



Lab 02A

# Fast Track Power BI Embedding

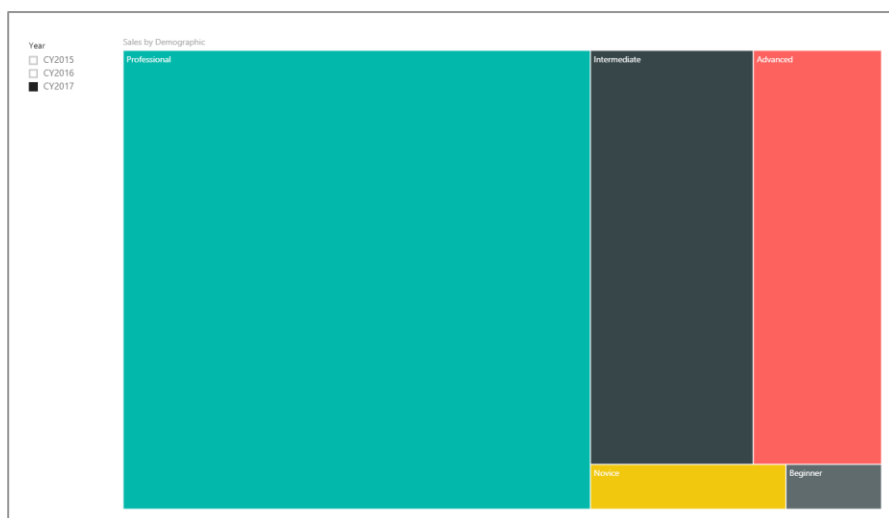
# Overview

The estimated time to complete the lab is 20 minutes

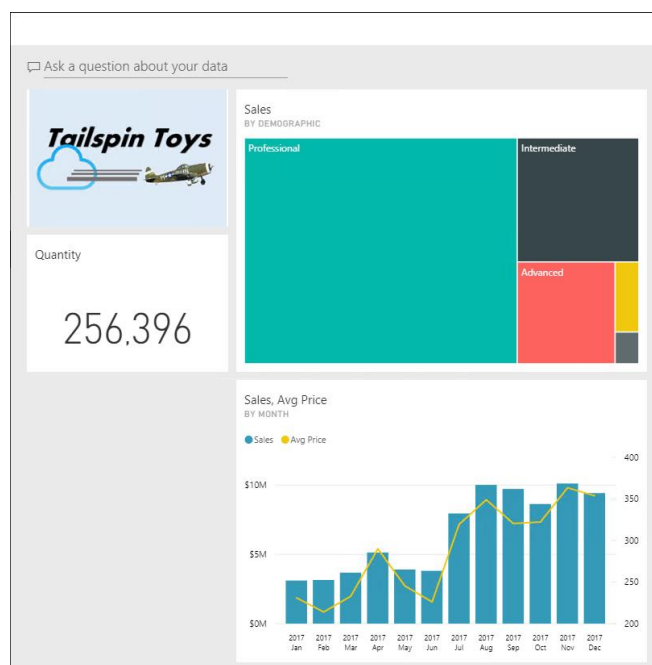
*You must have completed **Lab 01A** before commencing this lab.*

In this lab, you will use the Onboarding Embed Tool to embed a report into a sample application. You will then review the app workspace created by the tool, create a report and a dashboard, and also explore working with Q&A.

You will add a report that looks like the following.



You will assemble a dashboard that looks like the following.



# Using the Onboarding Embed Tool

In this exercise, you will use the Onboarding Embed Tool to embed a report into a sample application.

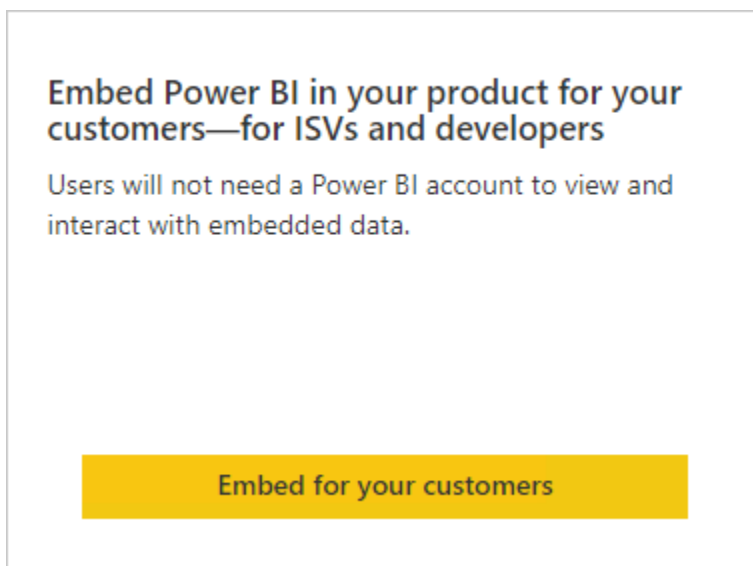
## Using the Onboarding Embed Tool

In this task, you will use the Onboarding Embed Tool to embed a report into a sample application.

1. In Google Chrome, in the same instance used to sign in to Power BI, add a new tab.
2. Navigate to <https://app.powerbi.com/embedsetup>.

*For convenience, the **URL** can be copied from the **<CourseFolder>\PowerBIDevIAD\Lab02A\Assets\Snippets.txt** file.*

3. Select **Embed for your Customers**.



*The tool will guide you through five steps. At Step 1, it use the security token used to sign in to the Power BI portal to sign in to the Power BI service.*

4. When prompted to start a 60-day Free Pro Trial, click **Start Trial**.



5. When notified of the Free Pro Trial status, click **Close**.

6. At the right, notice the **Summary** pane, describing the account used to sign in to Power BI.



*As you progress through the steps, additional details will be described in this pane.*

7. Click **Next**.



8. At Step 2, to register an Azure AD application, in the **Application Name** box, enter **Power BI Dev**.

A form section titled "Application Name" with a subtitle "Enter a display name to identify your application in Azure". Below is a text input field containing "Power BI Dev", which is highlighted with a red rectangular border.

