Microsoft Power Platform

Power BI Dashboard in a Day Lab 3

Maintained by: Microsoft Corporation

Contents

Introduction

This document is lab three out of five total labs.

Please continue to use your file after completing Lab 2. If you are joining the Dashboard in a Day at this point or were unable to complete previous labs, please start this lab with the provided **Lab 2 solution.pbix** file found in the Reports folder.

At the end of this lab, you will have completed a full report that is ready to be published to the Power BI Service. In the report, you will have learned how to do conditional formatting, add a logo to the manufacturer filter, import a custom visual, and apply a custom theme to the report. By the end of this lab, you will have also learned how to add bookmarks to tell a story about the report.

The flow of this document includes screenshots to provide a visual aid for the users and a text description of the steps the user needs to follow. In the screenshots, sections are highlighted with red or orange boxes to indicate the action or area on which a user needs to focus.

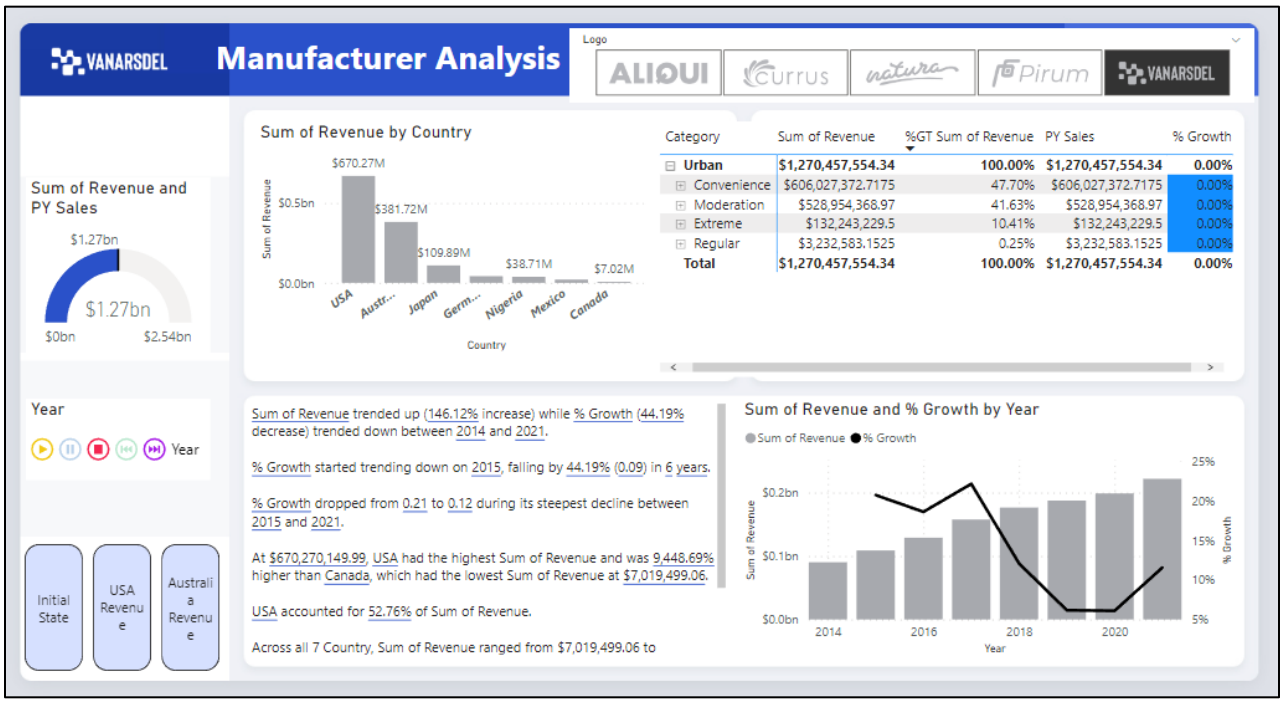
NOTE: This lab uses real, anonymized data provided by ObviEnce, LLC. Visit their site to learn about their services: www.obvience.com. This data is the property of ObviEnce, LLC and has been shared to demonstrate Power BI functionality with industry sample data. Any use of this data must include this attribution to ObviEnce, LLC.

Power BI Desktop

Power BI Desktop – Data Visualization

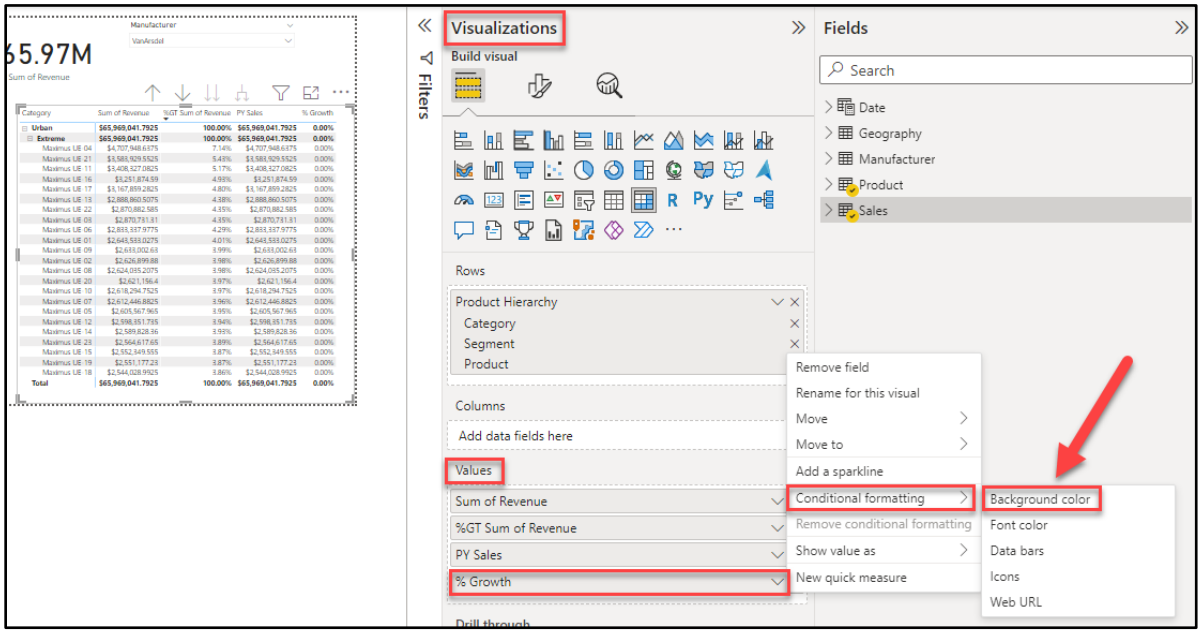
Now that we've completed data exploration and visualization in labs one and two, you have good insights to share with your team. In this section, you create a professional report for the benefit of you and your entire team.

At the end of this section, you will build a report like the one shown in the figure below.

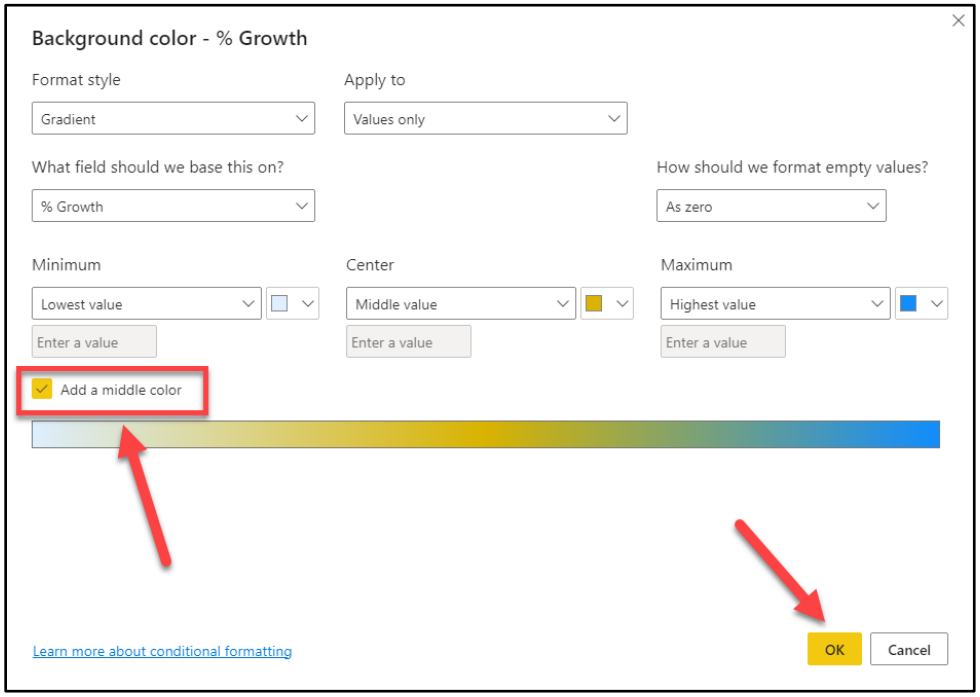


Now let's get started. We will pick up where we left off at the end of **Lab 2**.

1. With the **Matrix** visual selected, navigate to the **Values** section in the Visualizations pane and select the arrow next to **% Growth**.
2. Select **Conditional Formatting** and then choose **Background color**. The **Background color** dialog box opens. This dialog provides options to format the report background color using either rules or diverging colors.



3. Select the **Add a middle color** checkbox.
4. Then, select **OK**.

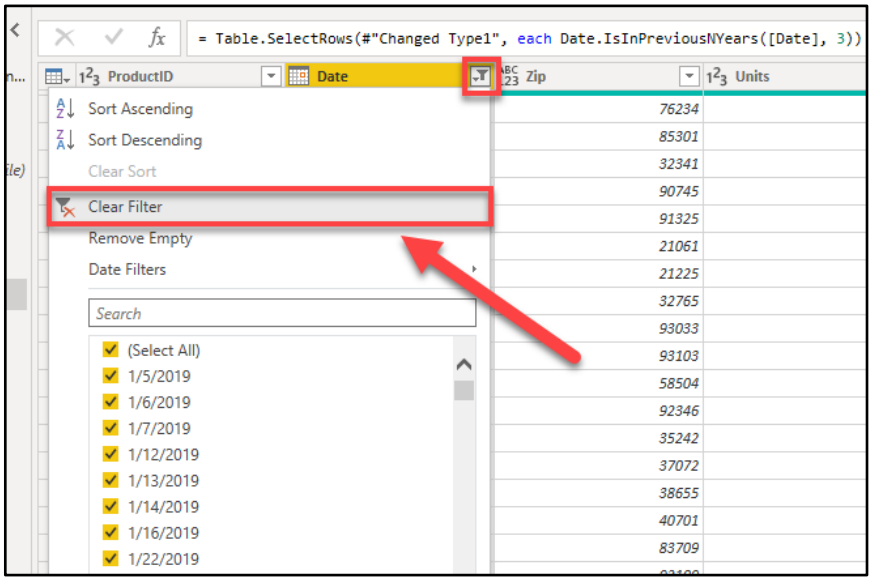


Note: Conditional formatting can also be based on another column using the **Color based on** option from the drop-down menu.

