Lab 2: Business Analytics with Power BI

Introduction

In this lab, you will create a Microsoft Power BI dashboard to report on the US sales activities. This will involve uploading the **US Sales Analysis.pbix** file created with Power BI Desktop.

Estimated time to complete this lab

1 hour (depends on experience)

Objectives

After completing this lab, you will be able to:

- Sign in to Power BI.
- Create a dataset by uploading a Power BI Desktop file.
- Assemble a dashboard consisting of tiles.
- Use the Q&A questions to create dashboard tiles.
- Use the existing report visualizations to create dashboard tiles.
- Use the new report visualizations to create dashboard tiles.

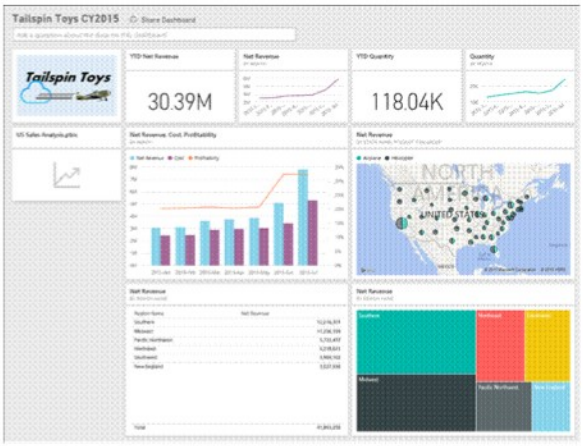
Resources

VM Name	Business Analytics with Power BI - Module 1
Domain	POWERBI-WIN10
User	POWERBI-WIN10\LabUser
Password	P@ssw0rd1!
Lab Files	E:\Labs\

Contents

Lab: Power BI Service

The final dashboard will look similar to the following screenshot.



Exercise 1: Signing-in to Power BI

In this task, you will sign in to Power BI, or sign-up for the service if you have not done so in the past. Note that you only need to sign up once, for a particular email account.

- Sign in or sign up to Power BI

Task 1: Signing in to Power BI

1. To open Microsoft Internet Explorer, on the taskbar, right-click the **Microsoft Edge (Internet Explorer)** program shortcut.

2. In Internet Explorer, navigate to http://powerbi.com.

3. Click **Sign In** (located at the top right corner).

4. Enter your email address and password, and then select the **Keep Me Signed In** check box.

5. Click **Sign In**.

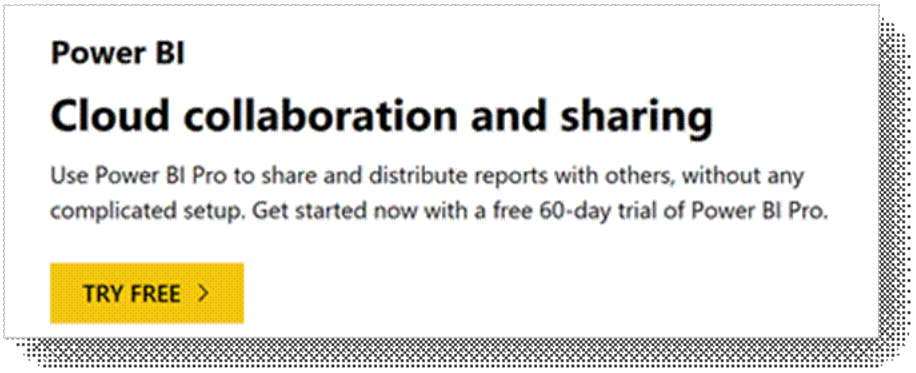
6. Leave the Internet Explorer window open.

Task 2: Creating a Power BI Account

In this task, you will sign up for Power BI.

Note: Do not complete this task if you have already registered and signed in to Power BI, before.

1. To open Internet Explorer, on the taskbar, click the **Internet Explorer** program shortcut.
2. In Internet Explorer, navigate to https://powerbi.microsoft.com/en-us/get-started/ .
3. Scroll down and select the option TRY FREE:



Note: Certain circumstances may prevent you from signing up for a Power BI account. If you cannot sign up, in Internet Explorer, navigate to Self-Service Signup for Power BI and use a workaround appropriate to your circumstances.

4. Insert your organizational e-mail and press Enter
5. When prompted, to complete the sign up and to agree to the terms and conditions, click **Continue**.

6. When prompted, click **Start**.

   Note: The account may take up to five minutes to be created. When the account has been created, you will be directed to the Microsoft Power BI site.

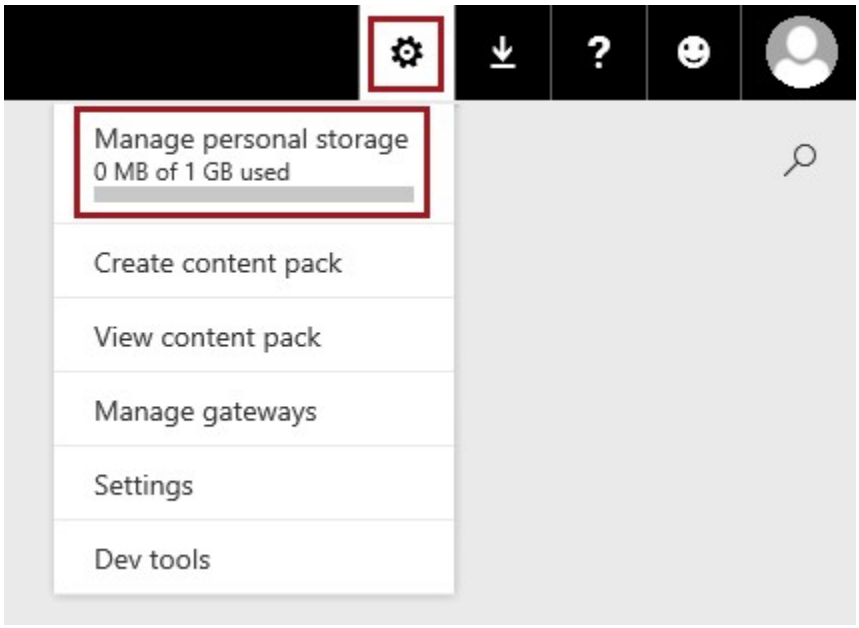
7. When the **Microsoft Power BI** site page loads, in the **Welcome** dialog box, click **Get Started**.

8. Leave the Internet Explorer window open.

Task 3: Upgrade your account

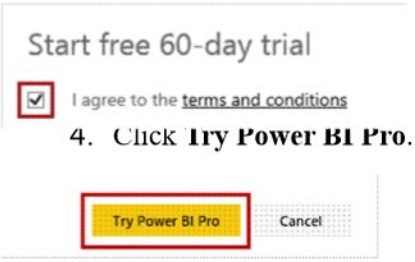
1. 1. To upgrade the trial account to the **Power BI Pro** trial license, at the top right corner, click the **Settings** command (cog), and then select **Manage Personal Storage**.

You only need to do this if you see 1GB available. If you see 10 GB, you already have a Pro license.



2. At the top right corner, click **Try Pro for Free. NOTE: You do not need PRO features to complete the lab**.

3. In the dialog box, if you agree to the terms, select the check box.



4. Click **Try Power BI Pro**.

5. When the trial extension has been confirmed, click **Close**.

6. To navigate to your workspace, click the Power BI banner on the top-right.

7. Leave the Internet Explorer window open.

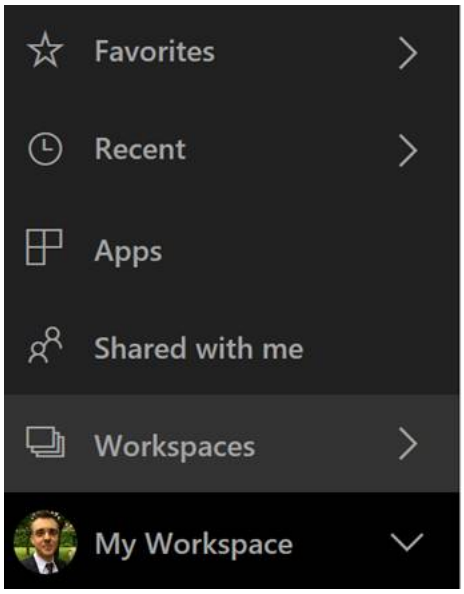
Exercise 2: Exploring the Power BI dashboard interface

In this exercise, you will explore the Power BI dashboard interface, create a dashboard, and then upload a dataset and report by connect to the **US Sales Analysis** Power BI Desktop file. You will also define a featured question for the dataset.

Task 1: Exploring the Navigation Pane

In this task, you will explore the workspace with the **Navigation Pane**.

1. In the Internet Explorer window, in your workspace, notice the **Navigation Pane** (located at the left).



*The **Navigation Pane** can be used to move between the Power BI building blocks, consisting of Dashboards, Reports, and Datasets.*

*A **Dashboard** is a single canvas that contains one or more tiles, and each tile displays a single visualization that was created from the data in the underlying datasets. Dashboards can be shared with other users.*

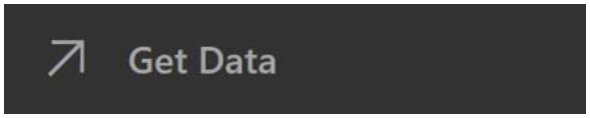
*A **Report** consists of one or more pages of visualizations (charts, graphics, and more.). Reports can be created from scratch or can be imported with datasets.*

*A **Dataset** is a resource that can be connected to, and that is used to create reports*

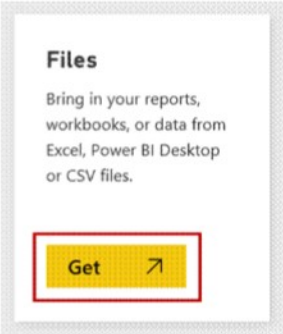
Task 2: Connecting to a Power BI Desktop File

In this task, you will upload a Power BI Desktop file. ~

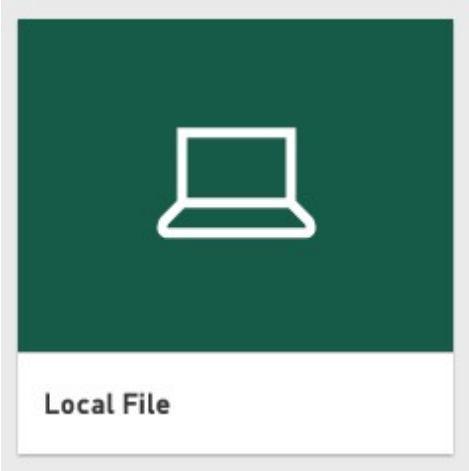
1. In the **Navigation Pane**, click **Get Data** (located at the bottom of the pane).