*Typically, you define an application name that was represented the app you are developing.*

9. To delegate all available permissions, check the **Select All** checkbox.

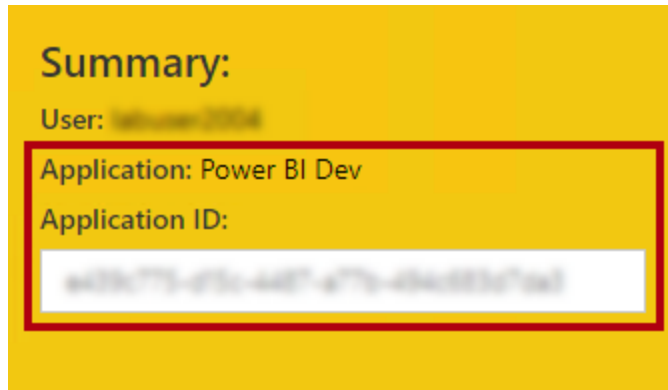
A form section titled "API access" with a subtitle "Select the APIs and the level of access your app needs. You can change these settings later in the .". Below the subtitle is a link "Learn more". At the bottom is a checkbox labeled "Select All", which is checked and highlighted with a yellow square.

*As a best practice, for your application development, only delegate permissions on a needs basis.*

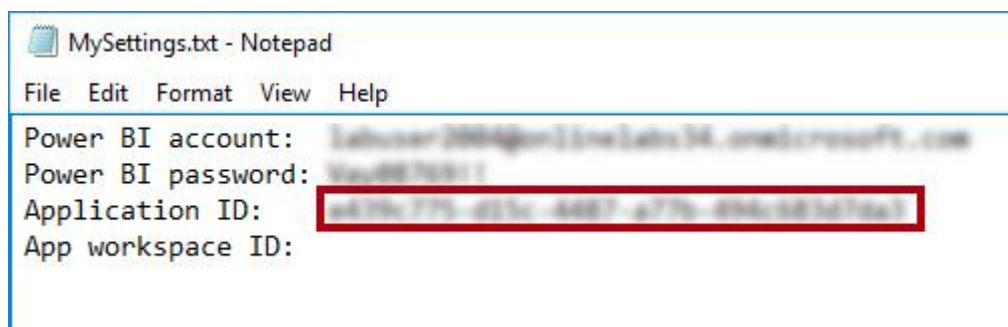
10. Click **Register**.



11. When the app has been registered, in the **Summary** pane, notice the addition of the application details.

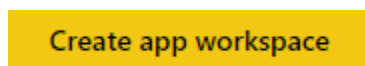


12. Copy the **Application ID** value to the clipboard, and then paste it into the **MySettings.txt** file.

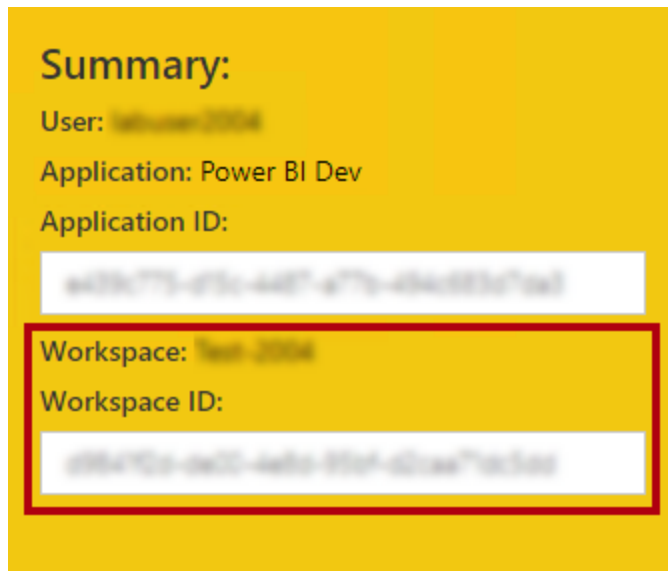


*You will need the **Application ID** when creating an embedded solution in **Lab 02B**.*

13. Save the **MySettings.txt** file.
14. At Step 3, to create an app workspace, in the **Name Your App Workspace**, enter a name (note, it must be unique within the tenant, so consider using your name).
15. Click **Create App Workspace**.

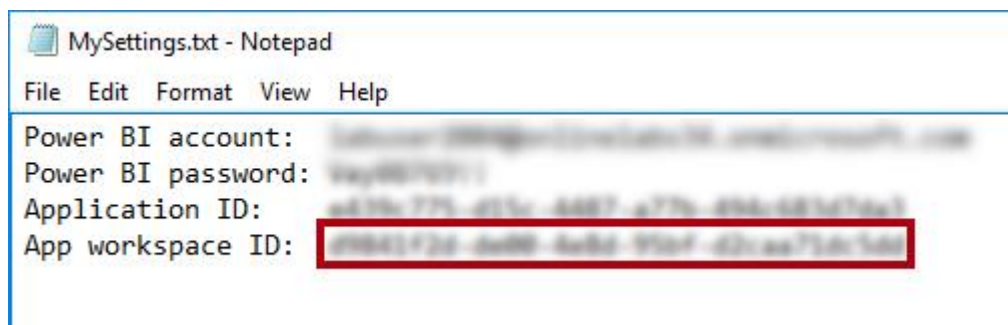


16. When the workspace has been created, in the **Summary** pane, notice the addition of the workspace details.



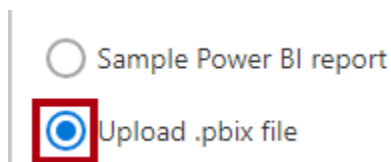
*The account used to sign in will be added as an administrator of the app workspace, and will act as the Master App account.*

17. Copy the **Workspace ID** value to the clipboard, and then paste it into the **MySettings.txt** file.



*You will need the **Workspace ID** when creating an embedded solution in **Lab 02B**.*

18. Save the **MySettings.txt** file.
19. At Step 4, to import content, select the **Upload .PBIX File** option.



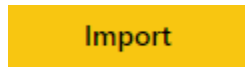
20. Inside the **File** box, at the right, click the **Browse** link.



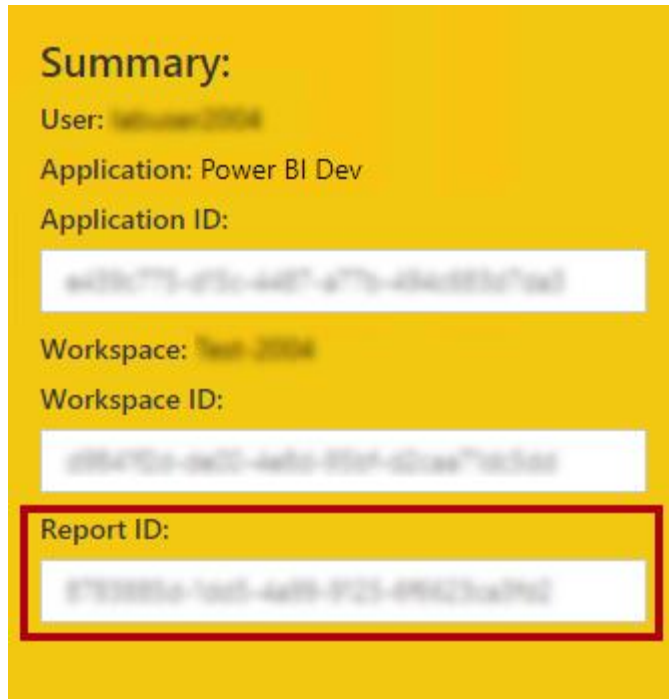
21. In the **Open** window, navigate to the **<CourseFolder>\PowerBIDevIAD\MySolution** folder.
22. Select the **US Sales Analysis.pbix** file, and then click **Open**.