Note: As a reminder if you see 0.00% for every value in the **% of Growth** column in the Matrix then you likely need to multi-select **Australia** and **2021** like you did in **lab 2**.

In lab 1 we added a filter to only load three years of data. Let's load the entire data now.

5. From the **ribbon**, select **Home** and then choose **Transform Data**. The **Power Query Editor** window opens.
6. Change the Sales table by selecting the **filter** button on the **Date** column.
7. Choose **Clear filter** to remove the 3-year filter.

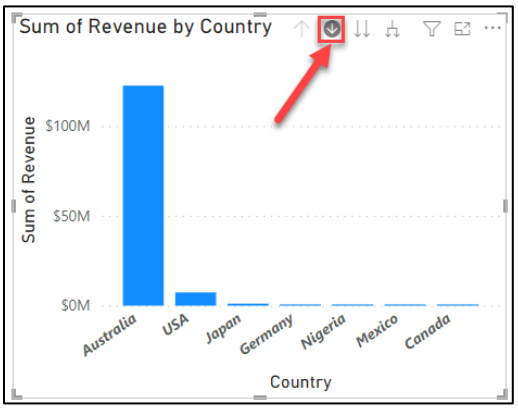


8. Select **Home** from the ribbon and then choose **Close & Apply** to load the data.

This time all the data will be loaded. It might take a couple of minutes as we are loading approximately seven million rows.

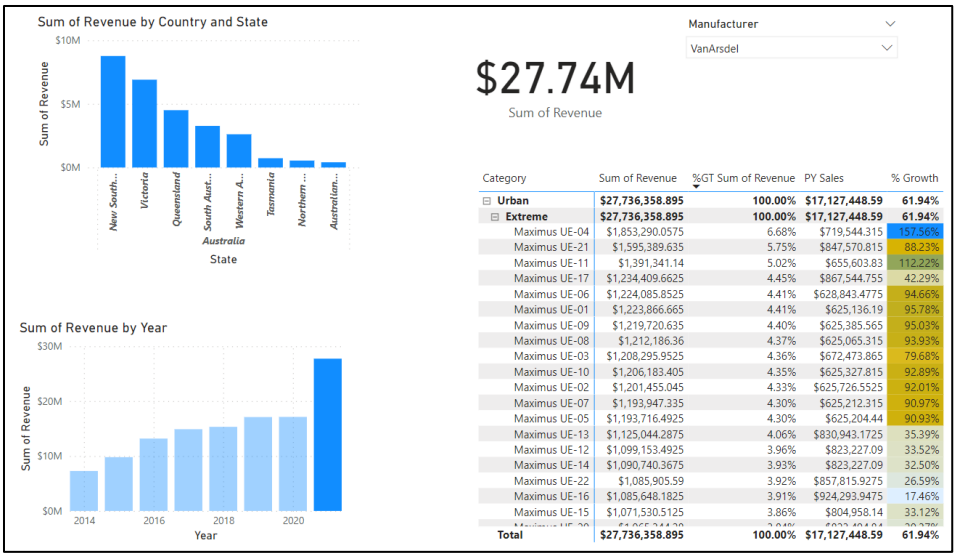
Once the data is loaded, notice the **Revenue by Year visual**. You will see columns for years 2014 through 2021.
Make sure the report is filtered by **VanArsdel** using the **Manufacturer** slicer. Remove all other filters.

9. Enable drill down mode on the **Sum of Revenue by Country** visual by selecting the down arrow at the bottom of the visual.



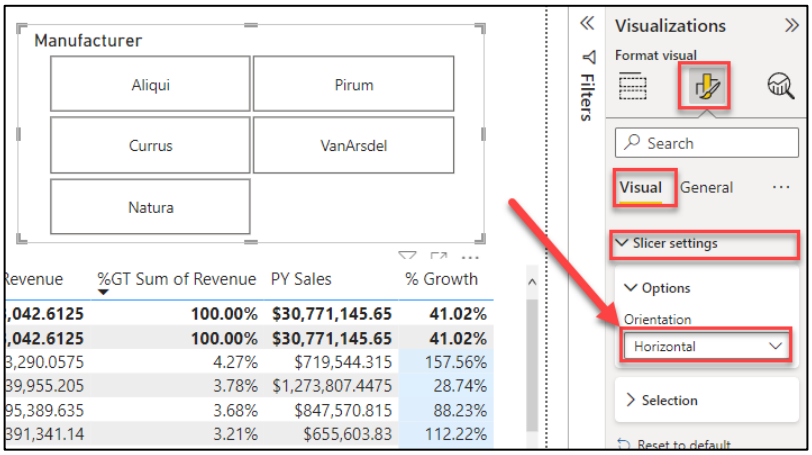
10. Within the visual, select **Australia** to drill down to **State.**
11. Disable drill mode on the **Revenue by Country and State** visual
12. Ensure you still have the year **2021** selected in the **Sum of Revenue by Year** visual

At this point, your report page should look like the figure below.



13. Hover over the **Manufacturer slicer** visual.
14. On the top right corner, select the **arrow**.
15. Choose **List**.

16. In the **Visualizations** pane, select the **Format paint brush** icon. This opens the formatting options available for a visual.
17. Under the **Visual** heading, select **Slicer settings**, choose **Horizontal** in the **Orientation** drop-down menu.
18. Notice the **Slicer** visual is updated. You can resize the visual, so all the manufacturers are listed horizontally.

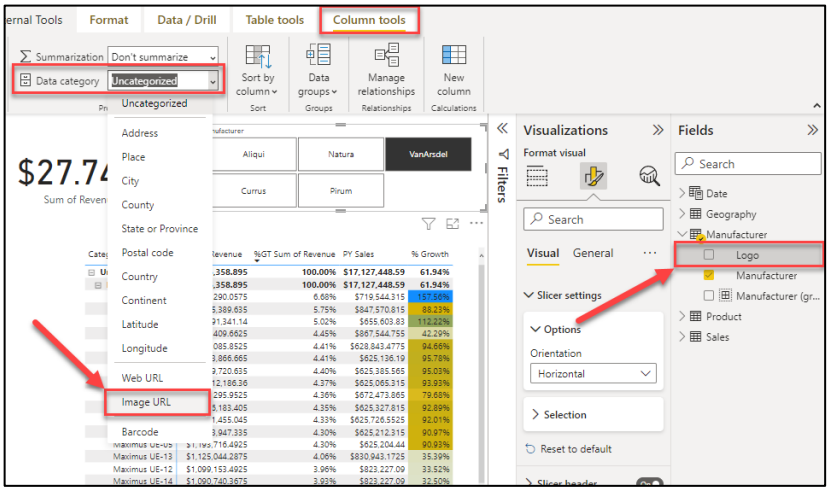


Note: There are other options that can optionally be changed here to modify the outline color, weight, and more. There is an option to enable the **Select All** option in the visual. There is also an option to make the slicer **multi-select**. Feel free to explore other formatting options.

19. Select **VanArsdel** within the **Slicer** visual.

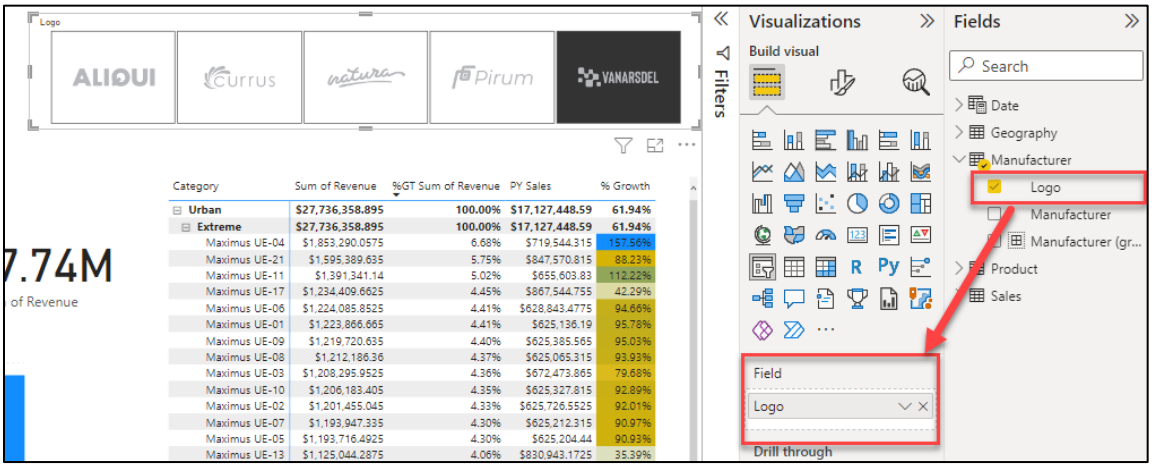
Now it would be nice to add logos of the manufacturer to the slicer instead of just text. Let's do it.

20. From the **Fields** pane, select the **Logo** field in the **Manufacturer** table. Do not select the checkbox next to the Logo field only select the name of the field.
21. From the ribbon, select **Column tools**, choose the **Data Category** drop down and then select **Image URL.** Setting the data category property to **Image URL** helps Power BI understand that the data in this field is a URL so it can render the image in the report.

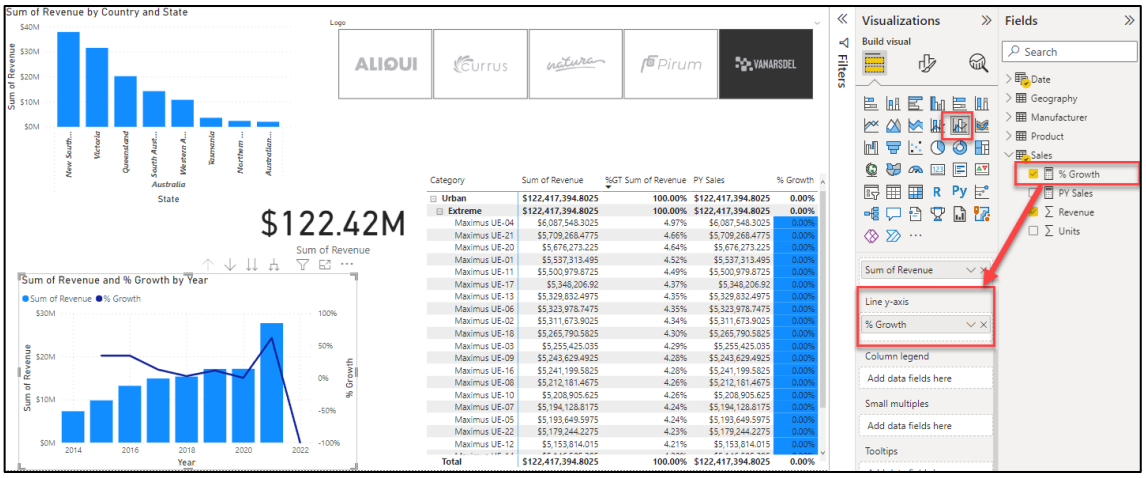


22. From the canvas, select the **Manufacturer** slicer.

23. From the **Fields** pane, drag and drop the **Logo** field from the **Manufacturer** table to the **Field** box in the Visualizations pane. Select the **X** next to the **Manufacturer** column in the box so that the Logo field has replaced it.
24. **Resize** and **move** the visuals as needed.
25. Select the **VanArsdel** logo in the Manufacturer **Slicer** visual to filter all the other visuals.