2. In the **Get Data** page, inside the **Files** tile, click **Get**.



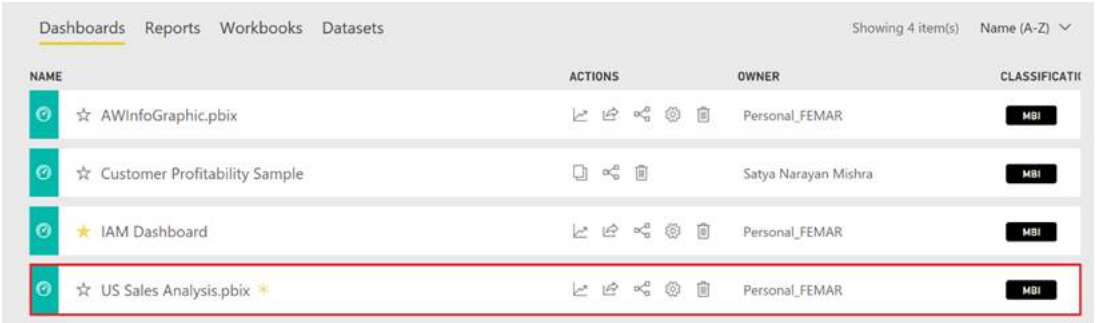
3. Click the **Local File** tile.

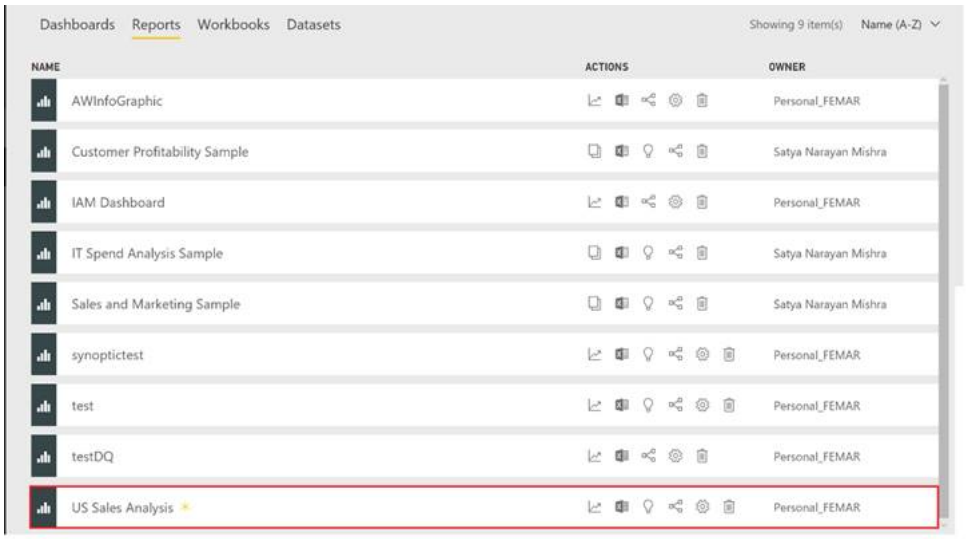


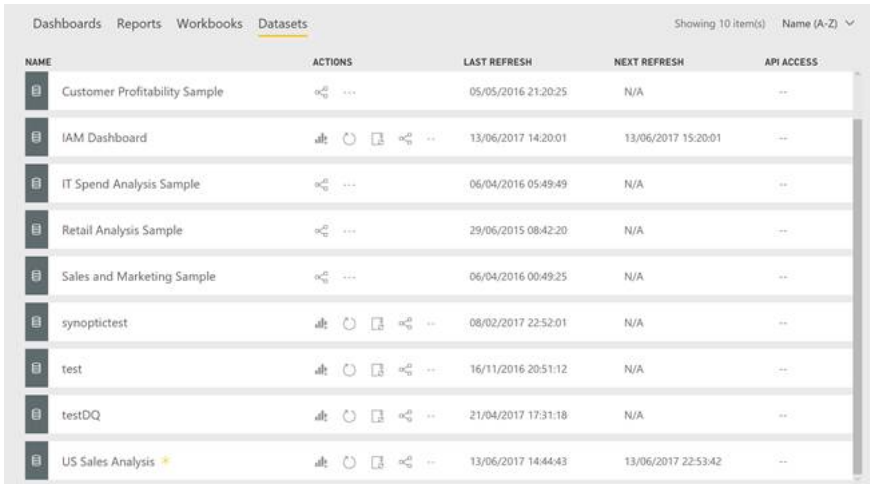
4. In the **Choose File to Upload** window, navigate to the **E:\Labs\Lab 1** folder.
5. Select the **US Sales Analysis.pbix** file, and then click **Open**.

   This is the Power BI Desktop file that was created in lab 1.

6. When the file has uploaded, in the **Navigation Pane,** on the center of the screen, notice the addition of the **US Sales Analysis** dashboard, report and dataset.

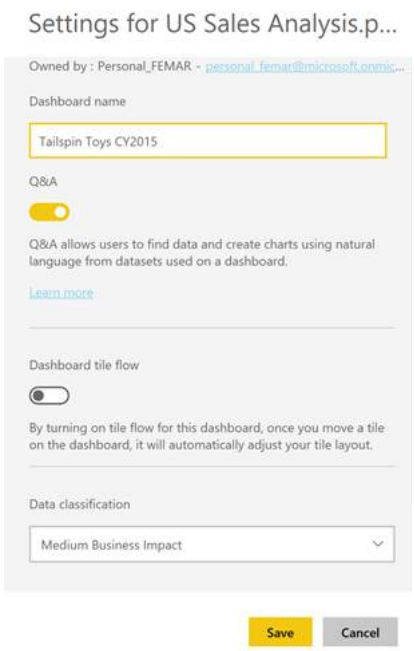






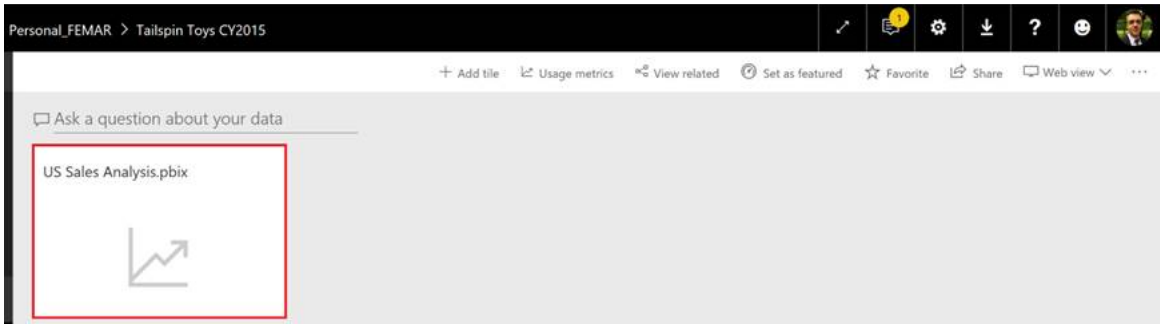
The Power BI Desktop file contains both a model and a report. In Power BI, the model is now expressed as a dataset.

7. In the dashboard "US Sales Analysis.pbix" click the settings option to change its name to **Tailspin Toys CY2015**:



Click **Save** to complete the operation.

8. Next, open the dashboard, by clicking its name and notice the **US Sales Analysis.pbix** tile.

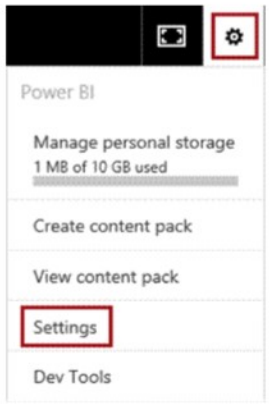


The tile defines a relationship between the dashboard and the dataset, and will be the resource queried when asking Q&A questions. Additionally, clicking the tile can quickly enable browsing the report based on the dataset.

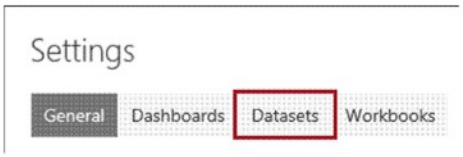
Task 3: Creating a Featured Question

In this task, you will create a featured question to assist users when using Q&A with the **US Sales Analysis** dataset.

1. At the top-right corner, click the **Settings** command (cog), and then select **Settings**.

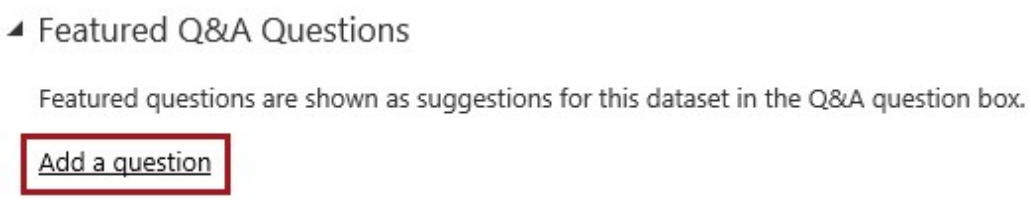


2. Select the **Datasets** tab.

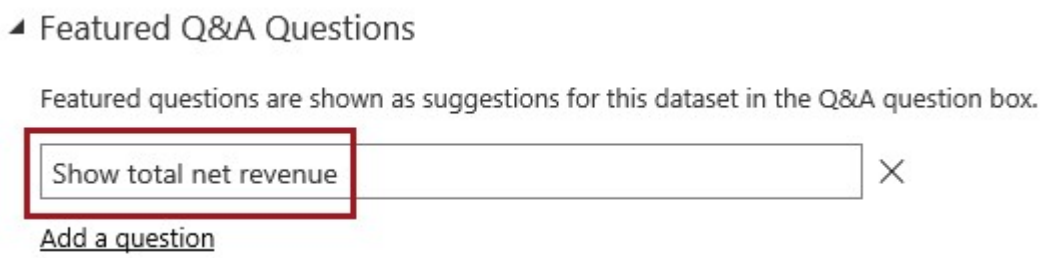


3. Ensure that the **US Sales Analysis** dataset is selected.

4. Expand **Featured Q&A Questions**.
5. Click the **Add a Question** link.



6. In the box, enter **Show total net revenue**.



7. Click **Apply**.
8. Reload the web page by pressing F5. Ignore any errors that might appear related to the gateway and data source credentials.

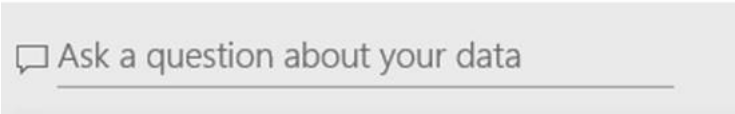
Exercise 3: Assembling a Power BI Dashboard

In this exercise, you will assemble a dashboard by creating tiles sourced from Q&A questions, and from new and existing report visualizations.