*This is the file you created in **Lab 01A**.*

23. Click **Import**.



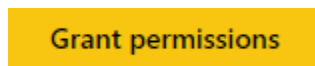
24. When the report has been imported, in the **Summary** pane, notice the addition of the report details.



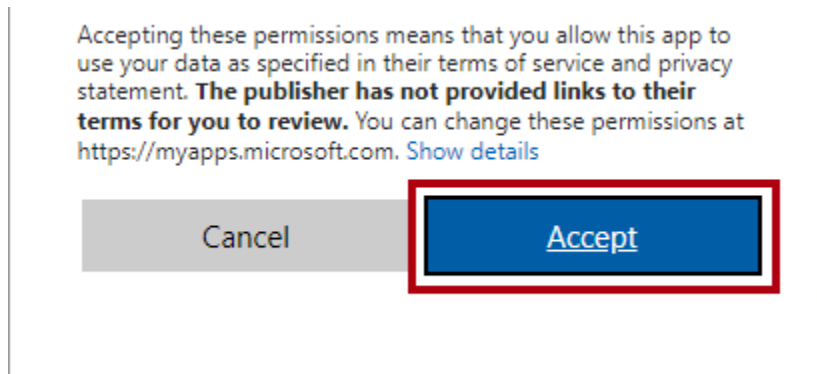
*There is no need to record the **Report ID**. The app you develop in **Lab 02B** will use the Power BI REST API to enumerate reports.*

25. At Step 5, to grant permissions to the Azure AD app, click **Grant Permissions**.

*Granting permissions is required for the Master App account to avoid being prompted for consent by Azure AD.*

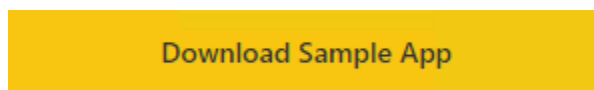


26. In the popout window, review the message, and then click **Accept**.



*You have now completed the workflow.*

27. To download the sample app, click **Download Sample App**.



*A zip file containing sample projects, and with their configuration files updated with your application, workspace and report IDs will be downloaded to your desktop.*

28. Save the zip to your local machine.

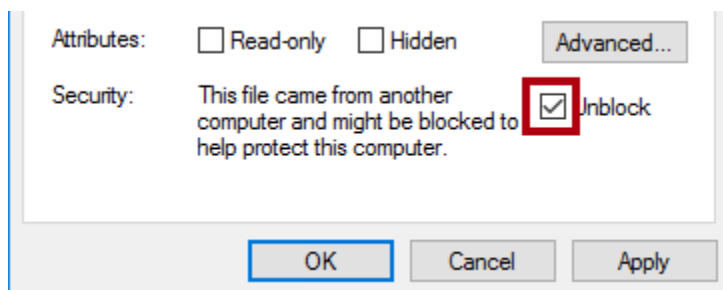
29. Close the Onboarding Embed Tool web tab.

## Exploring the Sample App

In this task, you will extract the downloaded file. You will then open the sample app, review its config file, and then run the app.

1. In File Explorer, open the folder where you saved the zip file.
2. Before unzipping the file, first right-click the zip file, and then select **Properties**.
3. In the **Properties** window, uncheck the **Unblock** checkbox.

*Your operating system may have an **Unblock** button, in which case, click the button.*



4. Click **OK**.
5. Extract the zip file to the **<CourseFolder>\PowerBIDevIAD\MySolution\Sample** folder.

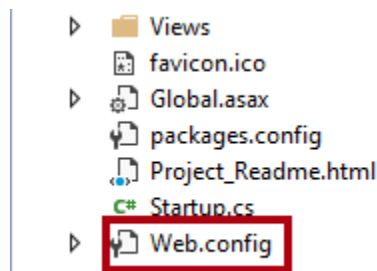


6. Open Visual Studio.

*The lab steps have been written and tested by developing a solution with Visual Studio 2017. The labs will also work in Visual Studio 2015 and Visual Studio Community; however, screenshots and lab instructions may differ slightly.*



7. On the **File** menu, select **Open | Project/Solution**.
8. In the **Open Project** window, navigate to the **<CourseFolder>PowerBIDevIAD\MySolution\Sample\PowerBI-Developer-Samples-master\App Owns Data** folder.
9. Select the **PowerBIEmbedded\_AppOwnsData.sln** file, and then click **Open**.
10. In **Solution Explorer**, open the **Web.config** file.



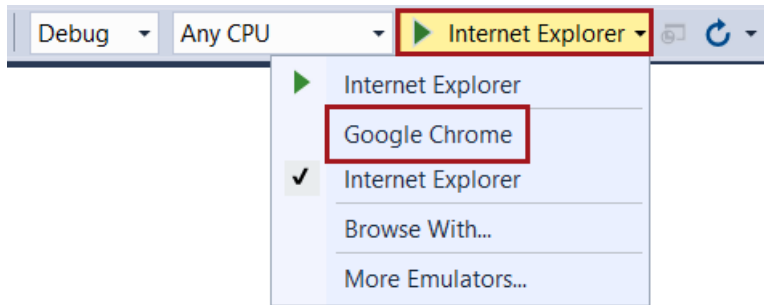
11. If prompted about inconsistent line endings, click **Yes**.
12. Review the **appSettings** section.

```
<appSettings file="">
  <add key="webpages:Version" value="3.0.0.0" />
  <add key="webpages:Enabled" value="false" />
  <add key="ClientValidationEnabled" value="true" />
  <add key="UnobtrusiveJavaScriptEnabled" value="true" />
  <add key="clientId" value="11111111-1111-1111-1111-111111111111" />
  <add key="groupId" value="11111111-1111-1111-1111-111111111111" />
  <add key="reportId" value="11111111-1111-1111-1111-111111111111" />
  <add key="pbiUsername" value="jane.doe@contoso.com" />
  <add key="pbiPassword" value="" />
  <add key="authorityUrl" value="https://login.microsoftonline.com/common/oauth2/authorize" />
  <add key="resourceUrl" value="https://analysis.windows.net/powerbi/api" />
  <add key="apiUrl" value="https://api.powerbi.com" />
  <add key="embedUrlBase" value="https://app.powerbi.com" />
</appSettings>
```

- Copy the **Power BI Password** value from **MySettings.txt** file into the value of the **pbiPassword** key.

