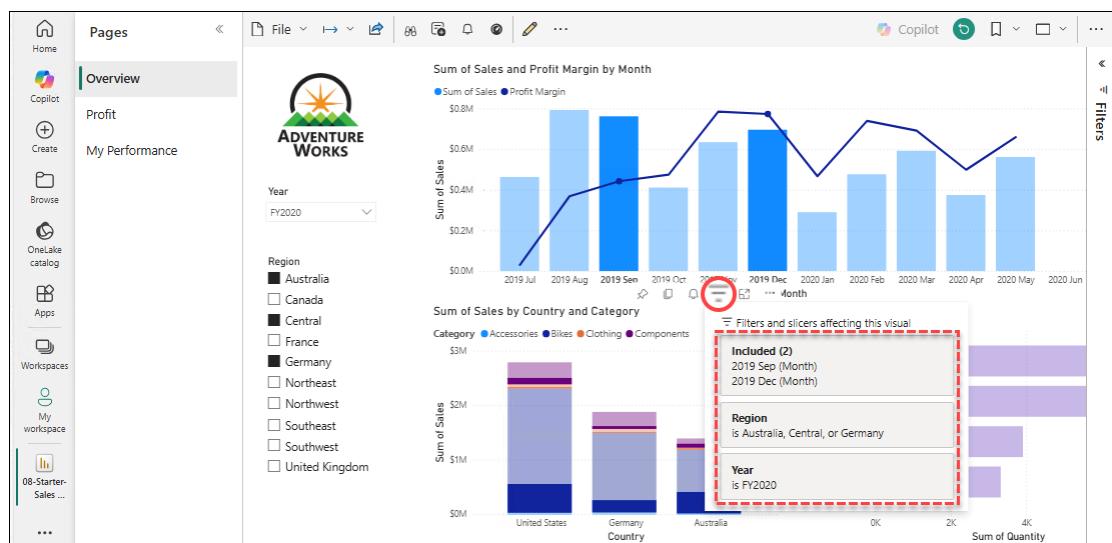
- In the [Pages] pane, go to the [Overview] page. In the Region slicer, hold down the **<Ctrl>** key and select multiple regions. Verify that the data updates to reflect the selected regions.



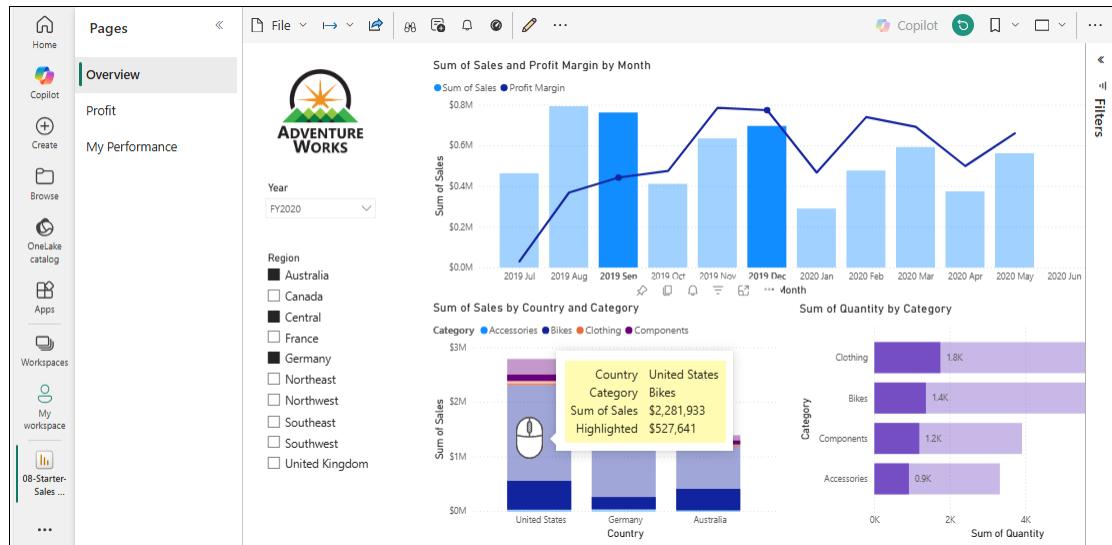
- In the "Line and stacked column chart" visual, select multiple month columns to verify that cross-filtering works across the page. Use the **<Ctrl>** key to select multiple months. By default, cross-filtering applies filters to all visuals on the page.