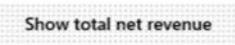
Task 1: Creating Dashboard Tiles from Q&A Responses

In this task, you will create dashboard tiles by using Q&A.

1. In the **Navigation Pane**, select the **Tailspin Toys CY2015** dashboard.
2. Click the **Q&A** box (Ask a question about your data).

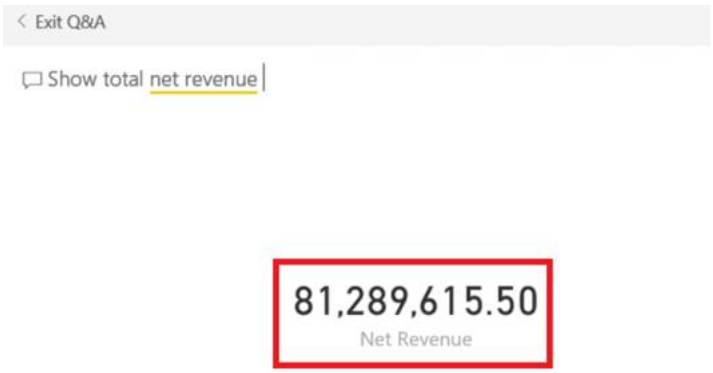


3. Select the **Show total net revenue** suggestion.



Featured questions not only provide suggestions, but can also fast track entering common questions.

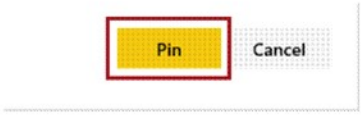
4. Review the Q&A response.



5. Beneath the response, notice the data source, which is the **US Sales Analysis** dataset.

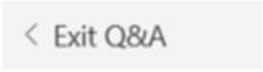
6. In the Q&A box, modify the question to **Show total net revenue where year is CY2015**.
7. Verify that the value updates to **30,388,941**.
8. To create a dashboard tile for this question, to the right of the Q&A box, click the **Pin Visual** icon on the top-right corner:

9. In the **Pin to Dashboard** dialog window, notice the ability to pin the visual to a new or existing dashboard, and then click **Pin** to add a tile to the existing dashboard.

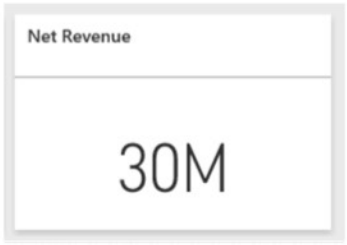


In this lab, you will work with a single dashboard.

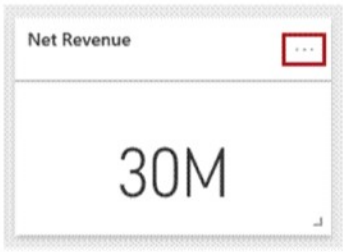
10. To return to the dashboard page, click the back arrow.



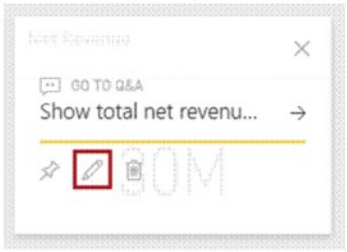
11. On the dashboard page, notice the **Net Revenue** tile.



12. To modify the tile title, hover the cursor over the tile, and then click the ellipsis when it appears.



13. Click the **Edit Tile** icon.

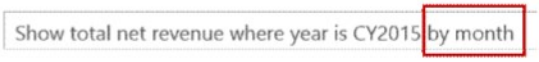


14. In the **Tile Details** pane (located at the right), in the **Title** box, modify the text to **YTD Net Revenue**.

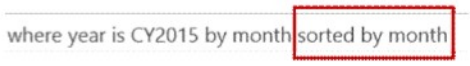
15. Click **Apply**.

16. Verify that the title of the tile has updated.

17. To return to the source question for the tile, simply click the tile.
18. To produce a variation of the question, in the Q&A box, modify the question as follows.



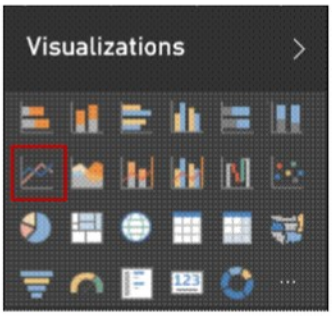
19. In the bar chart response, notice that the months are sorted in descending net revenue order.
20. To sort by month, modify the question as follows.



21. To further customize the response, expand the **Visualizations** pane (located at the right).

22. To change the visualization type, select **Line Chart**.

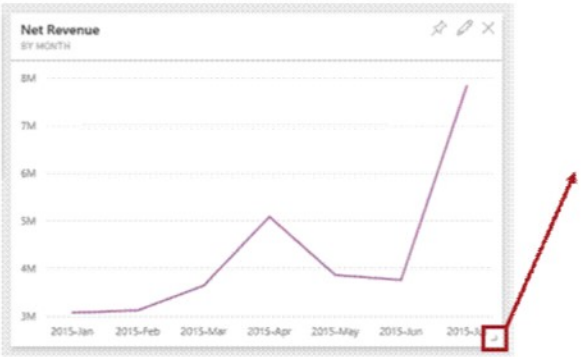
    Tip: Hovering over a visualization type icon will reveal a tooltip that describes the visualization type.



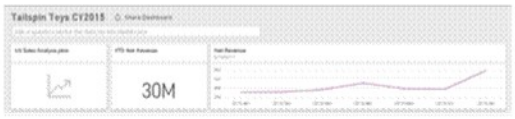
23. To modify the chart format, switch to the Format view.

24. Expand the **Data Colors** section, and then in the **Net Revenue** dropdown list, select **Purple**.

25. Pin the visualization to the existing dashboard, and then return to the dashboard.
26. To resize the new tile, hover the cursor over the tile, and then drag the bottom-right corner toward the top-left corner, and then release when the tile size matches the height of the other tiles, and is also three times wider than them (that is 1x3).



27. Verify that the dashboard layout looks similar to the following screenshot.



Task 2: Creating Dashboard Tiles from Existing Visualizations

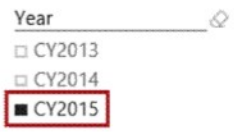
In this task, you will create dashboard tiles by using existing visualizations from the US Sales Analysis report.

1. 1. In the dashboard, click the **US Sales Analysis.pbix** tile.

The report consists of two pages, and was created in Power BI Desktop.

2. Go to the US Sales page. Hover the cursor over the Tailspin Toys logo, and then click the **Pin Visual** icon.

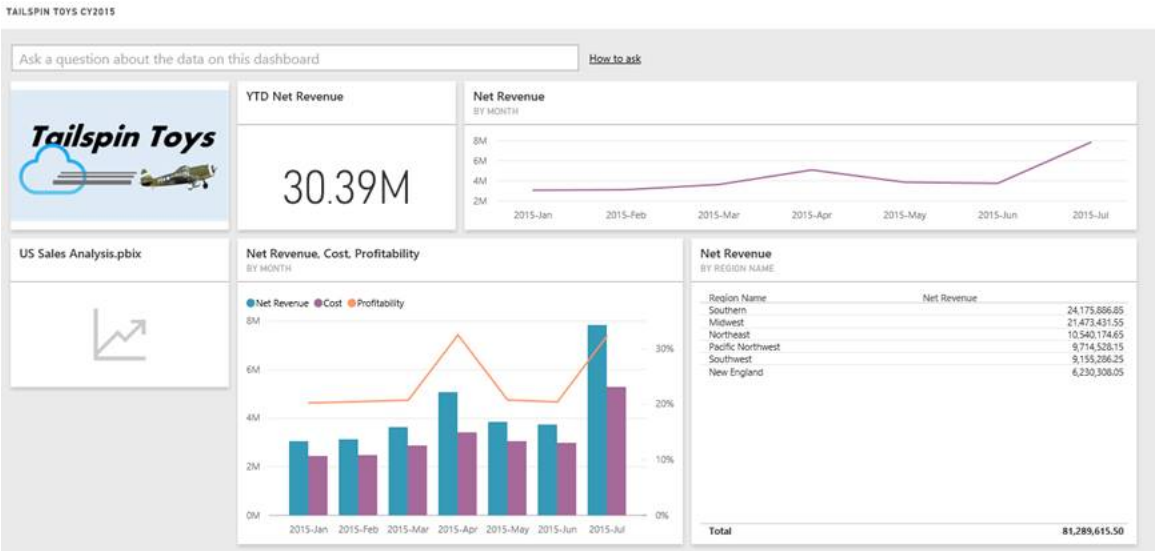
3. In the **Pin to Dashboard** dialog window, click **Pin to Existing Dashboard**.
4. In the **Year** slicer (located at the left), ensure that the report page is filtered only by **CY2015**.



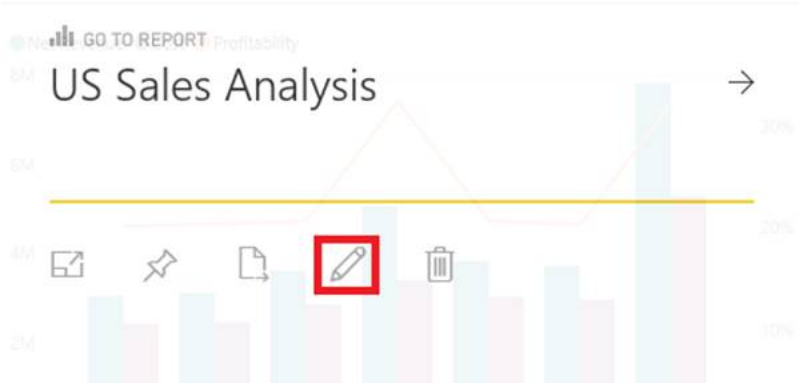
5. To zoom into the **Net Revenue, Cost and Profitability by Month** visualization, hover the cursor over the chart, and then click the **Pop Out** icon.

6. Pin the **Net Revenue, Cost and Profitability by Month** visualization (combo chart) to the dashboard.
7. To revert the chart to normal size, click the **Back to Report** option.

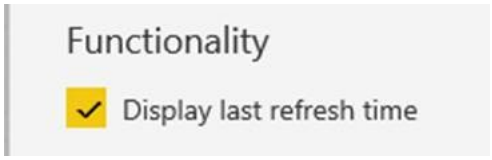
8. Pin also the first table, located on the left, to the dashboard.
9. To return to the dashboard, in the **Navigation Pane**, select the **Tailspin Toys CY2015** dashboard.
10. In the dashboard page, resize the Tailspin Toys logo tile to the smallest possible size (that is 1x1).
11. Reposition the tiles to produce the following dashboard layout.