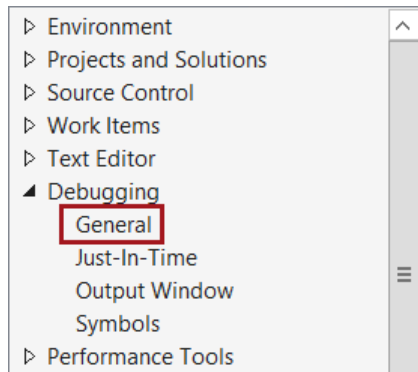
```
<add key="pbiPassword" value="My0076911" />
```

- On the **File** menu, select **Save Web.config**.
- On the **File** menu, select **Close**.
- To start the web application, on the toolbar, first ensure that the web browser is set to **Google Chrome**.

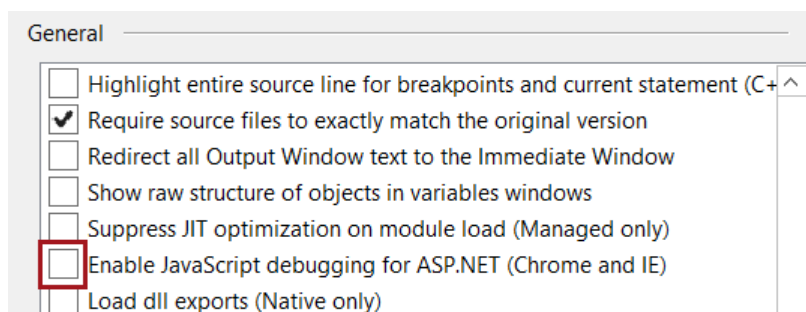


*For Visual Studio 2017, you may need to first disable JavaScript debugging for ASP.NET, in which case complete the following four steps.*

- On the **Tools** menu, select **Options**.
- In the **Options** window, in the left pane, expand **Debugging**, and then select **General**.



- If checked, uncheck the **Enable JavaScript Debugging for ASP.NET** option.

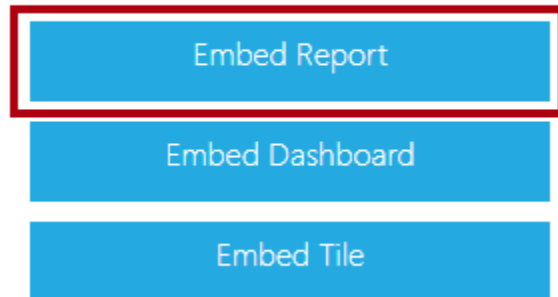


20. Click **OK**.
21. On the toolbar, start the web application (start debugging).

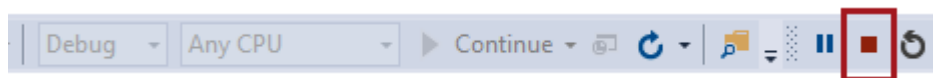


22. When the web page opens, click **Embed Report**.

Select an entity to embed.



23. Review and interact with the embedded report.
24. In the web browser, close the web app session.
25. In Visual Studio, stop debugging.



26. To close Visual Studio, on the **File** menu, select **Exit**.

*The sample app provides a fast track approach to embedding. You will, however, develop an embedding solution from scratch in **Lab 02B** to help you more fully understand the development methodologies and requirements to achieve embedding.*

*Before commencing the development of this solution, you will need additional Power BI content that you will create in the next exercise.*

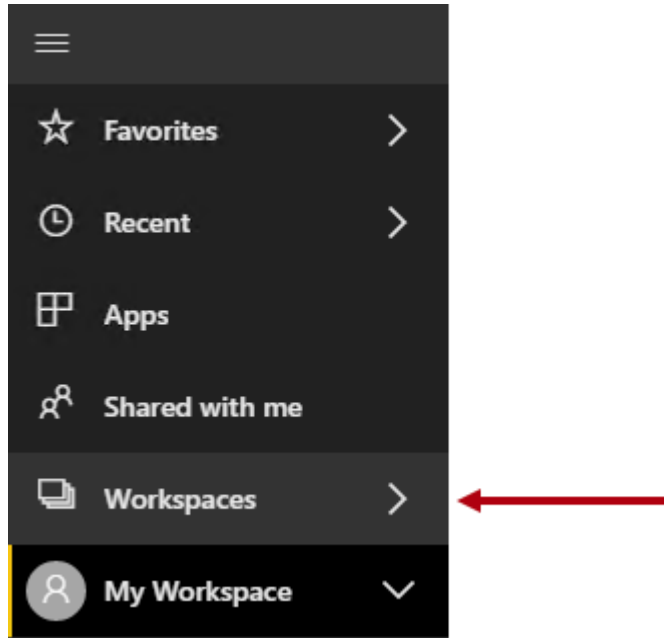
# Creating Additional Content

In this exercise, you will first review the app workspace created by the Onboarding Embed Tool. You will then create a report and a dashboard, and also explore working with Q&A.

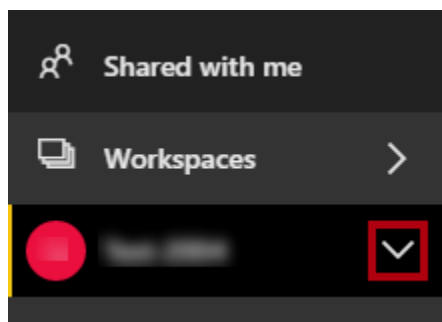
## Reviewing the App Workspace

In this task, you will review the published content in the Power BI portal.

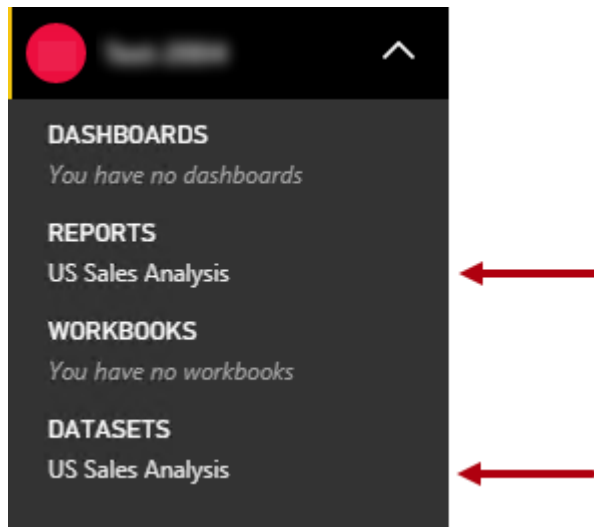
1. In the Power BI portal (Google Chrome), press F5 to reload the browser session.
2. In the **Navigation Pane** (located at the left), open **Workspaces**.