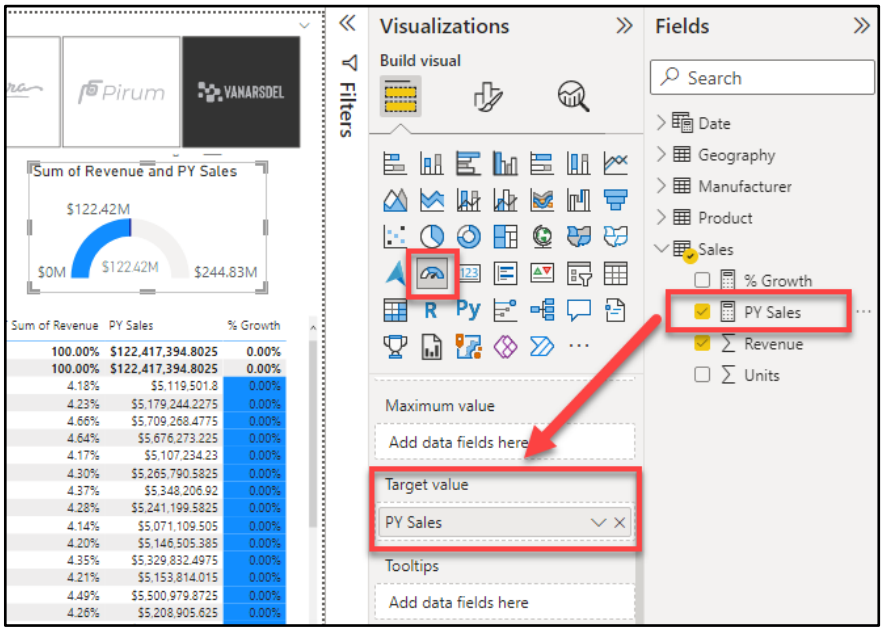


26. Select the **Sum of Revenue by Year** visual.
27. From the **Visualizations** pane, select the **Line and clustered column chart** to change the visual type.
28. From the **Fields** pane, drag and drop the **% Growth** field from the **Sales** table to the **Line y-axis** box.



This provides a representation of the revenue and growth over time.

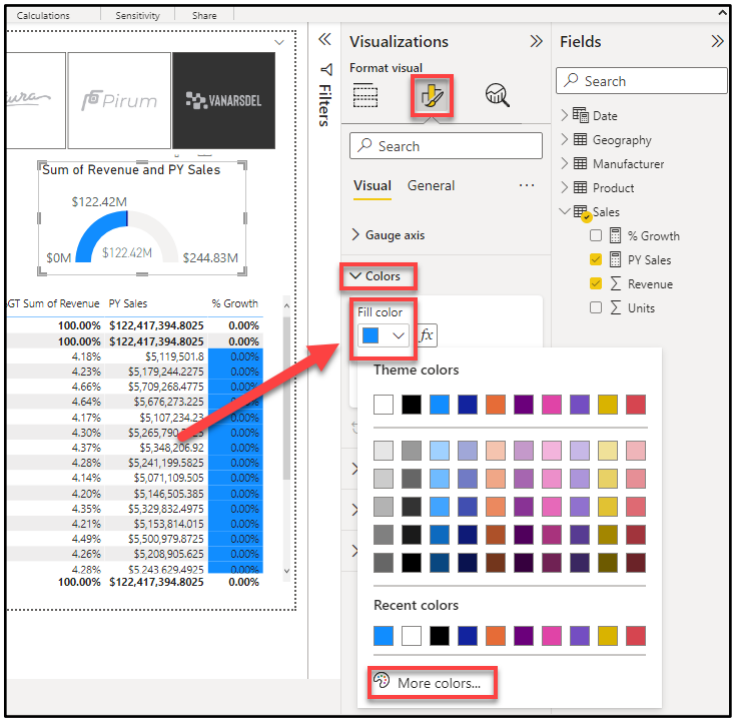
29. Now let's select the **Sum of Revenue Card** visual so we can change it to a **Gauge** visual.
30. From the **Visualizations** pane, select the **Gauge** visual.
31. From the **Fields** pane, drag and drop the **PY Sales** field from the **Sales** table to the **Target value** in the **Visualizations** pane.



32. **Resize** and **move** the visuals as needed. Now we can compare **Revenue** with the target.

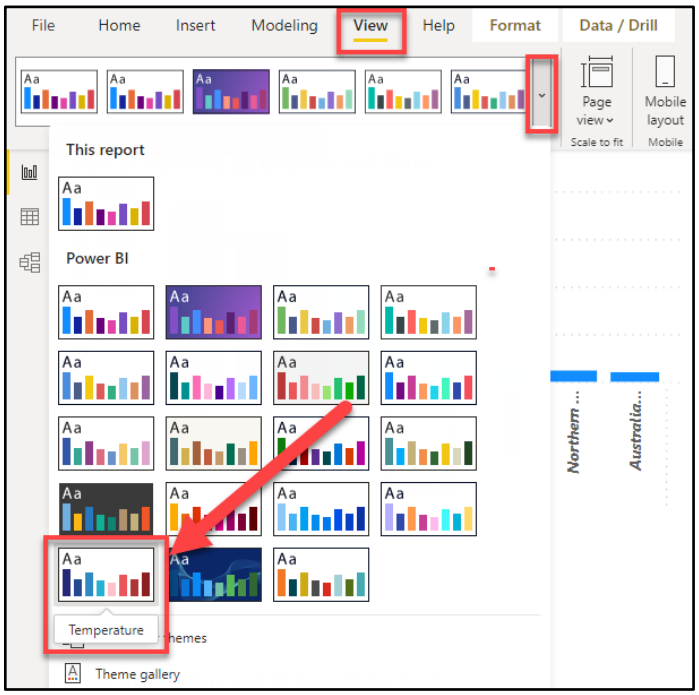
Now let's take time to select the colors for the visuals.

33. Select the **Gauge** visual.
34. From the **Visualizations** pane, select the **Format paint brush** icon.
35. Expand the **Colors** section.
36. Select the arrow next to **Fill** color.
37. Notice you can pick a color from the default color palette or pick **More colors**. No need to make a change here because the next steps will standardize all the report colors used.



Let's check out some of the **themes** available.

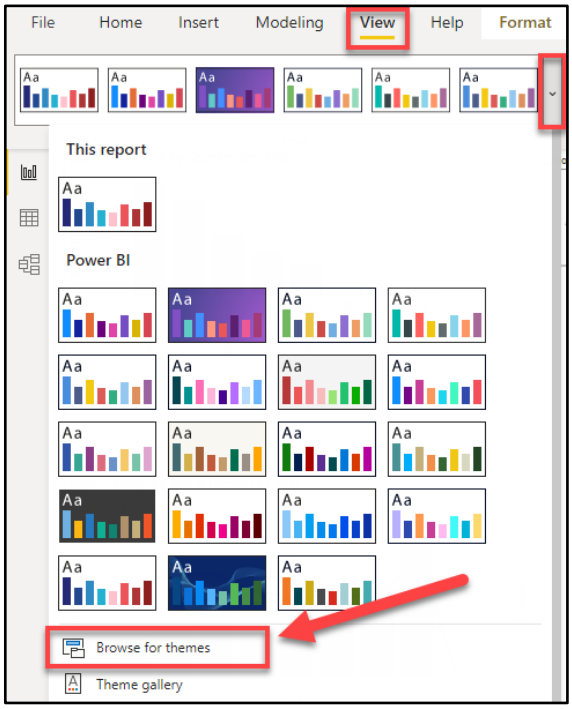
38. From the ribbon, select **View**, choose **Themes**, and then select **Temperature**.

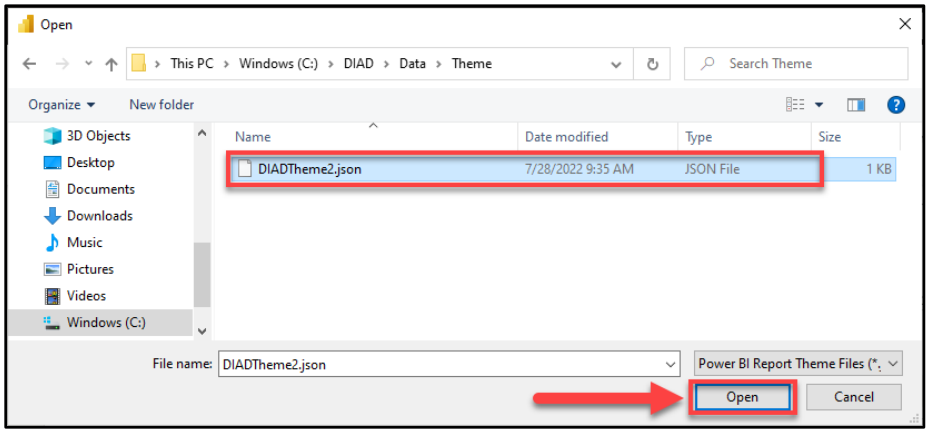


Notice that the colors on all the visuals are updated. Feel free to try the other **out-of-the-box themes**.

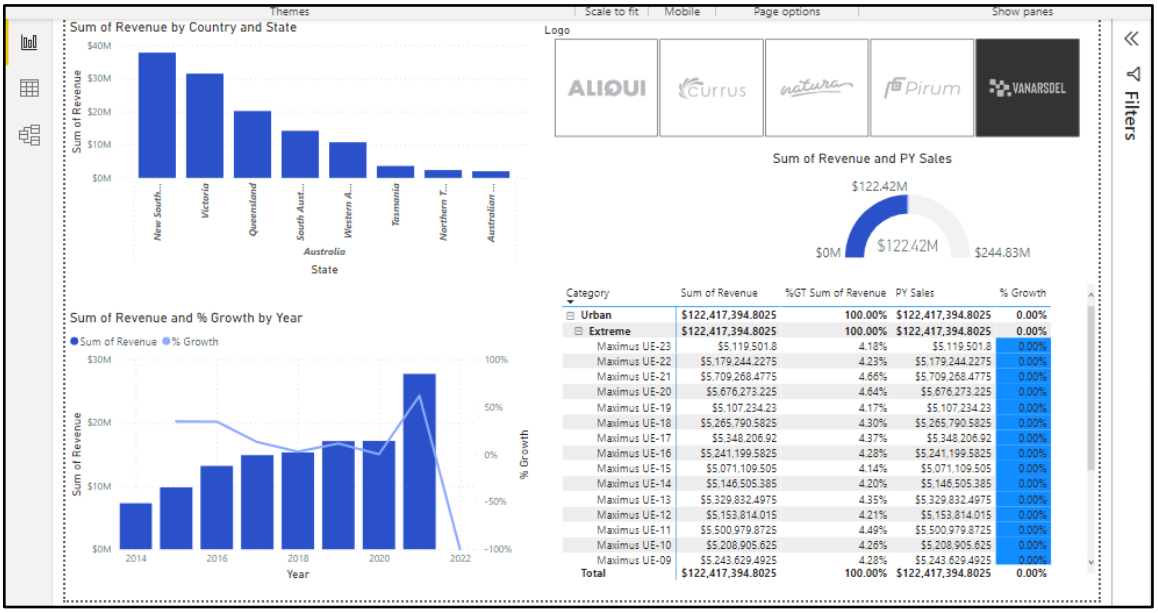
In our scenario, the Marketing department has provided standard color themes to be used across reports. We can use the **Report Theme** feature in Power BI by uploading a theme. The **Report Theme** requires a **JSON file** where the data colors, background, foreground, and a table of accent colors are defined. The JSON file can be used across all the reports.