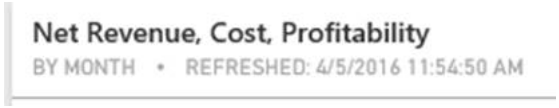
12. Click the ellipsis for the **Net Revenue, Cost, Profitability** tile, and then click the **Edit** icon.



13. Set the **Display last refresh time** functionality.



14. Click **Apply**.
15. Observe the last refresh time information, which indicates the last time the dataset that is providing data to this visualization, was refreshed.



Task 3: Creating a Report Page

In this task, you will create a report page consisting of new visualizations that you will also pin to the dashboard.

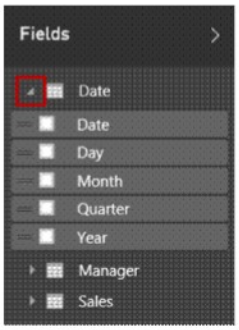
1. 1. To add a new page to the report, navigate to the report again by clicking the **US Sales Analysis.pbix** tile.

   In this task, there is no need to enable custom visuals.
2. To edit the report, on the report menu, at the top, click **Edit Report**.

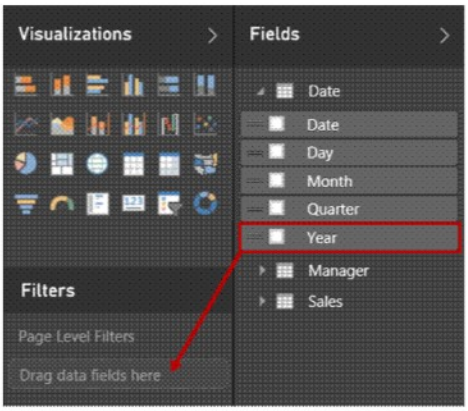
3. To insert a new report page, at the bottom-left corner, click **Add Page (+)**.

4. To name the page, double-click **Page 1**.
5. Replace the text with **Additional Dashboard Visuals**, and then press Enter.

6. To filter the report page, in the **Fields** pane, expand the **Date** table.



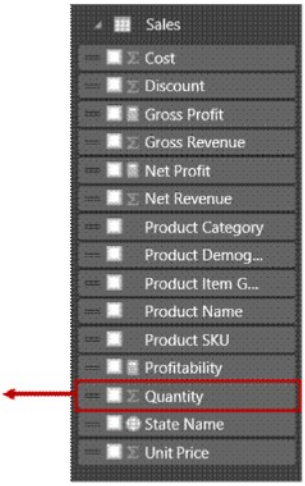
7. From inside the **Date** table, drag the **Year** field, and drop it into the **Page Level Filters** well.



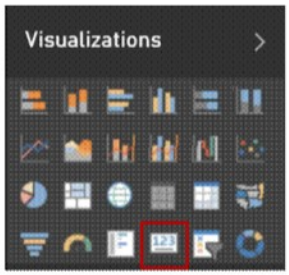
8. Select the **CY2015** check box.

*All data expressed on the report page will now be filtered by **CY2015**.*

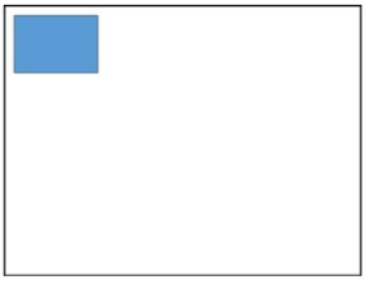
9. In the **Fields** pane, expand the **Sales** table, and then drag the **Quantity** field and drop it at the top-left corner of the canvas.



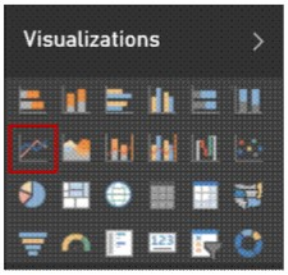
10. Change the visualization type to **Card**.



11. Resize and reposition the visualization as follows.

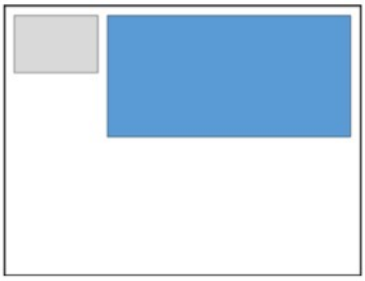


12. To create a new visualization, drag the **Sales | Quantity** field and drop it at the right of the card visualization.
13. Drag the **Date | Month** field and drop it inside the new visualization.
14. Change the visualization to **Line Chart**.

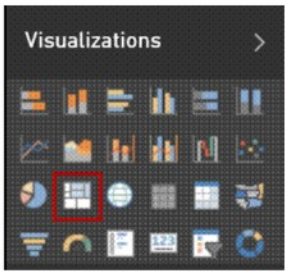


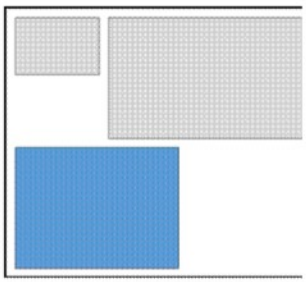
15. To modify the sort order, click the ellipsis located at the top right corner, click the **Sort By** down arrow, and then select **Month**.
16. To sort by month ascending, click the ellipsis again, and then click the **AZ** icon.

17. Resize and reposition the visualization as follows.

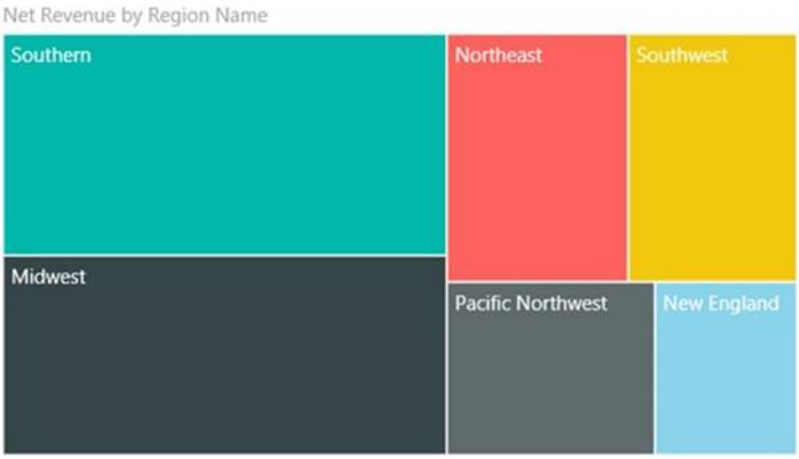


18. Create a treemap visualization by using the **Manager | Region Name** and the **Sales | Net Revenue** fields, and the resize and reposition the visualization as follows.



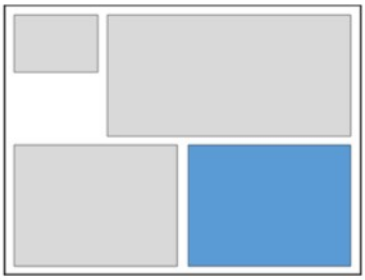


19. Verify that the visualization looks similar to the following screenshot.

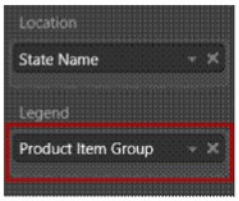


20. Create a map visualization by using the **Sales | State Name** and the **Sales | Net Revenue** fields, and then resize and reposition the visualization as follows.

    *There is no need to change the visualization type because map is the default type used when a spatial field such as **State Name** is used.*

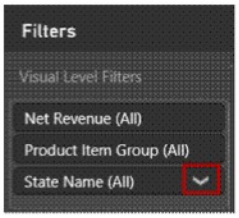


21. To display pie charts, drag the **Product | Product Item Group** field and drop it inside the **Legend** well.



22. Notice the addition of a legend.

23. To display only the contiguous US states, in the **Filters** section (in the **Visualizations** pane, you might need to scroll down to locate the section), click **State Name (All)** to expand the filter list.



24. Check **(All)**, and then clear the **Alaska** and **Hawaii** check boxes.
25. If necessary, use the mouse wheel to adjust the zoom to fill the available visual space.
26. Verify that the visualization looks similar to the following screenshot.

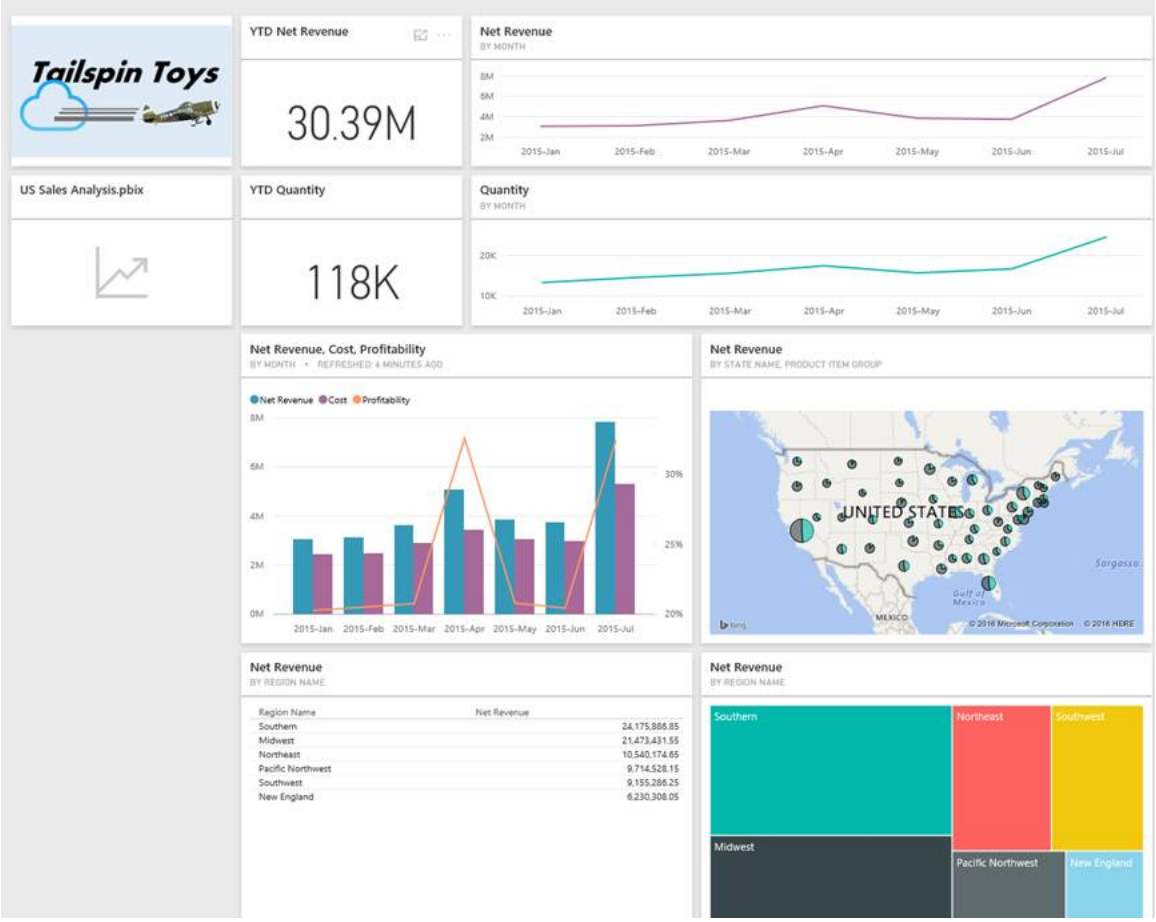
27. To save the report, at the right corner, click **File**, and then select **Save**.