3. Select the workspace you created in the previous exercise.
4. In the **Navigation Pane**, expand the workspace.

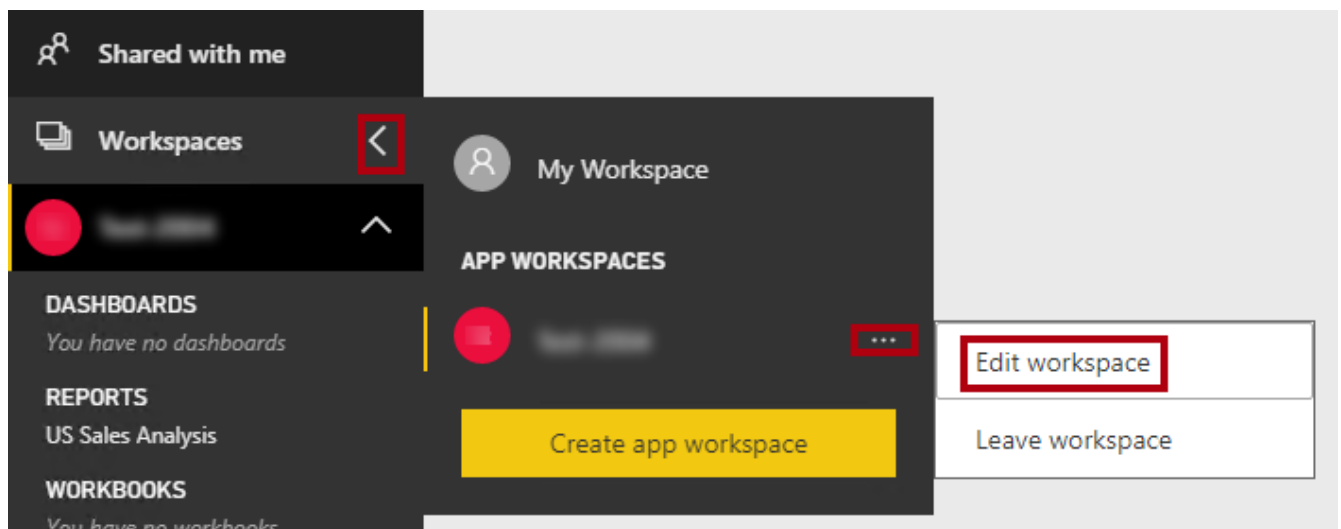


5. Verify that the workspace contains the **US Sales Analysis** report, and **US Sales Analysis** dataset.

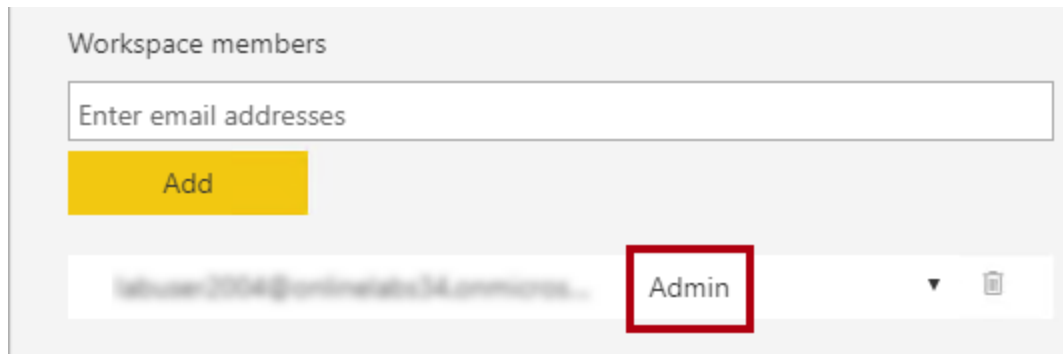


Both objects were added to the workspace when the **US Sales Analysis.pbix** file was uploaded. The datasets represents the data model, and the report is an interactive visualization experience that connects to the data model.

6. To review the app workspace, in the **Navigation Pane**, open **Workspaces**, and then at the right of the app workspace, click the ellipsis, and select **Edit Workspace**.



7. In the **Edit Workspace** pane (located at the right), notice that your user account is listed as as admin member.



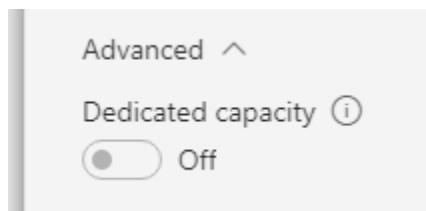
*To embed content on behalf of non-Power BI users, a Master App account is to used to authenticate with the service. It must be an admin member of an app workspace.*

*In this lab, the Onboarding Embed Tool has added your Power BI account as an admin member, and it will be uased as the Master App account. Typically, it is a better practice to use a dedicated domain account.*

8. In the **Edit Workspace** pane, expand the **Advanced** section.



9. Noitce the Dedicated Capacity setting, which is disabled.



*To embed content on behalf of non-Power BI users, the app workspace must be assigned on a dedicated capacity. However, it is possible to generate a limited number of embed tokens when the account has the **Power BI Pro Trial** license. In this lab, you will rely on this free capability, rather than provision a **Power BI Premium** license, or **Azure Power BI Embedded** resource.*

10. In the **Edit Workspace** pane, click **Cancel**.

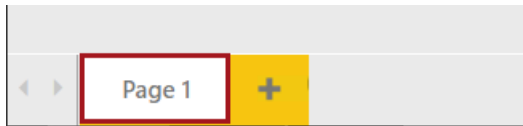
## Creating a Report

In this task, you will create a Power BI report.

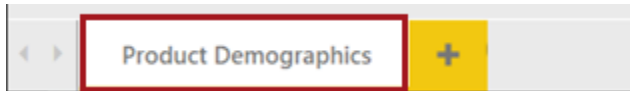
1. To create a report, in the **Navigation Pane**, click the **US Sales Analysis** dataset.
2. Notice that a blank report canvas appears, enabling the design of a new report.