39. From the ribbon, select **View**, choose **Themes**, and then select **Browse for themes**.
40. A file browser dialog box opens. Navigate to the **Data** folder then the **Theme** folder (/Data/Theme).
41. Select the **DIADTheme2** file and then choose **Open**.





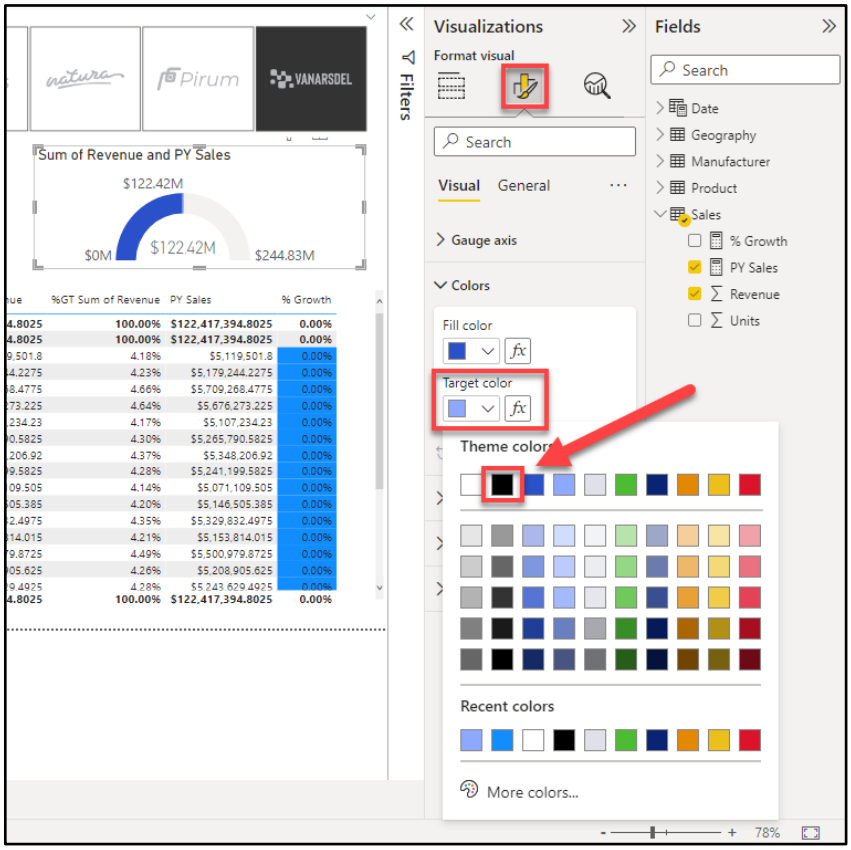
42. Once the theme is imported, a success dialog box opens. Select **Close**.



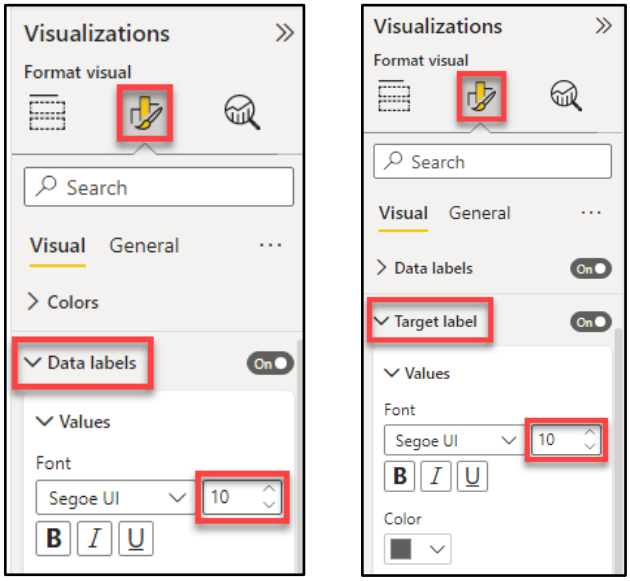
Notice colors on all the visuals are updated. Your report should look like the figure at this point. This theme looks good. Now, most of the visuals are blue, so let's add some contrast.

Note: Here you can save and add your custom themes.

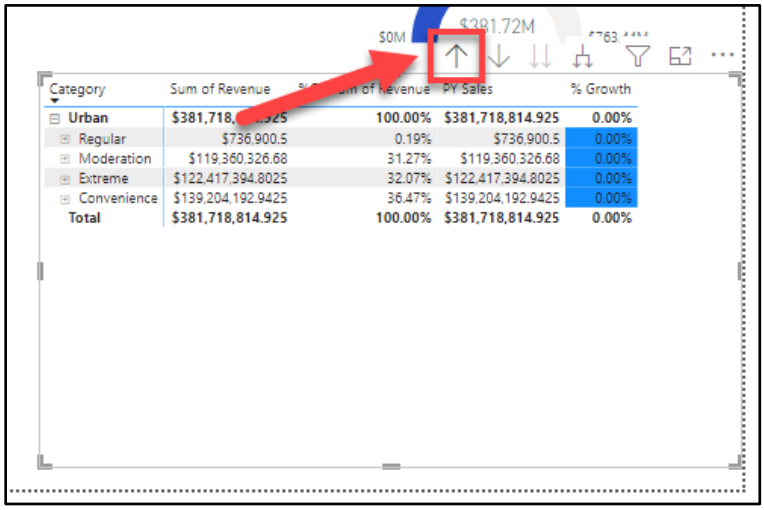
43. Select the **Gauge** visual.
44. From the **Visualizations** pane, select the **Formatting paint brush** icon.
45. Expand the **colors** section.
46. Select the drop-down menu below **Target color**. Notice the color palette is different now.
47. Select the color **black**. Notice the subtle change to the target line in the visual.
48. Collapse the **Colors** section.



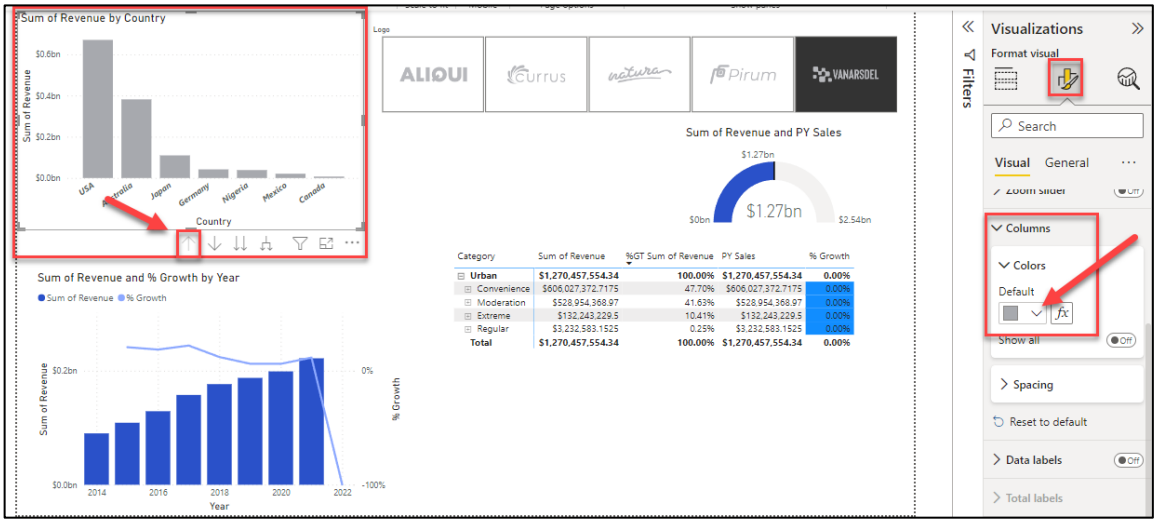
49. Expand the **Data Labels** section in the **Visualizations** pane.
50. Change the **Text size** to **10**.
51. Then, expand the **Target label** section in the **Visualizations** pane.
52. Change the **Text size** to **10**.



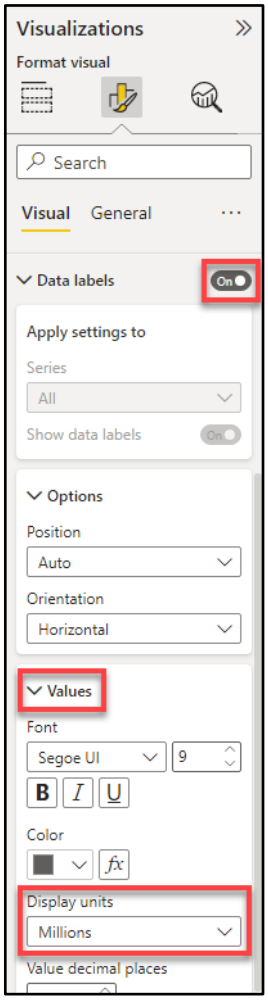
53. Select the **Matrix** visual.
54. **Drill up** to the **Segment** level.



55. Select the **Sum of Revenue by Country and State** visual.
56. **Drill up** to the **Country** level.
57. From the **Visualizations** pane, select the **Formatting paint brush** icon.
58. Expand the **Columns** section, then the **Colors** section.
59. Select a light shade of **gray** as the **Default color**.

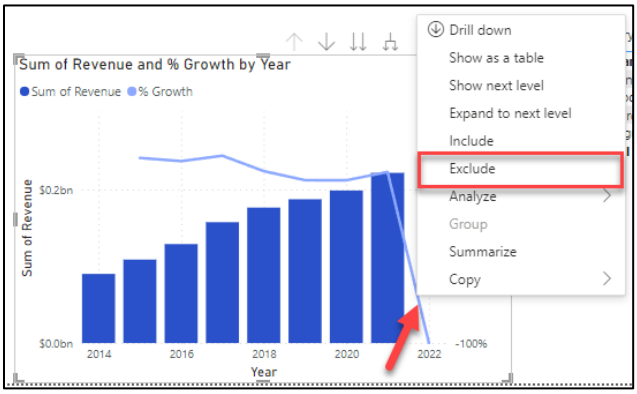


60. Turn **on** the **Data labels** and expand this section in the **Visualizations** pane.
61. Expand the **Values** section
62. Change the **Display units** to **Millions**.