28. Pin each of the four visualizations to the dashboard.

Task 4: Completing the Dashboard Layout

In this task, you will finalize the dashboard layout.

1. 1 Switch to the dashboard.
2. Modify the **Quantity** tile title to **YTD Quantity**.
3. Click the **YTD Quantity** title, and notice that it navigates to the source report page.
4. Return to the dashboard.
5. Resize the **Quantity BY MONTH** tile to a size 1x3 (similar to the **Net Revenue BY MONTH** tile).
6. Reposition the tiles to produce the following dashboard layout.



The dashboard enables viewing data with a variety of different visualization types in a single pane of glass. Users can interact by entering new questions in the Q&A box, or by clicking on any tile to drill through to the tile source, which can be either a Q&A question, or a visualization saved within a report. Finally, dashboard pages can be shared with other registered Power BI users.

Task 5: Exploring the Dashboard View

In this task, you will explore dashboard full screen mode.

1. 1. To view the dashboard in full screen mode, click **Enter Full Screen Mode**.

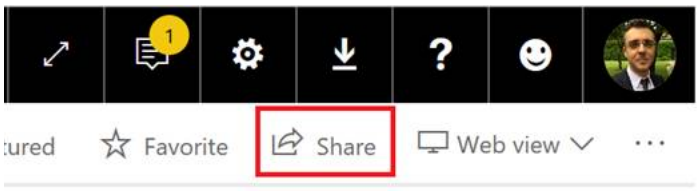
2. If all tiles are still not visible, move the cursor toward the bottom-right corner, and when the pane appears, click **Fit to Screen**.

3. To exit the full screen mode, click **Exit Full Screen Mode**.

Task 6: Sharing the Dashboard

In this task, you will explore how to share the dashboard. This step does require a PRO license or TRIAL.

1. 1. At the right of the dashboard title, click **Share**.



2. In the **Share Dashboard** page, notice that, as the dashboard owner, you can manage sharing this dashboard to other users who have the same email domain as you or even external users.

   Sharing provides access to the dashboard and reports in the reading view, which means they can interact, but not change the layout of the dashboard or reports.

   *Users will find the dashboard in their **My Workspace**, annotated with the sharing icon. They will not see the dataset that it uses.*

Exercise 4: Keeping data current

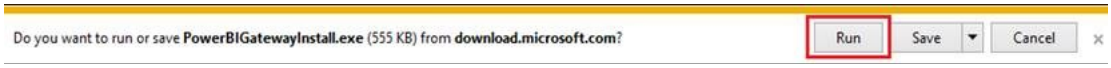
In this section, you will learn to setup On-Premises Gateway that allows to refresh the content in the Report and Dashboard from an on-premises data source.

Task 1: Installing gateway

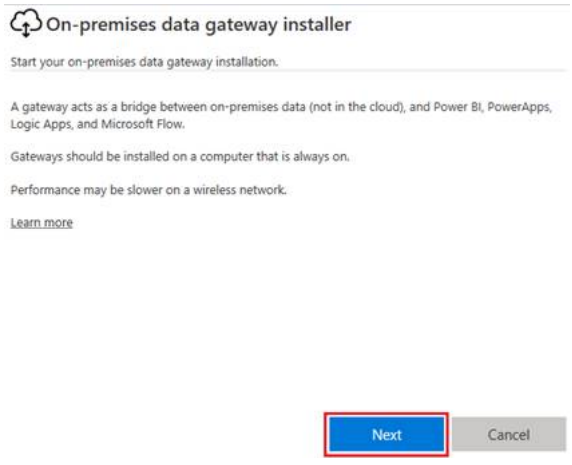
In this task, you will install the gateway to schedule a refresh on the report that we published.

1. Go to http://app.powerbi.com and login with your credentials. Once logged in please click on the down arrow on the top right corner. Select **Data Gateway**.

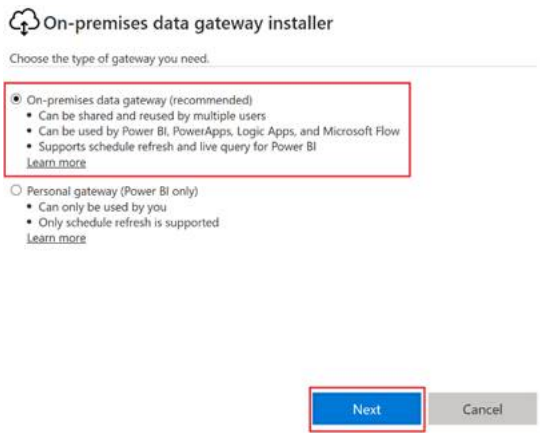
2. In the browser window select download gateway. And click run when prompted to run or save the exe.



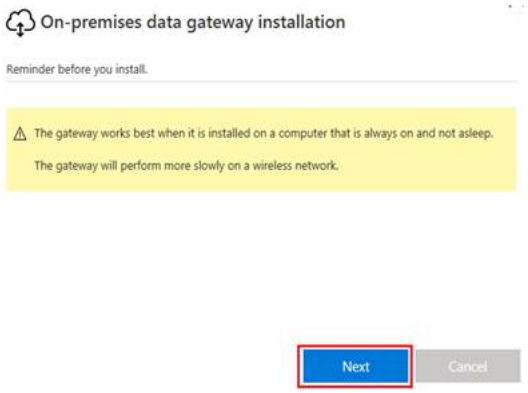
3. Click **Next** in the installation wizard that will be started.



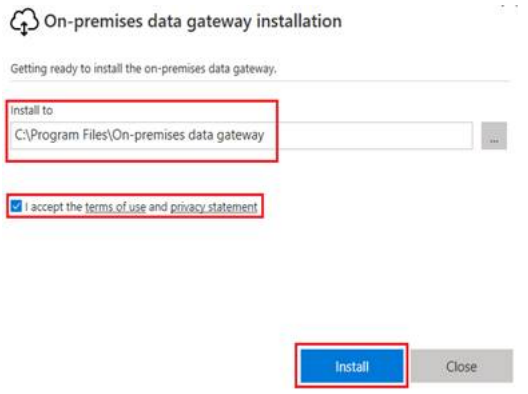
4. You will be prompted to pick either of **On-Premises Gateway** or **Personal gateway**. Leave the selection to **Default** as shown in below screen.



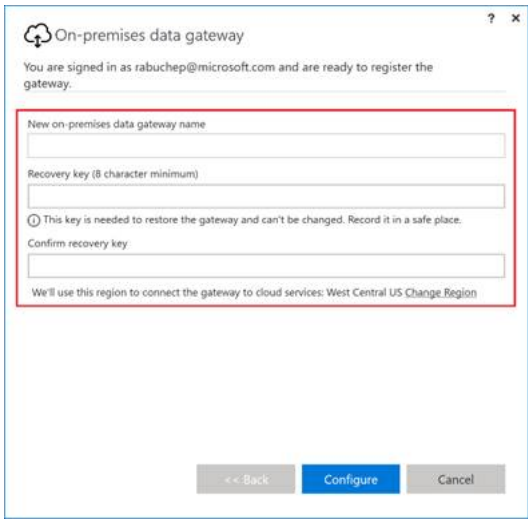
5. You will be prompted with a warning message as displayed below.



6. In the next dialog check the accept terms by leaving the default installation path as is and click **Install.**

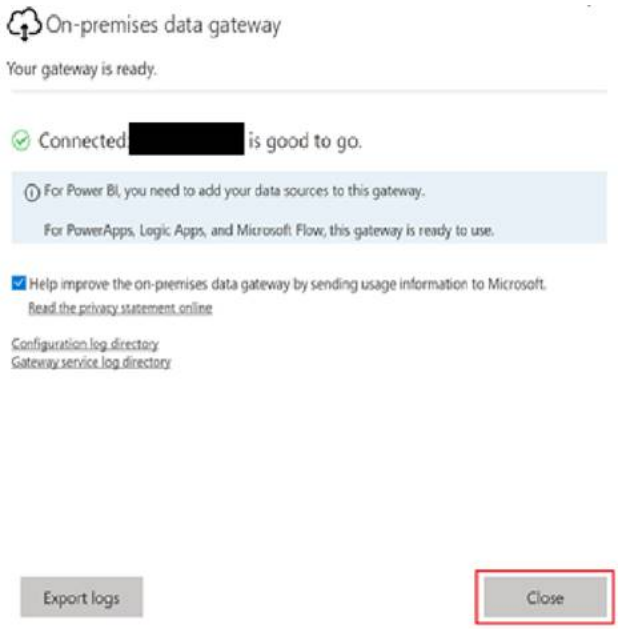


7. Once the installation is complete use a Pro account to **sign in** and you will be able to see the below screen to configure the Gateway.



8. Provide a **name** and **recovery key** of your choice. Remember to take note of **Recovery Key** in your environment which can be reused to restore the gateway if needed.

9. Click on **Configure** to complete the setup. You will be presented the following screen.



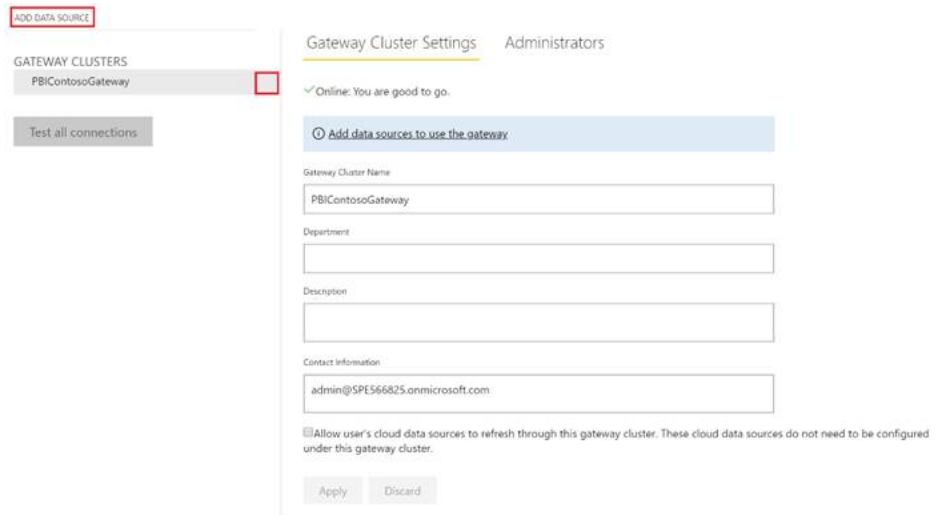
10. The gateway is now setup and running.