*The report design experience is almost identical to the Power BI Desktop report design experience.*

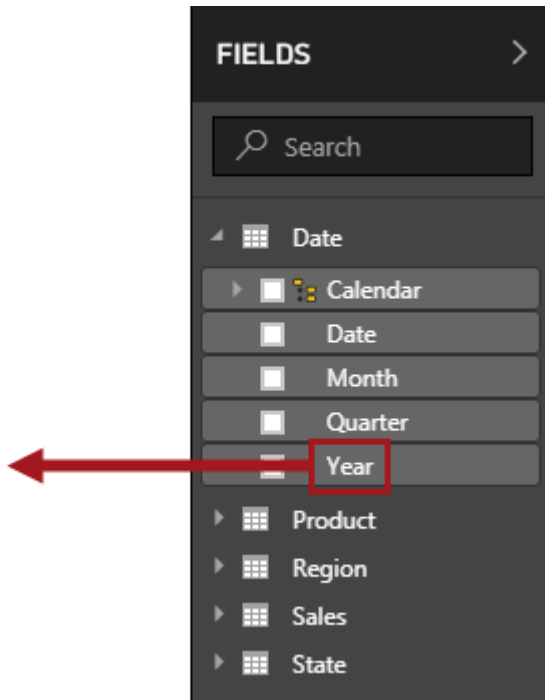
3. To rename the report page, at the bottom-left corner, double-click **Page 1**.



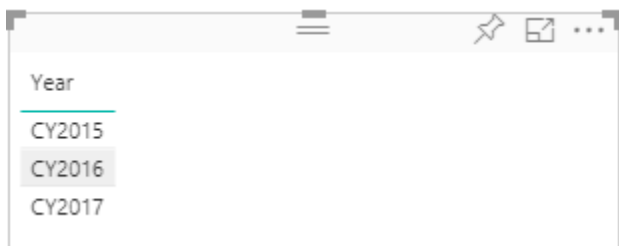
4. Replace the text with **Product Demographics**, and then press **Enter**.



5. In the **Fields** pane, expand the **Date** table, and then drag the **Year** field to the report canvas.

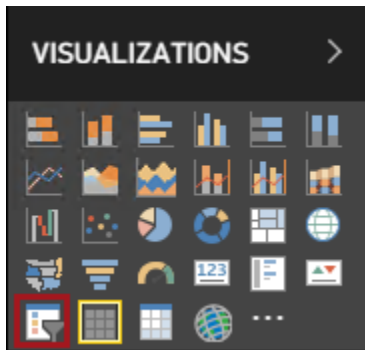


6. Notice that this action resulted in the creation of a table visualization.

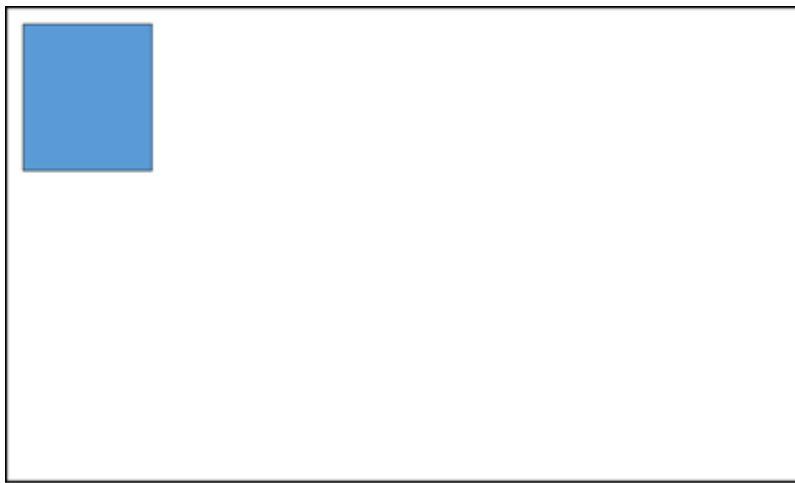


7. To modify the visualization to a slicer, in the **Visualizations** pane, select the **Slicer** icon.

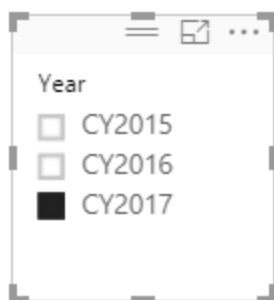
*Tip: Hovering over a visualization type icon will reveal a tooltip that describes the visualization type.*



8. Resize the slicer, and then reposition it as follows.

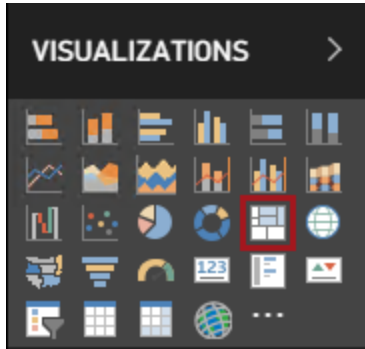


9. In the **Year** slicer, select **CY2017**.

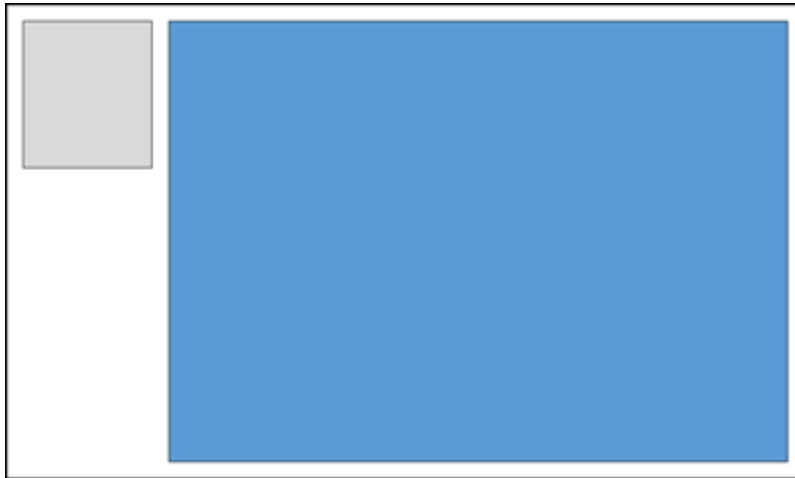




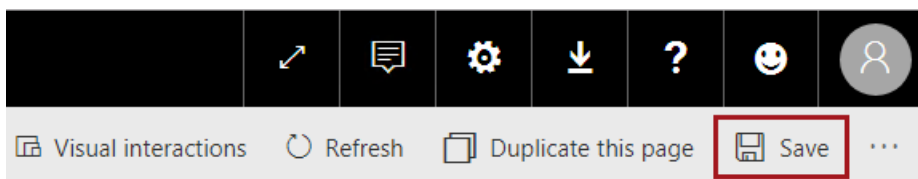
10. To add a second visual, first click a blank area of the report canvas.
11. In the **Visualizations** pane, click the **Treemap** visualization.