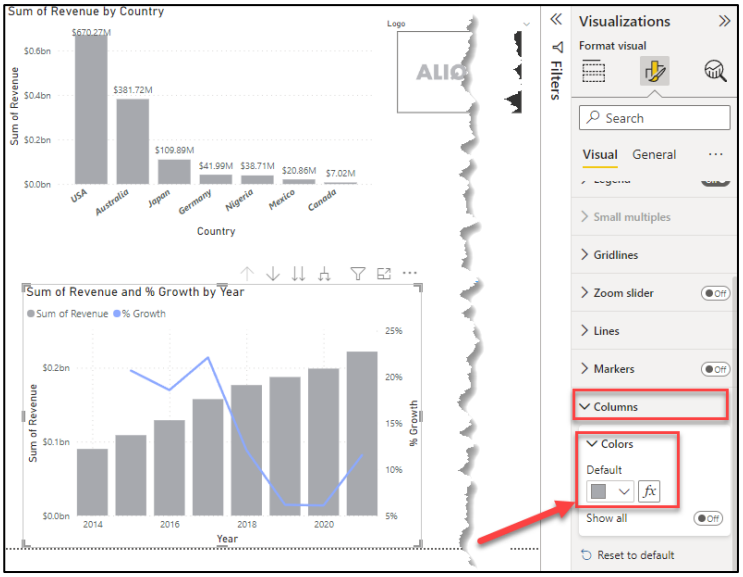
Notice that there are lot of formatting options. For example, a visual title can be changed and formatted, or you can add a border and background to the visual. Feel free to explore the options.

63. Let's move to another visual. Select the **Sum of Revenue and % Growth by Year** visual.
64. Since there is no Revenue value in the year **2022** right-click on the line above 2022 and select **Exclude**.

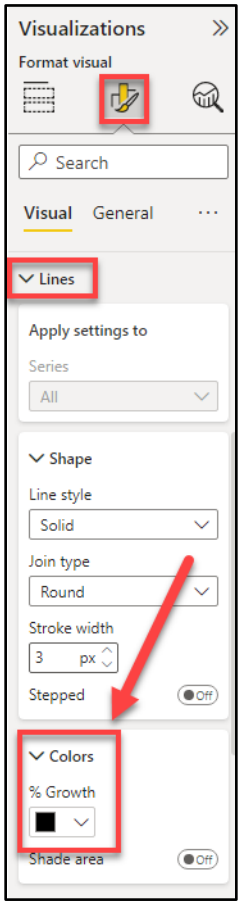


65. Next, from the **Visualizations** pane, select the **Formatting paint brush** icon.
66. Expand the **Columns** section.

67. Expand the **Colors** section
68. Select a light shade of **gray** as the **Default color**.

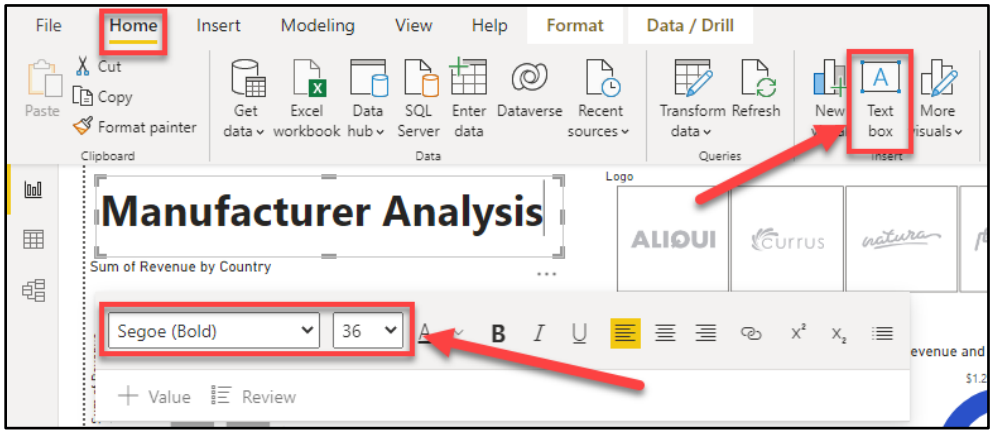


69. With the **Sum of Revenue and % Growth by Year** visual still selected, in the **Visualizations** pane, expand the **Lines** section.
70. Then, expand the **Colors** sub-section.
71. Set the **% Growth** color to **black**.

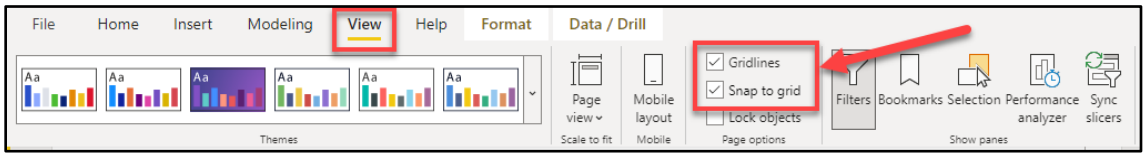


Now let's add a **report title**.

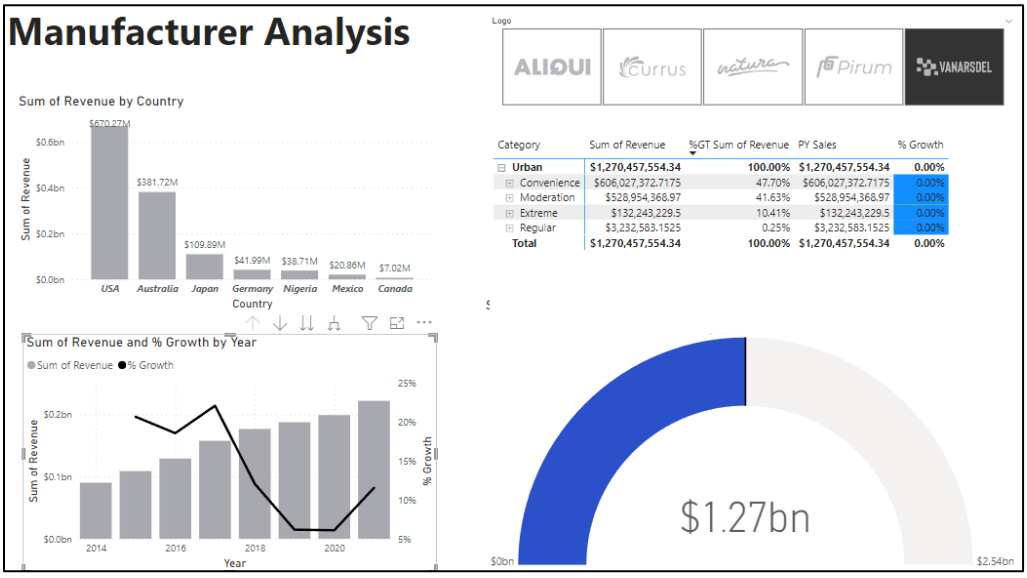
72. From the ribbon, select **Home** and then choose **Text box**. Notice a text box visual is added.
73. **Resize** and move the visuals as needed.
74. Enter **Manufacturer Analysis** in the text box.
75. Highlight **Manufacturer Analysis** to format the text.
76. Select **Segoe (Bold)** as the **font**.
77. Select **36** as the **font size**.
78. **Resize** the text box as needed.
79. Notice the additional formatting options that have been added are highlighted in **black** (superscript, subscript, and bulleted lists)



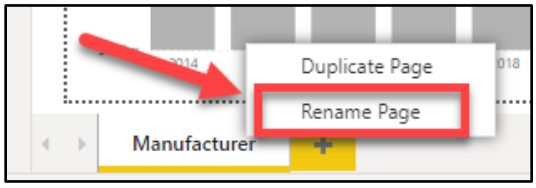
80. From the ribbon, select **View**.
81. Select the checkbox next to **Show Gridlines** and **Snap to Grid**. This will help with aligning the visuals.



82. Now, use the **Gridlines** and **Snap to Grid** features to position and resize your visuals to appear like the figure below:

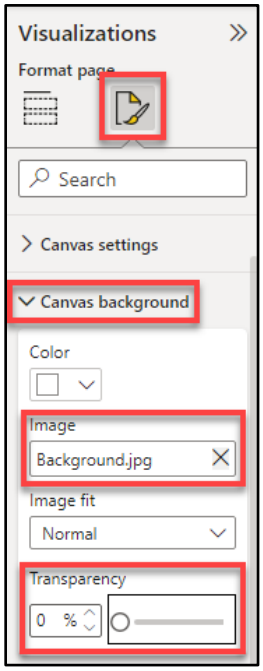


83. Uncheck the **Show Gridlines** and **Snap to Grid** options to disable these features.
84. Right-click the page name in the lower-left corner and then select **Rename Page** from the options menu.
85. Rename the page to **Manufacturer**.



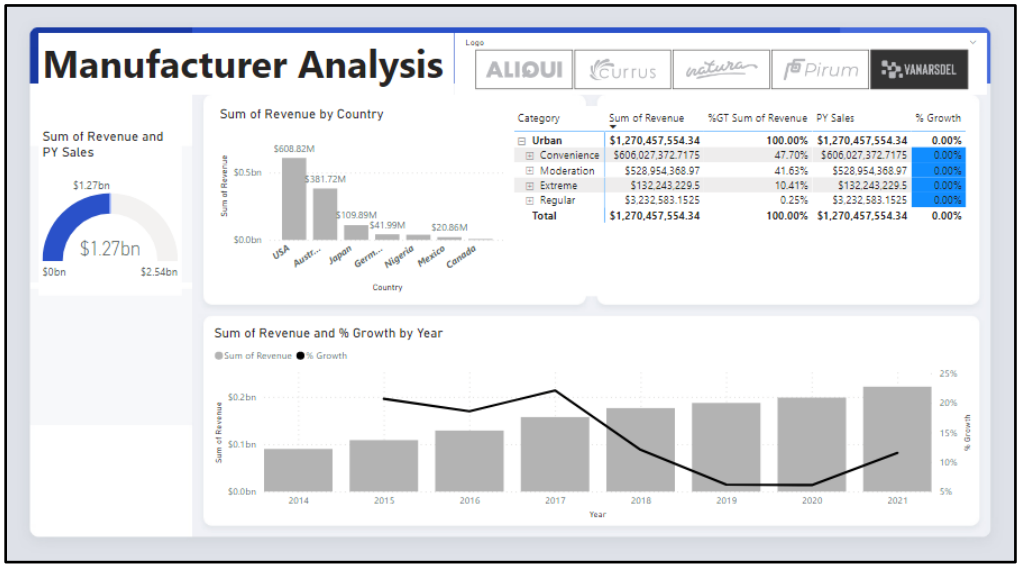
We can also use a background image to format the reports. Let's try it.

86. Select the white space in the canvas.
87. From the **Visualizations** pane, select the **Formatting paint brush** icon.
88. Expand the **Canvas Background** section.
89. Select the **Browse Image** button.
90. A File browser dialog box opens. Browse to the **DIAD** folder then the **Data** folder (/DIAD/Data).
91. Select the **Background.jpg** file.
92. Select **Open**.
93. Slide the **Transparency** slider to **0%**.