Task 2: Setting up refresh

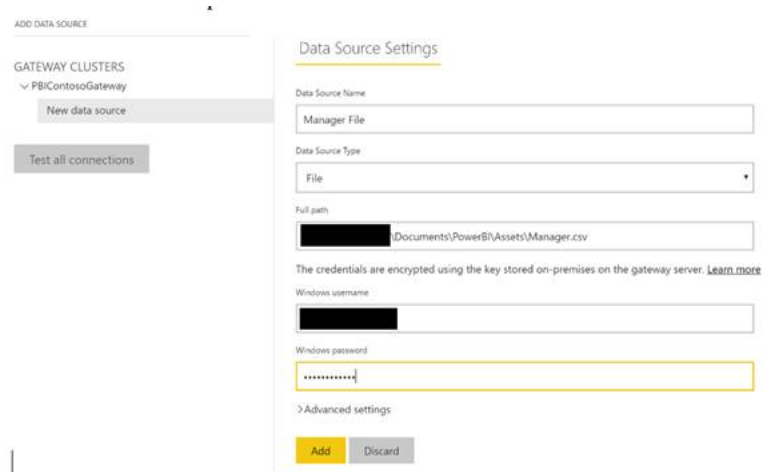
In this task as the Gateway is setup and running now – let us setup a refresh to the data source that we have used part of the report – **USSalesAnalysis.pbix**

1. Login to http://app.powerbi.com or the service URL provided by the instructor.
2. From the menu on the top right, click on the **gear** icon and select **Manage gateways.**

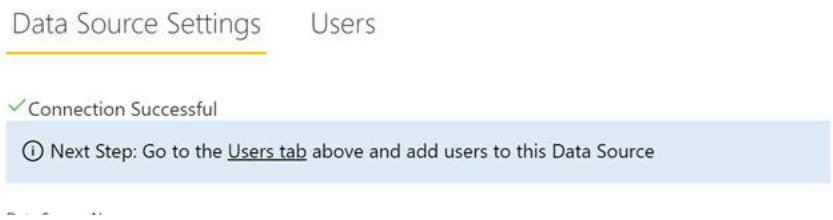
3. You will be presented with the following screen. Click on **Add Data Source**



4. We need to create the appropriate data sources to ensure the report will be able to refresh based on the schedule. Let's configure for the two files we have used part of the report creation – Manager.csv and ProductCost.xlsx. follow the below screen to create data sources for the Manager.csv files. Use the username (POWERBI-WIN10/labuser) and password from the machine tab for the credentials.



5. After you click on **Add** you will see the following confirmation dialog if the gateway is able to successfully connect to the data source. You can add all the **Users** who will be authoring reports from the same data source.



6. Please note that in your environment you might want to go to the "**users"** tab to add all the users who can use this data source to publish the reports.

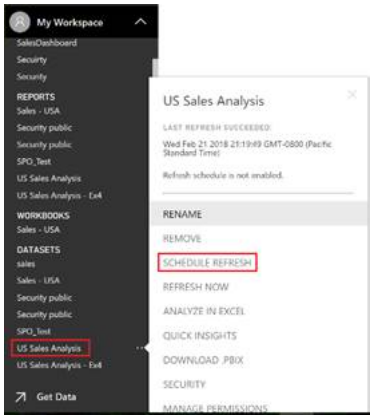
Best Practice: Use AD Groups for reducing manual work to add the users.

7. **Exercise:** lets repeat steps 13 – 15 to create a data source for the ProductCost.xlsx.
8. **Exercise**: Now Let's try to add a data source to the database – **TailSpinToys-US** that you have used to build the report **US Sales Analysis**.

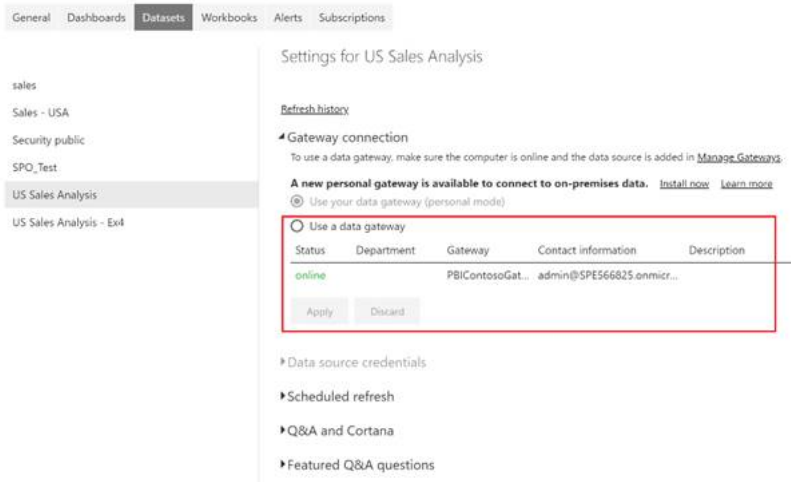
Data Source	Path	User Name	Password
Manager.csv	E:\Assets\Lab 1\manager.csv	powerbi-win10\labuser	P@ssw0rd1!
ProductCost.xlsx	E:\Assets\Lab 1\ ProductCost.xlsx	powerbi-win10\labuser	P@ssw0rd1!
TailSpinToys	**Server**: POWERBI-WIN10 **Database:** TailSpinToys-US	powerbi-win10\labuser	P@ssw0rd1!

Hint: *use the following data source details to add data sources.*

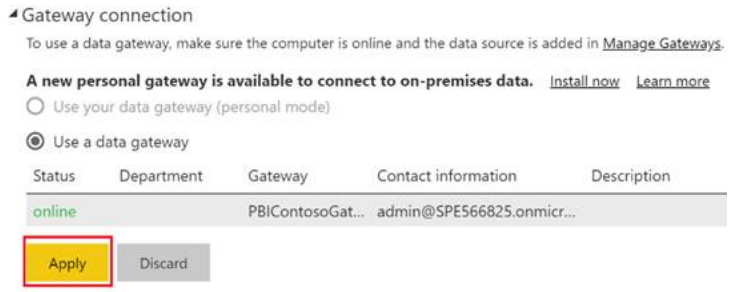
9. After all the data sources are setup successfully we need to schedule the refreshes to the report datasets.
10. Navigate to Datasets section on the left breadcrumb panel and locate the dataset called **US Sales Analysis**. Click on the **ellipses** and click on **Schedule Refresh** as shown in the Figure.



11. You will see the following screen in which the Power BI service has already detected that you have setup a Gateway for the data sources used in the report. **Expand Gateway connection**.

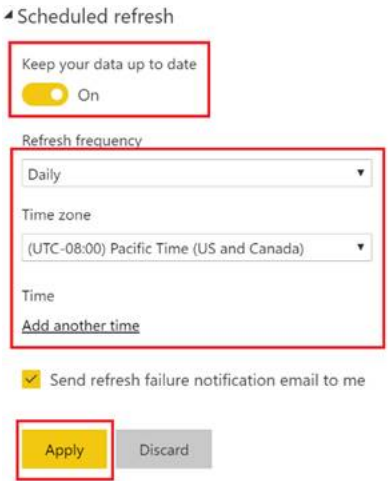


12. Select **Use a data gateway** and click **Apply.**



13. A **notification in the top-right corner** appears confirming the gateway has been updated. Observe in the bottom you have option called **Schedule Refresh.** Click on it to expand.

14. Once expanded turn on the **Keep your data up to date** option and setup the refresh frequency. For the lab session you can leave the default selections as is. Click **Apply.**



15. Your dataset is now configured for the Scheduled Refresh. You can test by updating the data in any data source and setting up the refresh frequency as appropriate to verify.
16. You can also check the **Refresh History** of the dataset by going to dataset settings.

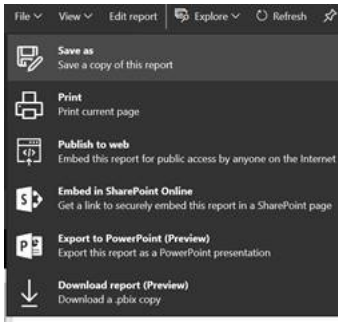
Exercise 5: Row Level Security – Creating roles in PowerBI Desktop

In this section, you will learn to create roles in PowerBI Desktop. Creating roles is the first step in adding row level security to the report.

Task 1: Creating roles in Power BI Desktop

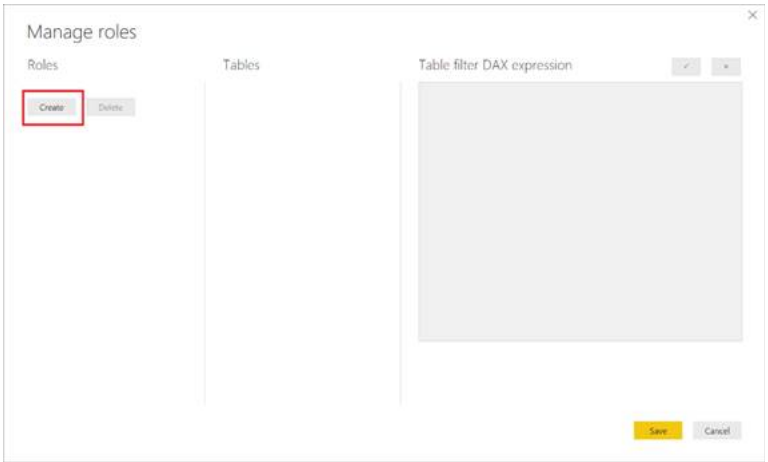
In this Task, we will add security around the report, so that individuals from a specifc state view only their specific state's data.