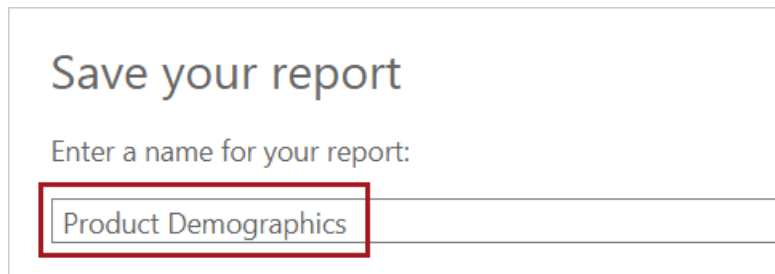
12. Resize the treemap, and then reposition it as follows.



13. In the **Fields** pane, expand the **Product** table.
14. Drag the **Demographic** field into the treemap visual.
15. From the **Sales** table, drag the **Sales** field into the treemap visual.
16. Expand the **Region** table, and then drag the **Region** field into the **Report Level Filters** drop zone.
17. To save the report, at the top-right corner, click **Save**.



18. In the **Save Your Report** window, in the box, enter **Product Demographics**.



19. Click **Save**.

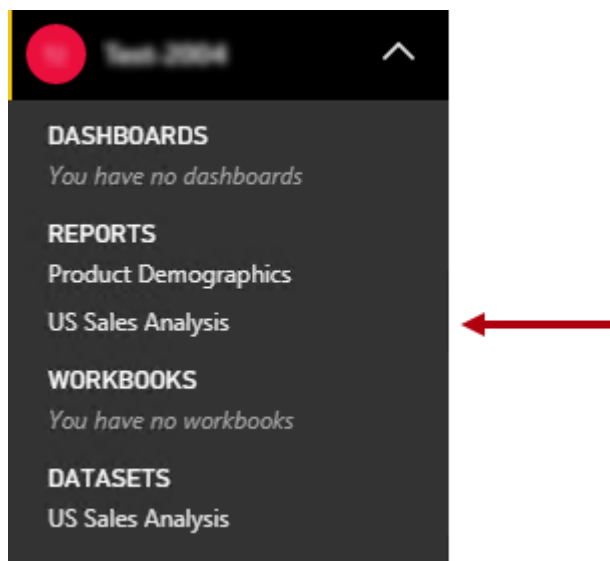
*You will embed this report into a web app in **Lab 02B**.*

## Creating a Dashboard

In this task, you will create a Power BI dashboard by pinning visuals from two reports.

*Unlike reports, dashboards cannot be explicitly saved. Each change you make to a dashboard is automatically saved.*

1. To create a dashboard, in the **Navigation Pane**, select the **US Sales Analysis** report.



2. In the report, hover the cursor over the Tailspin Toys logo, and then click the **Pin Visual** icon.



3. In the **Pin to Dashboard** dialog window, notice that the **New Dashboard** option is selected.
4. In the box, enter **US Sales Monitoring**.



Pin to dashboard

Select an existing dashboard or create a new one.

Where would you like to pin to?

☐ Existing dashboard

☒ New dashboard

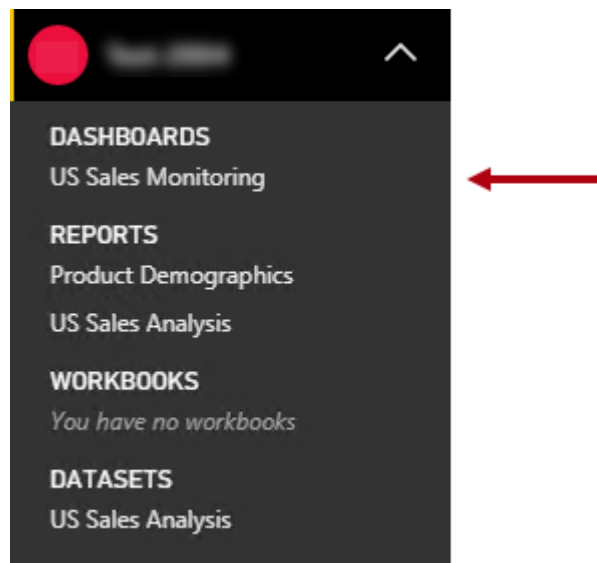
US Sales Monitoring

5. Click **Pin**.



Pin Cancel

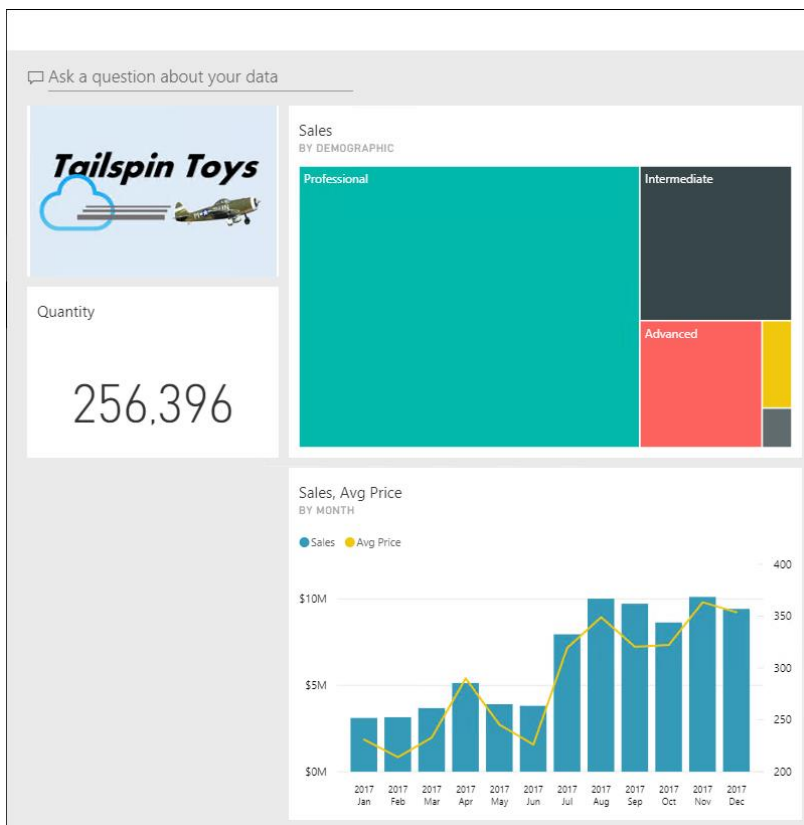
6. Also pin the following two visuals to the dashboard:
  - Quantity card
  - Sales and Avg Price by Month combo chart
7. In the **Navigation Pane**, select the **Product Demographics** report.
8. Pin the treemap to the dashboard.
9. In the **Navigation Pane**, select the **US Sales Analysis** dashboard.