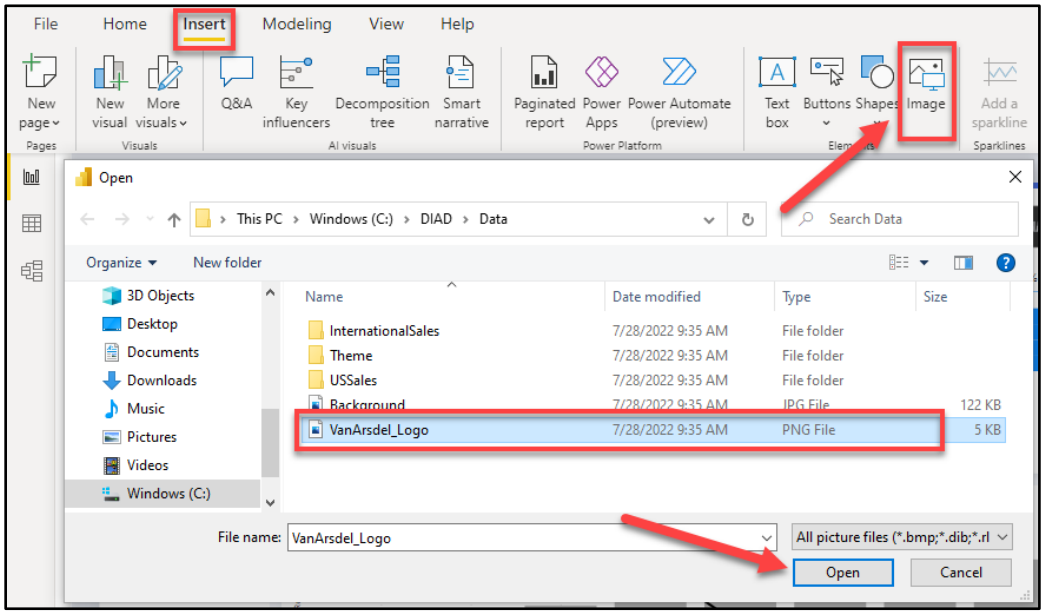
Notice we have a template which has a place for **header** and **slots** for images.

94. **Resize** and **arrange** the visuals as shown in the figure.



Now let's add a **logo**.

95. From the ribbon, select **Insert** and then choose **Image**
96. The **File browser** dialog opens. Browse to the **DIAD** folder then the **Data** folder (/DIAD/Data).
97. Select the **VanArsdel_Logo.png** file.
98. Then, select **Open**.

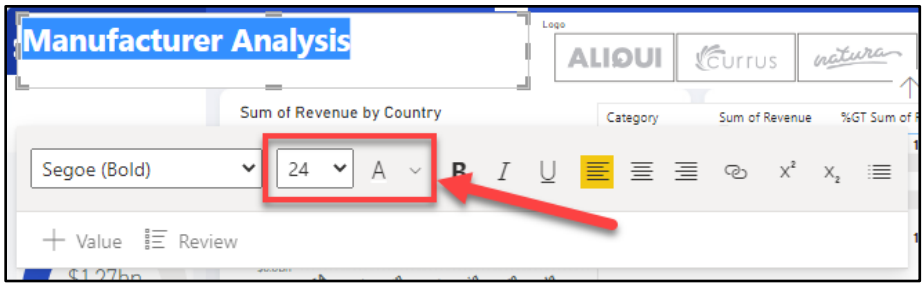


99. **Resize and drag** the image to the top left corner of the page.

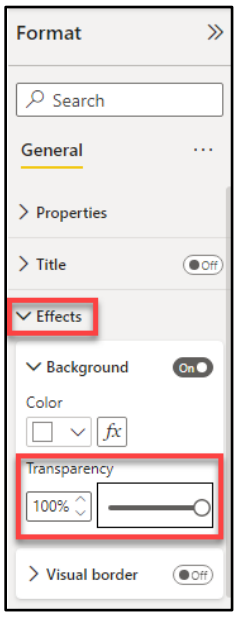
> **Note:** The logo is transparent. You need to place it on the blue background to see it.

Now let's change the font color of the report title.

100. Highlight **Manufacturer Analysis** in the text box.
101. Select the arrow next to the **A** to change the font color. Select the **white** color.
102. Change the **size** of the **font** to **24**.

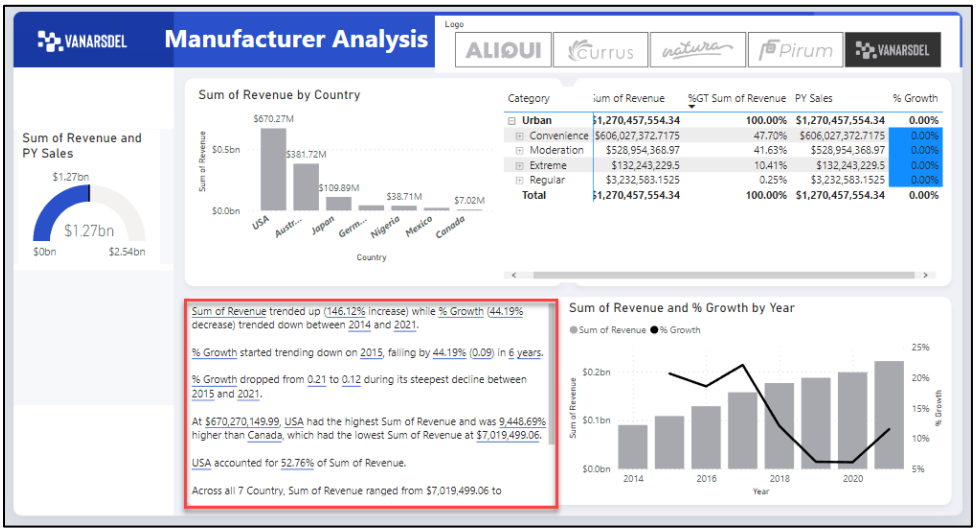


103. Expand the **Effects** section in the **Format** pane and set the **Transparency** to **100%**.
104. Resize and move the visuals around if needed making sure they are still in the same locations as before.



Now let's add a **smart narrative visual** to our report.

105. First, **resize** the **Sum of Revenue and % Growth by Year** visual to make space at the bottom of the report.
106. Add a **Smart narrative visual** to the canvas. The smart narrative visualization helps you quickly summarize visuals and reports. It provides relevant innovative insights that you can customize.

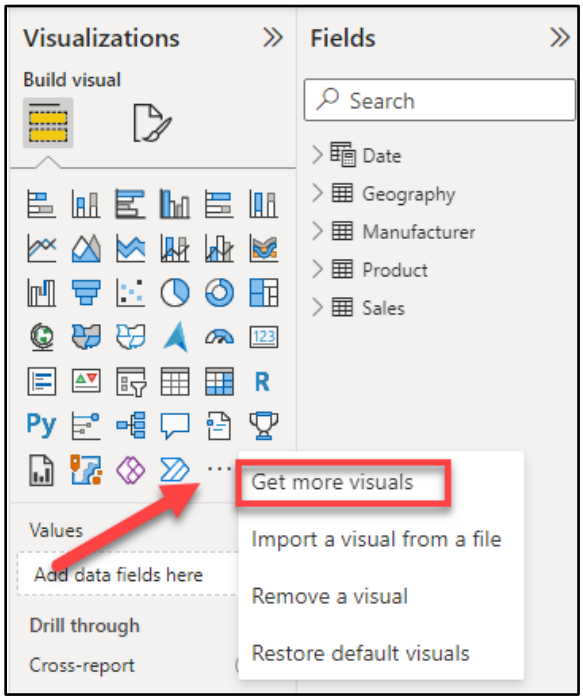


Out of the box, Power BI has a large selection of visuals. However, there may be a use-case when you need a custom visual. To meet this requirement, the visualization engine is open-sourced. The Power BI community contributes visuals in the marketplace. You can add and use these visuals in your reports.

There is also an option to create your own visual or import visuals into Power BI Desktop.

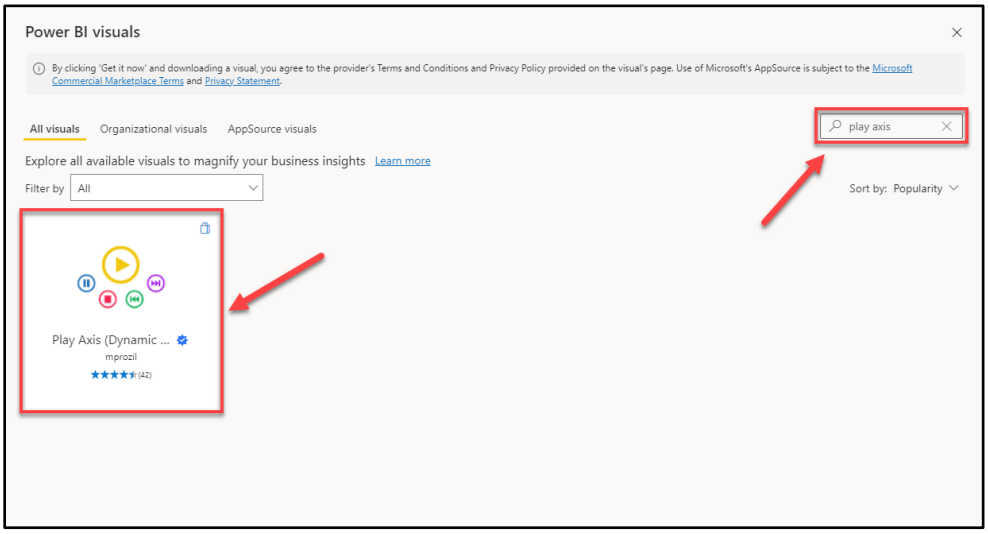
Now let's add a **custom visual**.

107. From **Visualizations** pane, select the **ellipse** in the last row of visuals.
108. Select **Get more visuals**.



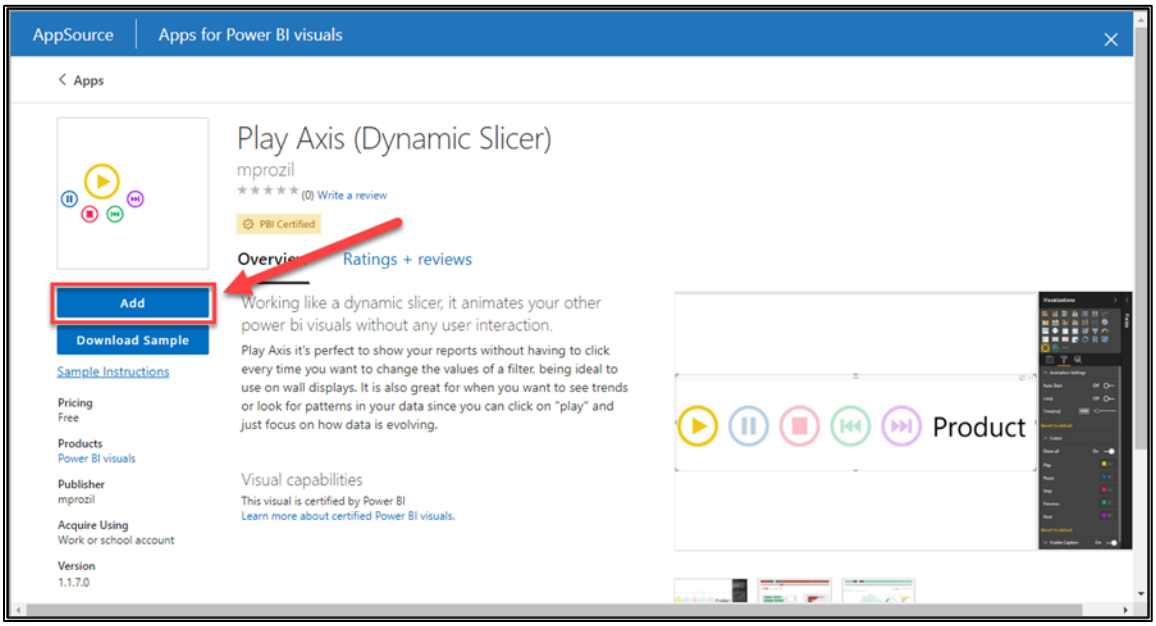
Note: You may be prompted to sign into your Power BI account to access the custom visuals library. If you are unable to login, you can select **Import a visual from a file** and select the **Play Axis** visual that is found in the class files (/DIAD/Data).