1. Click on any tile on the Dashboard to Open the corresponding report – US Sales Analysis in Power BI Service.
2. Once the report is opened click on **File** Menu and Select **Download report (Preview).**

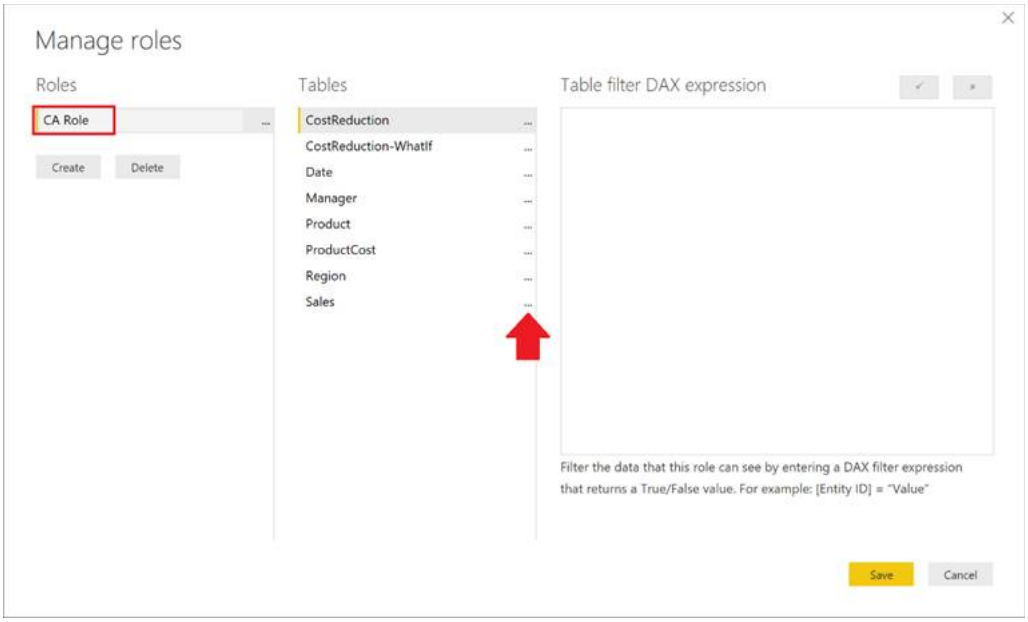


3. Save the report as USSalesAnalysis_RLS.Pbix and Open it in Power BI Desktop.

4. From the ribbon select **Modeling -> Manage Roles**. Ensure that Manage roles dialog opens as shown below. Click on **Create** button.

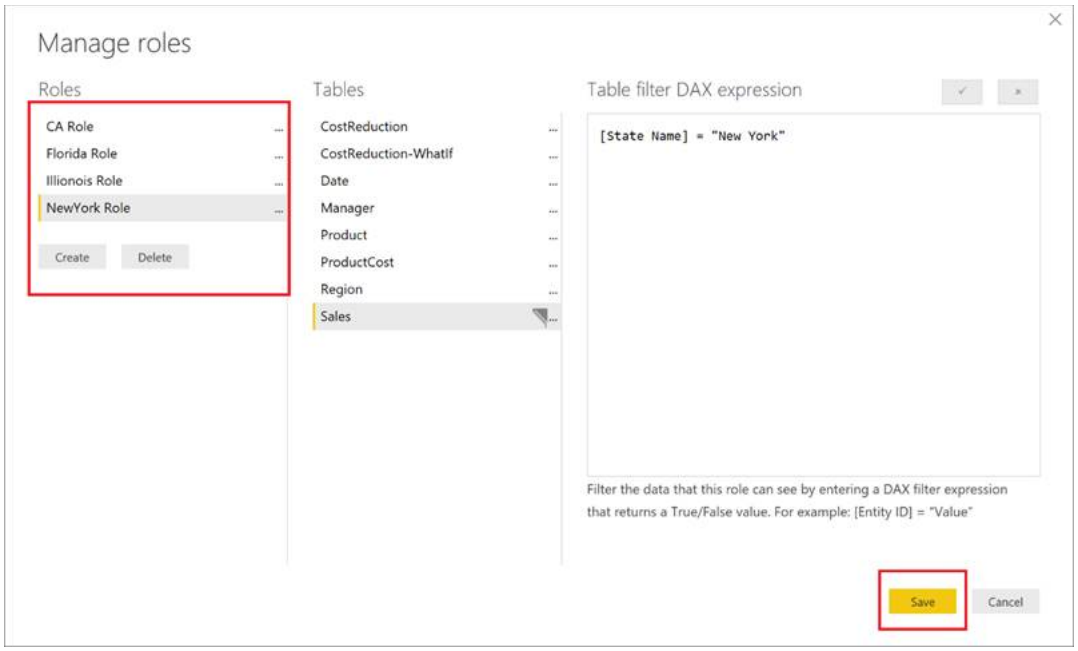


5. Name the role as **CA Role**.
6. Click on the ellipsis next to **Sales** table in Tables section. See below.



7. Select **Add Filter -> [State Name].**
8. Notice DAX Expression - **[State Name] = "Value"** appears in the text area titled **Table filter DAX expression**.
9. Edit the DAX Expression to **[State Name] = "California".**
10. Click on the check mark on the top right corner. This will validate the DAX expression in the dialog box.

11. **Exercise:** Similarly add new roles for states - Florida, New York and Illinois.
12. Once you add the three roles ensure the "Manage Roles" dialog looks like the below screen – after confirmation click on **Save**.

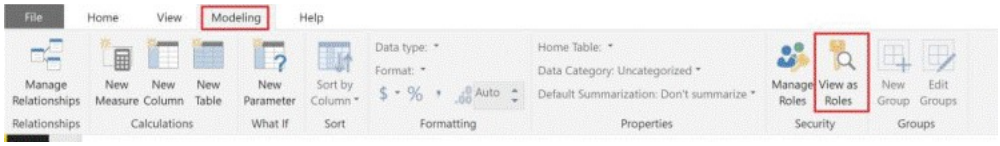


Task 2: Testing roles in Power BI Desktop

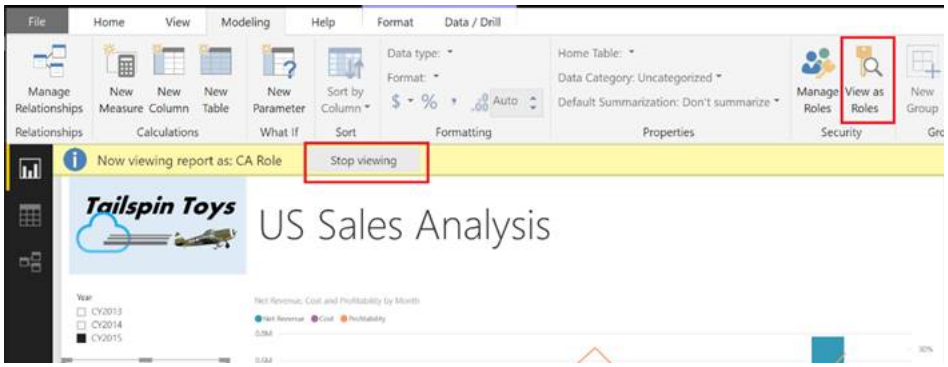
In this Task, we will test the roles using Power BI Desktop. Power BI Desktop provides the capability to validate the roles you created. This helps us view the reports as a different role and make sure it's formatted right for that role. Lets now validate the roles we have created using the **View as Roles** feature**.**

1. Ensure the report is open in Power BI Desktop.

2. From the ribbon, select **Modeling -> View as Roles**.



3. View as roles dialog appears. Select **CA Role**.
4. Click OK.
5. Notice now you are viewing as a person with CA Role would view and the data in the report now is filtered for **California** state.
6. **Exercise:** Test the other roles that we have created earlier and check if all of them are working fine.
7. Click on **Stop viewing** to exit CA Role view.



8. We will add users to these roles in the Power BI Service after publishing the changes.
9. Save and Publish the report to Power BI Service to My Workspace.

Exercise 6: Row Level Security – Adding users to security roles in PowerBI Service

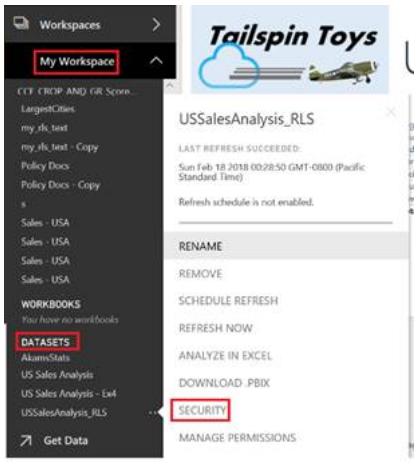
In this section, you will learn to add users to the security roles that were created in PowerBI Desktop in the earlier exercise through Power BI Service. Adding users to the roles is the last step in adding row level security to the report.

Task 1: Adding users to the security roles in Power BI Service

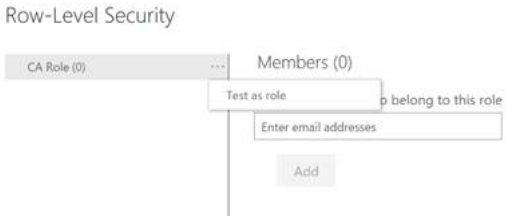
In this task, you will learn how to add users to the security roles that are created in Power BI Desktop.

1. If not already logged in Log in to http://app.powerbi.com. Ensure **MyWorkspace** is selected.
2. In the left panel, hover over **USSalesAnalysis_RLS** under **DataSets** section. Click on the ellipsis.

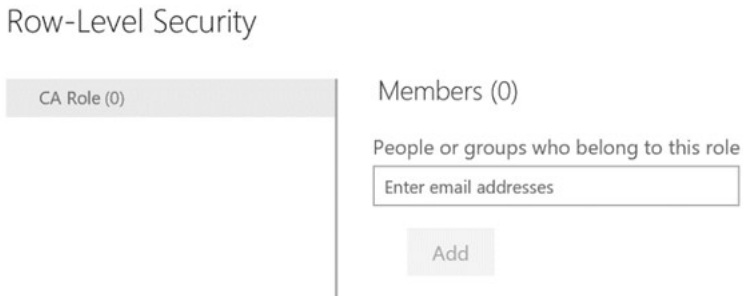
3. Click on **Security**. Row-Level Security page is displayed. You can now configure roles to add Users or test the report as a specific role.



4. **Exercise:** Try testing the roles using the **Test as role** by clicking on three dots right next to the role name.



5. Once the Exercise is complete, click on each role and enter members email address. You can add the person's email sitting next to you for testing purposes.
6. Click on Add to add users to the **CA Role**.



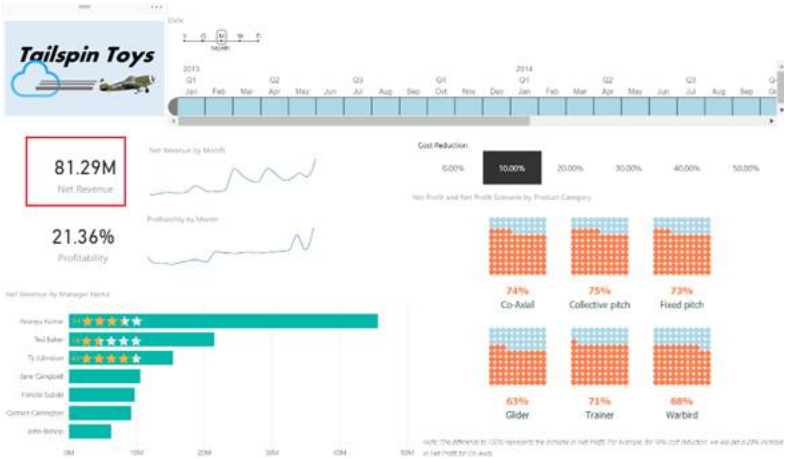
7. Once the User email is added - share the report to the users and ask them to check the data they should only see role specific data – for instance users added to CA Role should only see California state and People in Florida Role should only see Florida state data.