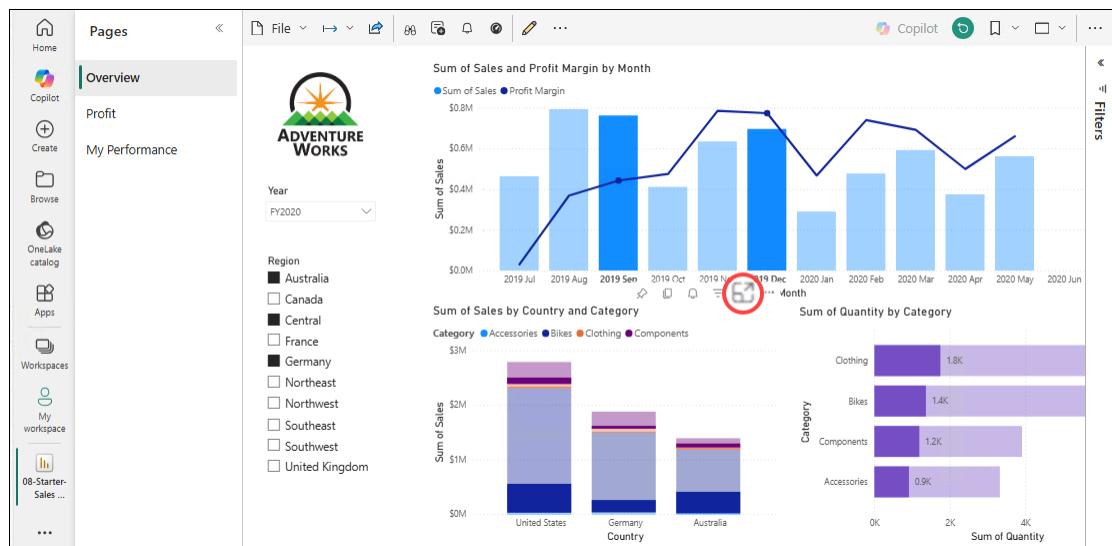
- Verify that the bar charts are filtered and highlighted accordingly. Hover over the [Filter] icon displayed in the upper-right corner of each visual. This icon allows you to view all filters applied to the visual, including slicers and cross-filters from other visuals.



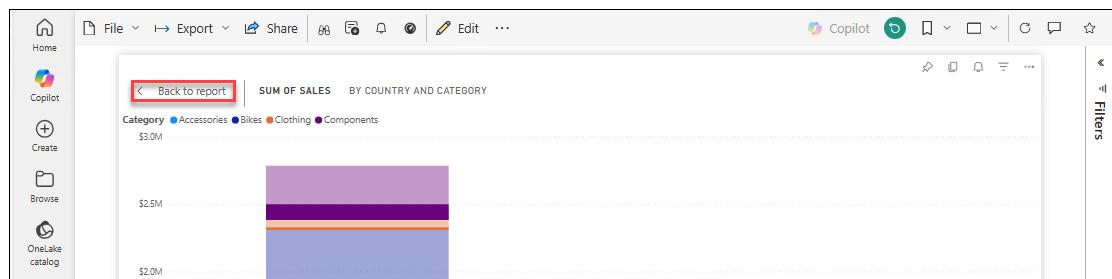
- Hover over the chart. As you move the cursor over each bar, verify that a tooltip appears displaying the corresponding data details.