109. Type **play axis** in the **search box** in the top right-hand corner of the Power BI visuals dialog box and select the **Search** icon.
110. Select the **Play Axis (Dynamic Slicer)**.



Note: Notice the checkmark in the blue star. This image is used to identify certified custom visuals. Custom visuals that meet Power BI teams coding requirements are certified. Certified custom visuals support features like export to PowerPoint and the ability to display in subscription emails which are not supported by non-certified custom visuals.

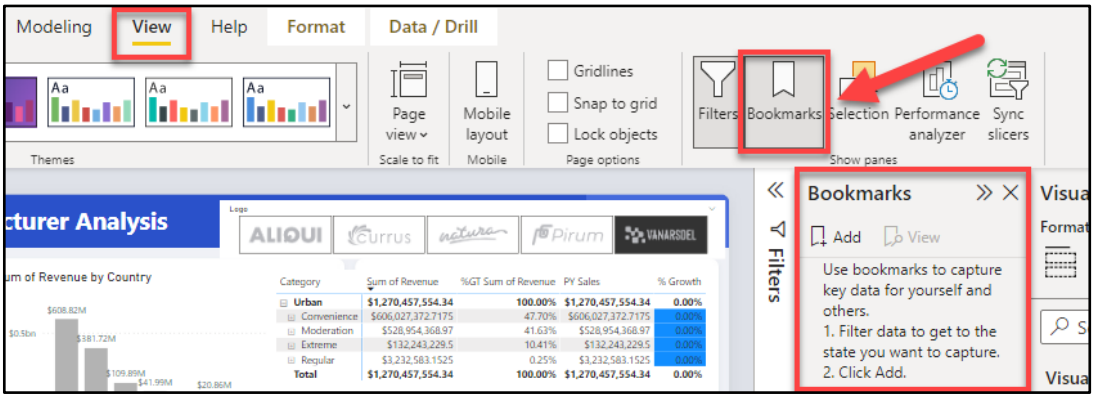
111. The **AppSource dialog box** will then appear. Select the **Add** button below the Play Axis (Dynamic Slicer) cover image.



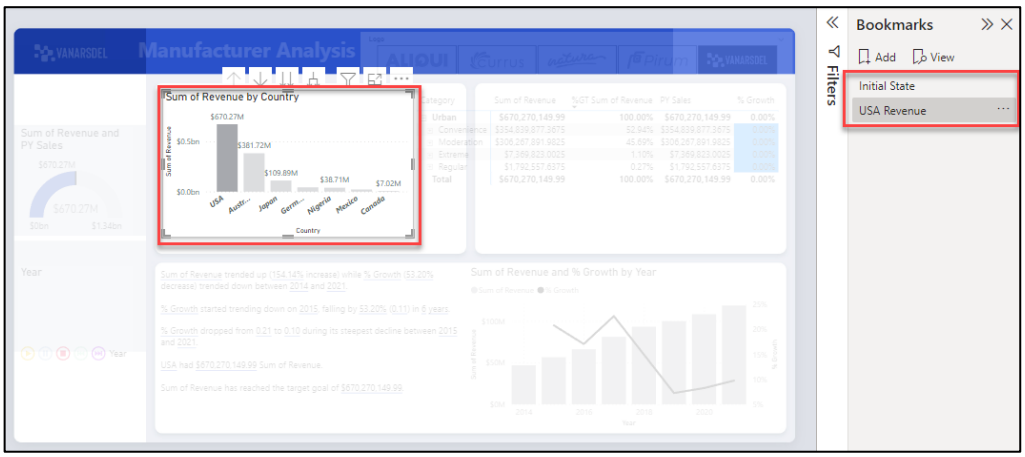
112. After a few moments you should see a notification that the visual was successfully imported. Select OK.
     Notice a new visual is added to the list of available visuals.
113. Select the white space in the canvas.
114. From the **Visualizations** pane, select the newly imported **Play Axis** visual.
115. From the **Fields** pane, select the checkbox next to the **Date** field in the **Date** table.
116. From the **Visualizations** pane, select the **Formatting paint brush** icon.
117. Expand the **Colors** section.
118. Enable the **Show all** option.
119. **Resize** and **position** the visual as shown in the figure below.

Now that we have a report ready, let's use **Bookmarks** to tell the story we discovered. Bookmarks capture the currently configured view of a report page, including filtering and the state of visuals which helps to make it easier to present the story.

120. From the ribbon, select **View**.
121. Select the **Bookmarks** button to enable Bookmarks. The **Bookmarks** pane opens.

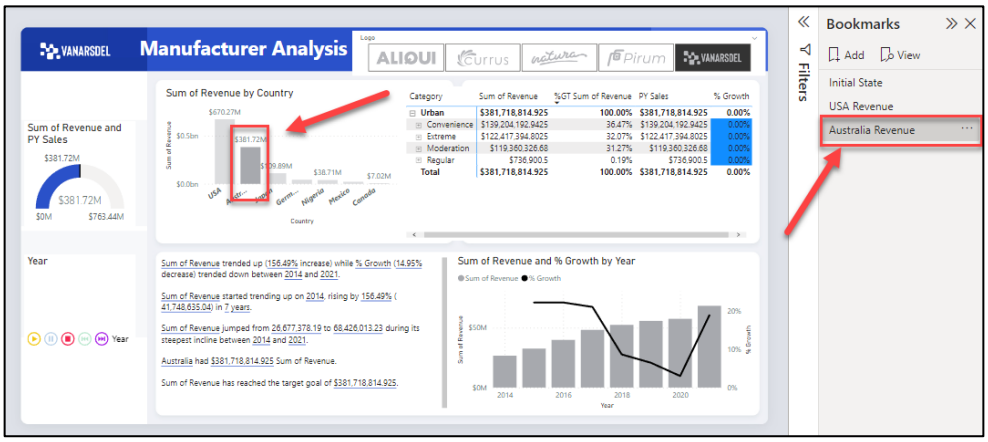


122. Select **Add** in the **Bookmarks** pane. This will add the current state of the visual to the bookmark.
123. Select the **ellipse** next to the newly created **Bookmark 1**.
124. Choose **Rename** and change the name to **Initial State**.
125. In the **Sum of Revenue by Country** visual, select the **USA** column.
126. Hover over the **Sum of Revenue by Country** visual and select the **ellipse** on the top right corner.
127. Select **Spotlight**.
128. In the **Bookmarks** pane, select **Add**. This will add a new bookmark with the current state of the report.
129. Change the bookmark name to **USA Revenue**

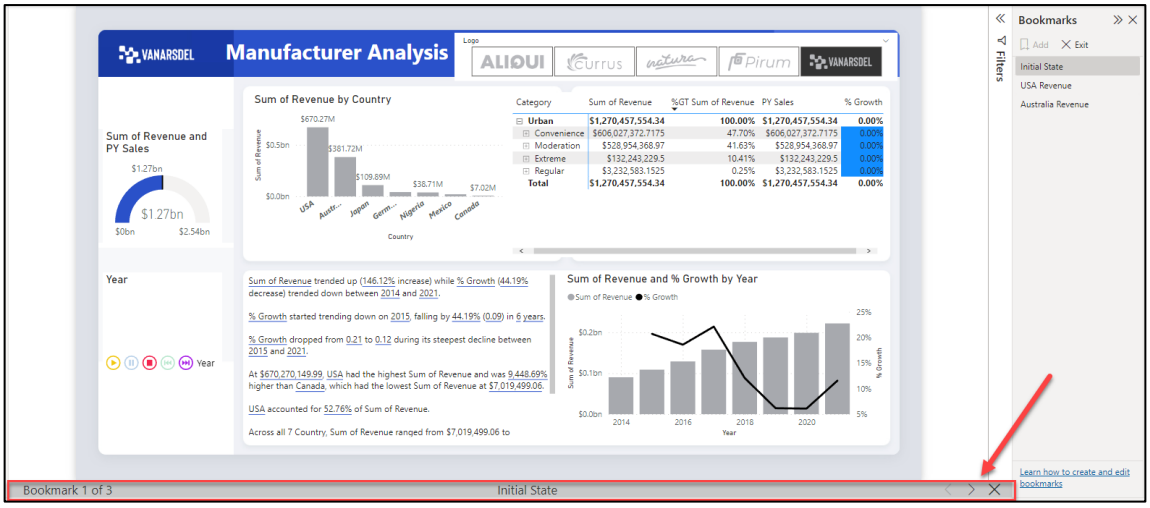


130. Select the canvas.
131. Select **Australia** in the **Sum of Revenue by Country** visual.

132. In the **Bookmarks** pane, select **Add**. This will add a new bookmark with the current state of the report.
133. Change the bookmark name to **Australia Revenue**



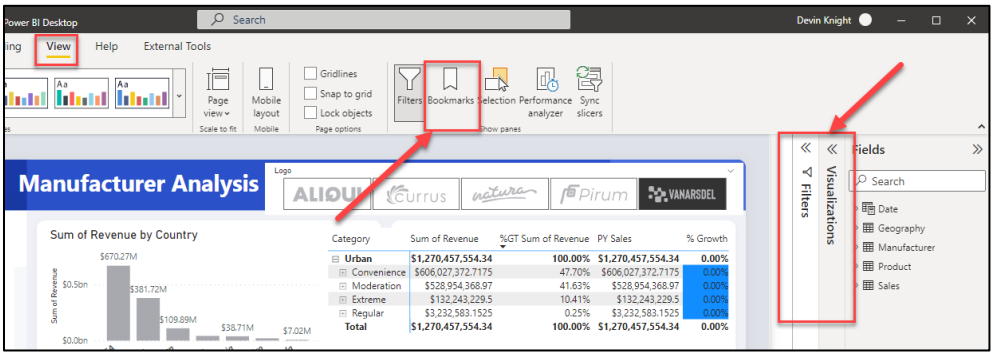
134. From the **Bookmarks** pane, select **View**. You are now in Bookmarks slide show mode. You will be in the first bookmark, which we called **Initial State**. Notice on the bottom of the report pane there is an option to navigate between bookmarks.
135. You can use the arrows to navigate between bookmarks and tell your story.