10. To resize the logo tile, hover over the tile, and then drag the bottom-right corner to resize to 1 x 1.



11. Drag the tiles to reposition them as follows.

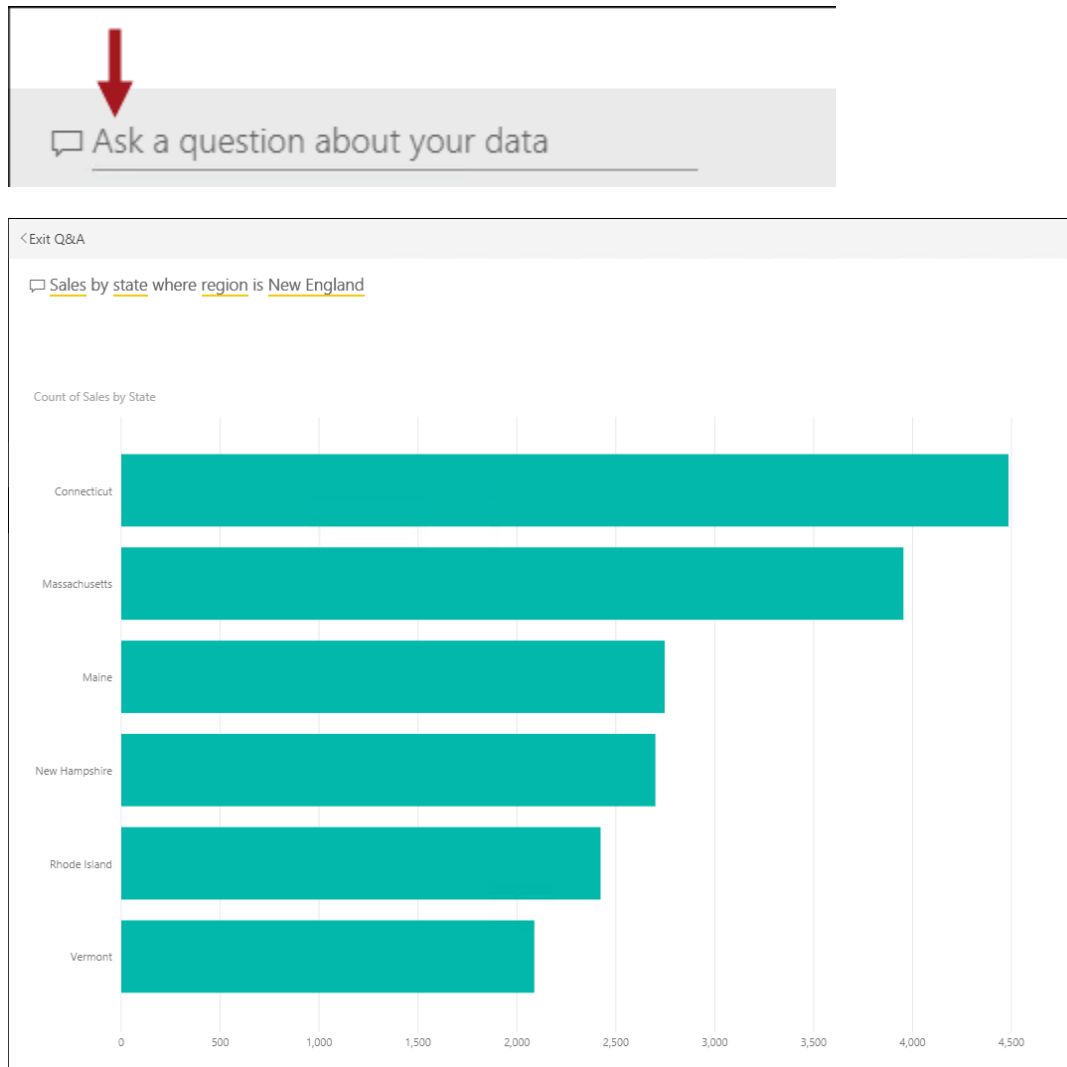


You will embed this dashboard into a web app in **Lab 02B**.

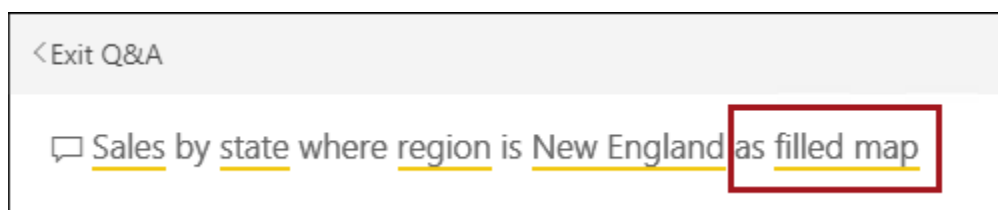
## Exploring Q&A

In this task, you will explore working with Q&A.

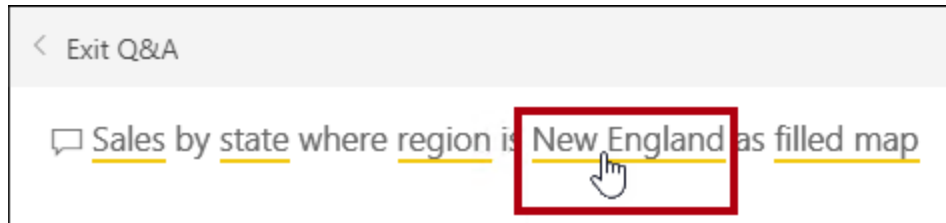
1. At the top-left corner of the dashboard, in the Q&A box, enter the following question:  
**Sales by state where region is New England.**



2. Modify the question by appending the words **as filled map**.



3. To change the region filter, click on **New England**, and then from the suggestion list, select **Midwest**.



4. To exit the Q&A experience, at the top-left corner, click **Exit Q&A**.



*You will embed the Q&A experience into a web app in **Lab 02B**.*

# Summary

In this lab, you used the Onboarding Embed Tool to embed a report into a sample application. You then reviewed the app workspace created by the tool, created a report and a dashboard, and also explored working with Q&A.

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# Document Version

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