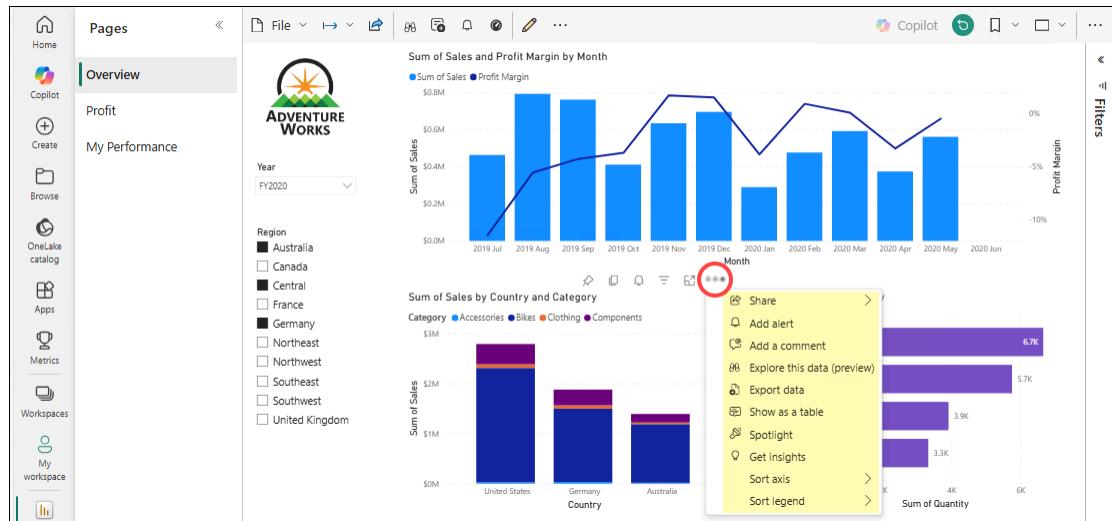
7. In the upper-right corner of the visual, click the [Focus mode] icon. Focus mode expands the selected visual to fill the entire page.



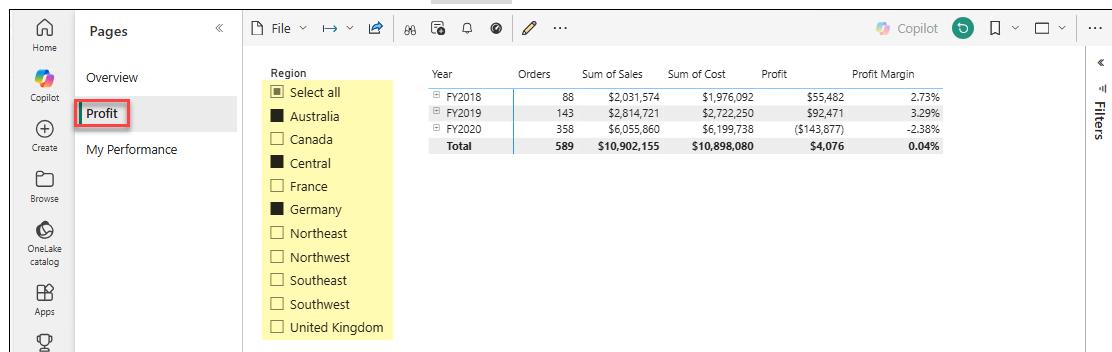
8. To return to the report page, click [Back to report] in the upper-left corner.