136. From the **Bookmarks** pane, select **Exit** to exit the Bookmarks slide show mode.

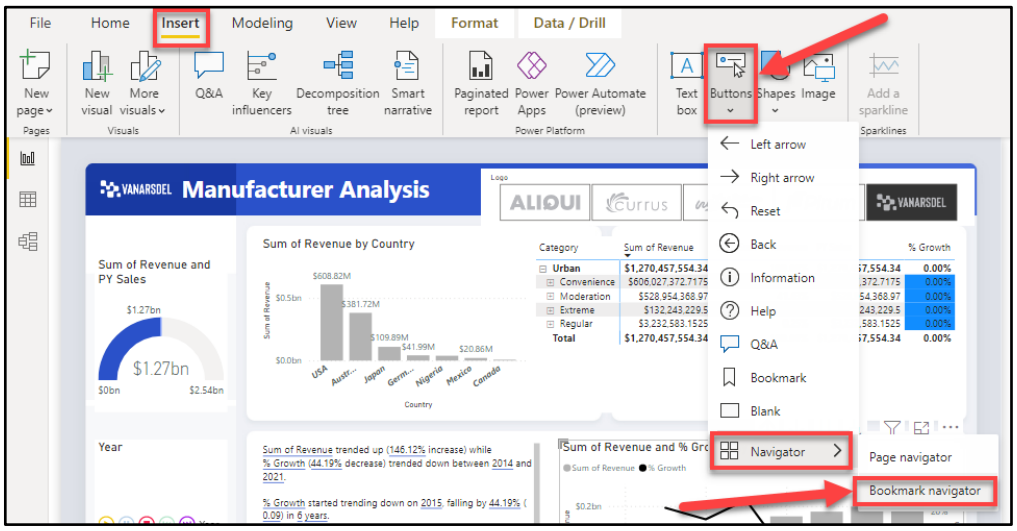
If time permits, feel free to explore other options available with Bookmarks, such as **Selected Visuals**, as you continue to build your story.

137. From the ribbon, select **View**.
138. Unselect the **Bookmarks Pane** button.
139. Collapse the **Visualizations** and **Filters** pane by clicking on the arrows

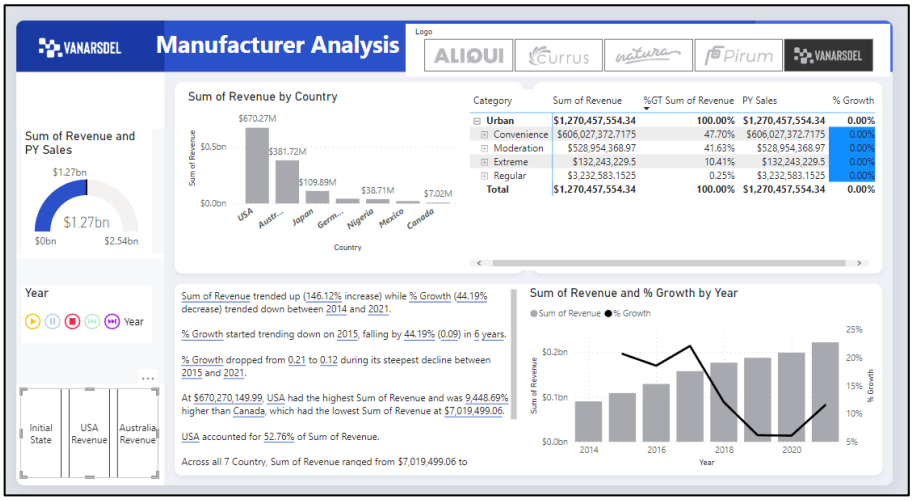


Now let's add bookmark navigator buttons to the canvas

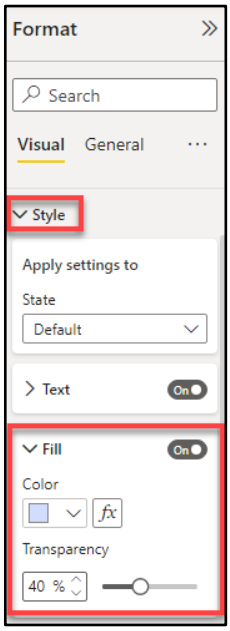
1. From the ribbon, select the **Insert** ribbon.
2. Select **Buttons** and choose **Navigator** -> **Bookmark navigator**



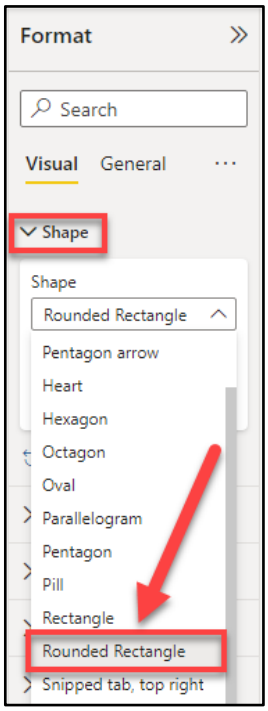
3. Arrange the Bookmark navigator to fit on the page as shown below in the figure.



4. With the buttons still select navigate to the **Format** pane, expand the **Style** section, then expand the Fill sub-section. Change the Fill color to a **light blue** and set the **Transparency** to **40%.**



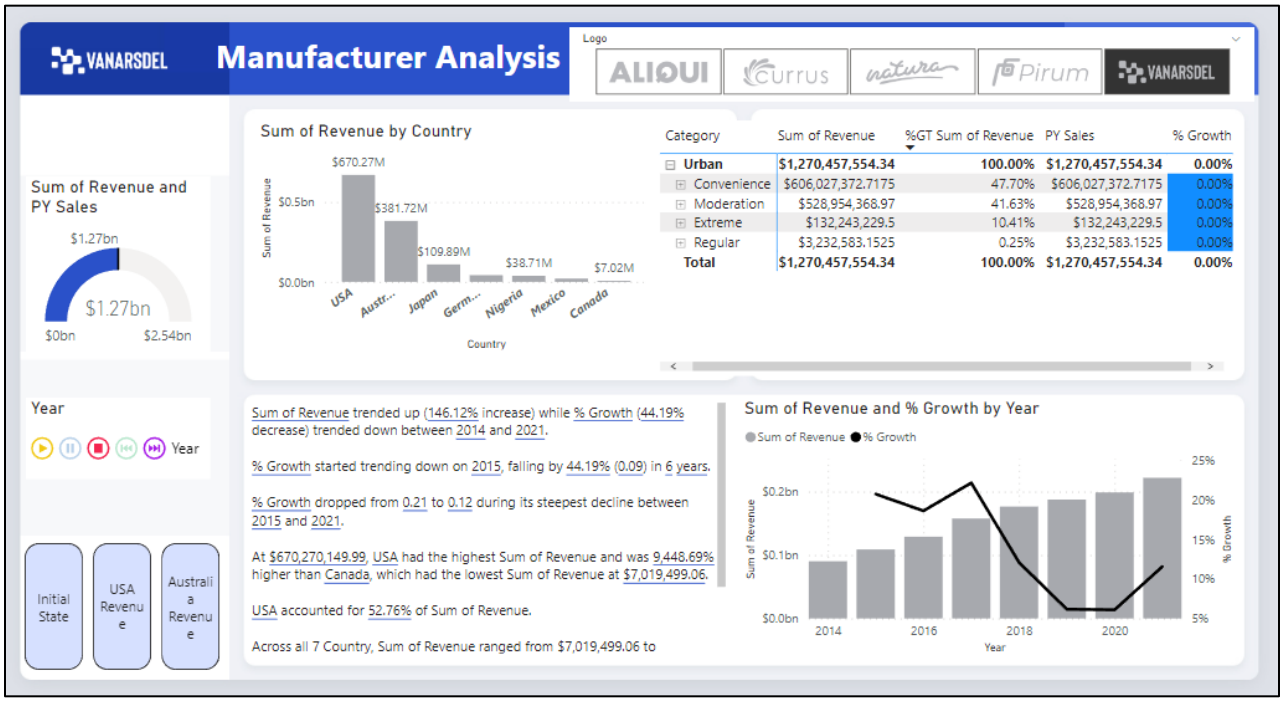
5. Expand on the **Shape** section. There is a long list of shapes to choose from, let's pick **Rounded Rectangle**



Feel free to test out the new functionality.

Note: To utilize the new buttons you must use CTRL + Click while inside the Power BI Desktop. After publishing the report your end users will simply click the buttons without needing to hold CTRL.

Your report should look like the figure shown below. Now let's finish up by saving the file.



Note: Interacting with the report can significantly change the report appearance. For example, selecting a year from the **Sum of Revenue and % Growth by Year** will activate the conditional formatting in the matrix.

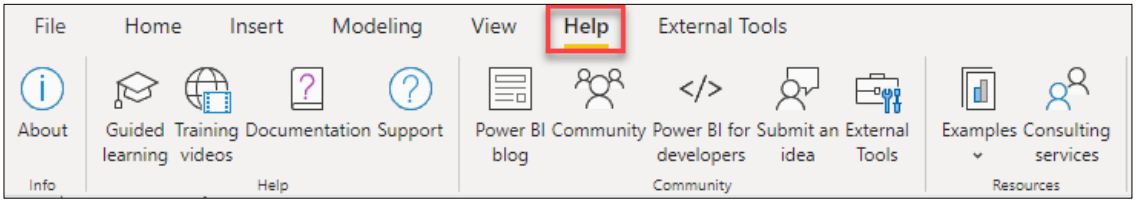
6. From the ribbon, select **File** and then choose **Save**.

You have built your first report!

You have successfully completed the hands-on lab by creating a report to share to your team. The next lab covers creating a dashboard from this report to share with your team. You have seen an overview of the functionality in Power BI Desktop. There are many more features for you to explore with your data!

References

Dashboard in a Day introduces you to some of the key functions available in Power BI. In the ribbon of the Power BI Desktop, the Help section has links to some great resources.



Here are a few more resources that will help you with your next steps with Power BI.

- Getting started: http://powerbi.com
- Power BI Desktop: https://powerbi.microsoft.com/desktop
- Power BI Mobile: https://powerbi.microsoft.com/mobile
- Community site https://community.powerbi.com/
- Power BI Getting started support page: https://support.powerbi.com/knowledgebase/articles/430814-get-started-with-power-bi
- Support site https://support.powerbi.com/
- Feature requests https://ideas.powerbi.com/forums/265200-power-bi-ideas
- New ideas for using Power BI https://aka.ms/PBI_Comm_Ideas
- Power BI Courses http://aka.ms/pbi-create-reports
- Power Platform https://powerplatform.microsoft.com/en-us/instructor-led-training/
- Power Apps Business Apps | Microsoft Power Apps
- Power Automate Power Automate | Microsoft Power Platform
- Dataverse What is Microsoft Dataverse? - Power Apps | Microsoft Docs

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