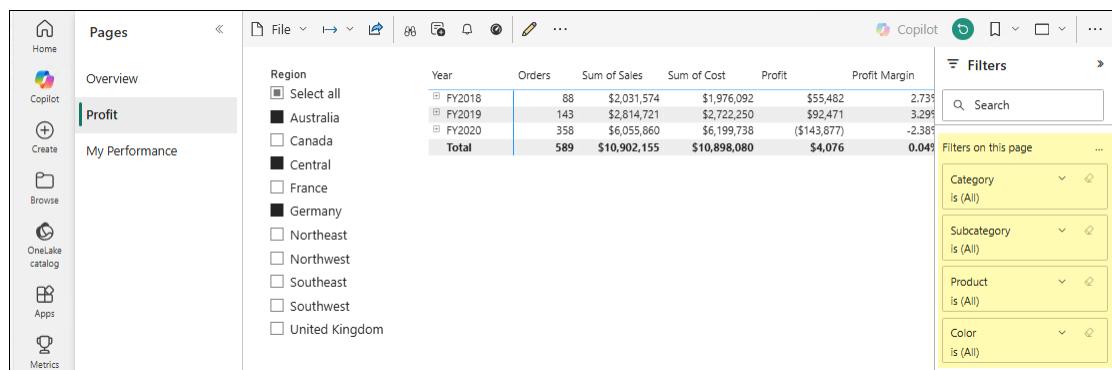
9. In the upper-right corner of the visual, click the [More options] icon and review the available menu options.



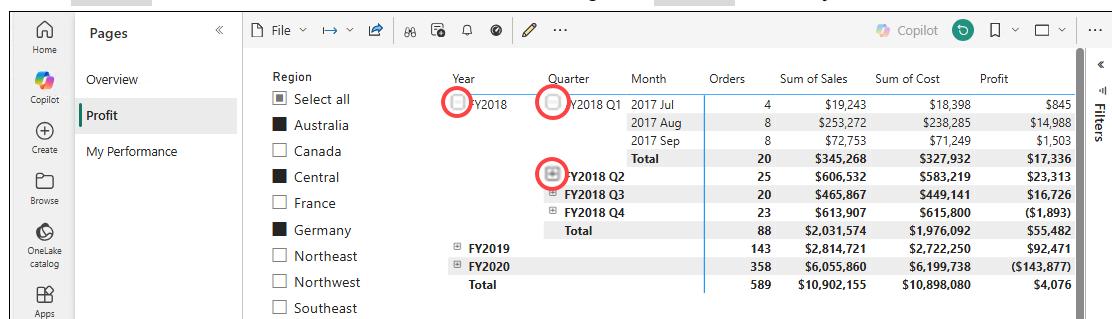
10. In the [Pages] pane, click the [Profit] page. Verify that the selection made in the Region slicer on the [Overview] page is synchronized with the Region slicer on this page.



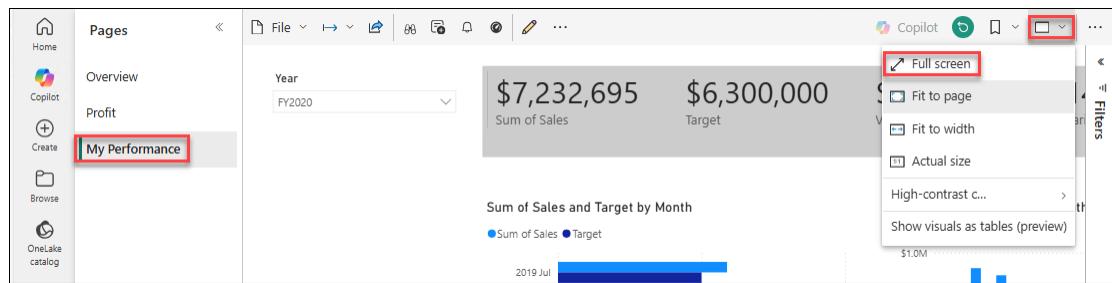
11. In the [Filters] pane, apply several filters. Using the Filters pane allows you to define more complex filters than those available with slicers.



12. In the Matrix visual, click the [+] icon to drill down through the Fiscal hierarchy.



13. In the [Pages] pane, navigate to the [My Performance] page. From the menu, select [Full screen].



14. In full-screen mode, modify the slicers and test cross-filtering interactions. At the bottom of the page, verify that you can see the available commands for navigating between pages, moving forward or backward, and exiting full-screen mode.