Note: Sharing can be done by going to the report and click Share on the top of the report and by entering the email id of the user

Task 2: Enabling Data-Driven Security using Dynamic Roles

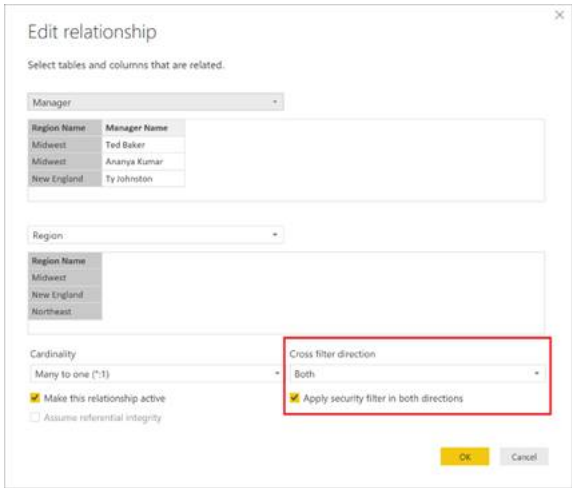
In this task, you will develop a data-driven design by using the Manager table already present in the US Sales Analysis report. We will now create a role so that the manager who is logged into Power BI service will only see his data. For Instance, if **Ted Baker** logs in he will only see 21.47 million as the total revenue instead of 81.29 million.

1. Open the Previously saved **USSalesAnalysis_RLS.pbix** in the previous exercise. Ensure you see the following revenue in US Sales Scenario page of the report.



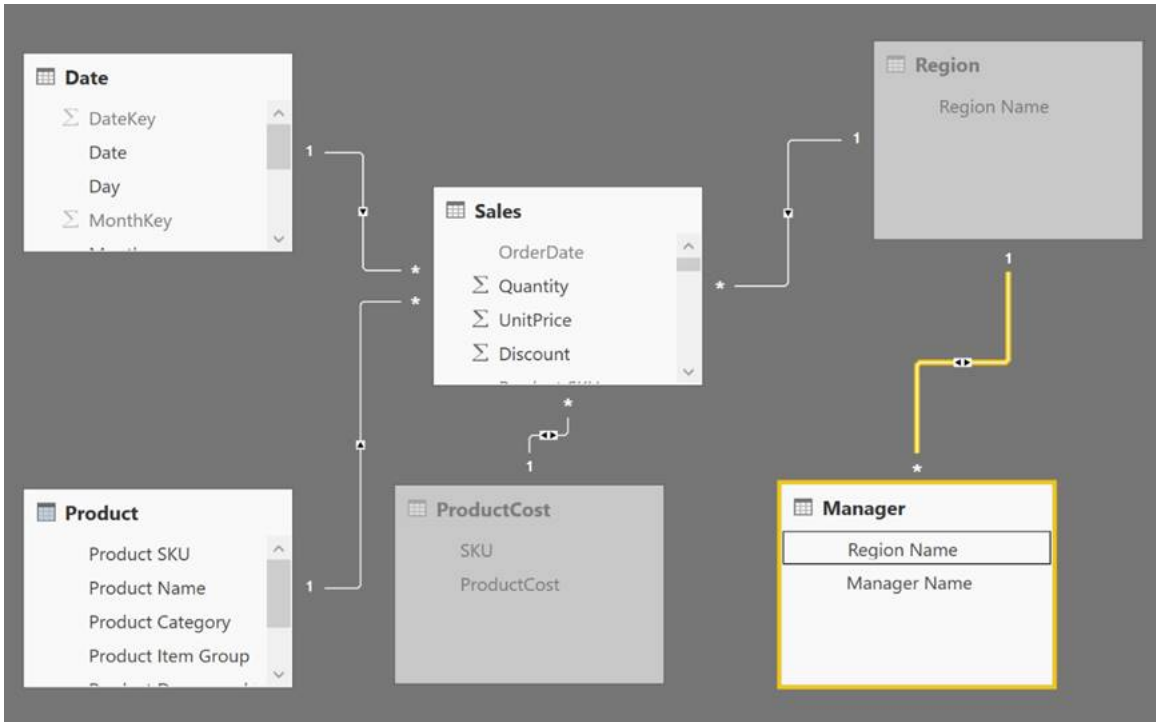
2. In Relationships view, notice that the Manager table is present, and a relationship connecting to the Region table.

3. Ensure that the relationship between the Region table and the Manager table, is as shown in the image below -



4. Click OK to save and close the relationship dialog.

5. To enable the security role enforces permissions for a manager, the filter must propagate to Manager > Region > State > Sales. Ensure the relationships tab looks like below -



6. Add a calculated column Manager email to Manager table.

DAX

ManagerEmail = SUBSTITUTE(Manager[Manager Name], " ", "") & "@tailspintoys.com"

7. Notice that the new column is added to the Manager table with the manager emails as follows –

Manager Name	ManagerEmail
Ananya Kumar	AnanyaKumar@tailspintoys.com
Carmen Carrington	CarmenCarrington@tailspintoys.com
Haruto Suzuki	HarutoSuzuki@tailspintoys.com
Jane Campbell	JaneCampbell@tailspintoys.com
John Bishop	JohnBishop@tailspintoys.com
Ted Baker	TedBaker@tailspintoys.com
Ty Johnston	TyJohnston@tailspintoys.com

8. Let us now Create a Dynamic Role to filter the Manager table by which other tables in the relationship are also filtered.

9. Add a role named Manager.

10. Set the filter on the Manager table, **ManagerEmail** column:

DAX

[ManagerEmail] = SUBSTITUTE(USERNAME(), "~", " ")

This expression passes the Manager Email via the **username** parameter, which can be retrieved by the **USERNAME** function in a DAX expression. Therefore, this expression will filter the **Manager Name** column by the result of the **USERNAME** function, substituting tilde (~) characters for spaces.

Note that when programmatically passing a username value, the property does not allow embedded spaces—it expects an actual User Principal Name (UPN). Any spaces will be first replaced with tildes. Therefore, the DAX expression must revert these characters back to spaces to perform the correct filtering.

11. To test the role, check the **Other User** role, and then in the corresponding box, enter **TedBaker@tailspintoys.com**.
12. Check the **Manager** role so that the above email is passed to the USERNAME() function.
13. Click OK.
14. Ensure you see only 21.47 million revenue in US Sales Scenario page of the report which is now specific for **Ted Baker**.

15. You can also verify that only the **Midwest** region is shown in **USSales** page as Ted Baker manages only **Midwest** region.

Region Name	Net Revenue
Midwest	21,473,431.55
Total	**21,473,431.55**

Manager Name	Net Revenue
Ted Baker	21,473,431.55
Total	**21,473,431.55**

16. View the report as **TyJohnston@tailspintoys.com** in the Manager role
17. Verify that two regions are available: New England and Southwest.
18. View the report as **TyBaker@tailspintoys.com** in the Manager role
19. Verify that you are seeing blank results as there is no Manager with the name Ty Baker in our Manager table. The Manager table filters to zero rows, resulting in the Sales table also being filtered to zero rows, producing blank results for all calculations.
20. Click on Stop viewing on the report to remove the applied filters on the report data.

21. Please note that in Power BI Service USERNAME() function returns the logged in User Email address or UPN. So this can be used to control the data a user sees when they login.

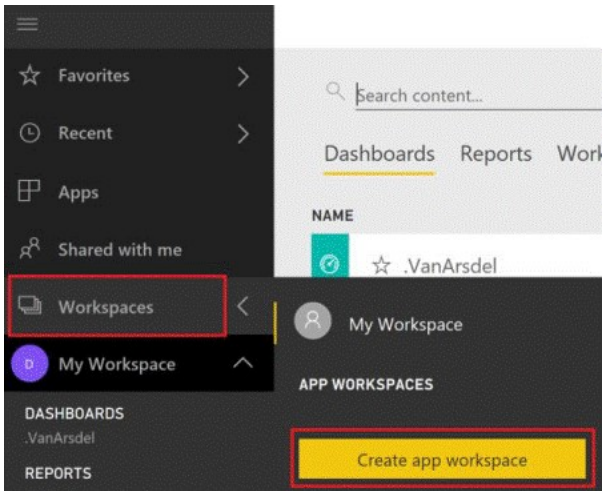
Exercise 7: Sharing – Creating App Workspaces & Apps

In this section, you will learn how to create apps and create content. You will learn this section more efficiently if you can pair up with a co-worker from your organization and have rights to create O365 groups. Please note that this section requires **Pro** licenses.

Task 1: Creating App Workspace in Power BI Service

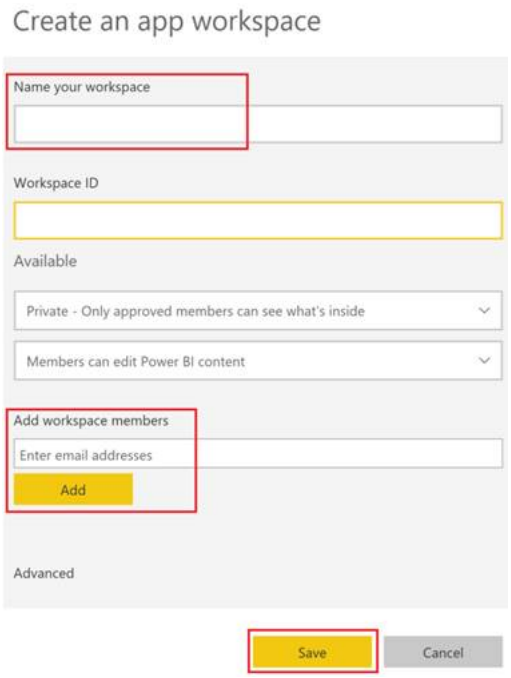
In this task, we will create an app workspace, add members to collaborate and publish the report to the newly created workspace.

1. Log into your http://app.powerbi.com or the URL provided by your instructor using your organizational credential.
2. Expand the left panel.
3. Select Workspaces. If you are part of other workspaces those workspaces will be displayed here.
4. Select Create app workspace.



5. Notice Create an app workspace panel opens on the right side of the screen.
6. Enter the name for your workspace as PBI Workshop.
7. Select if you want the workspace to be private.
8. Select the members of the workspace can edit content.

9. Enter the email addresses of users of your organization who need to be part of this workspace as shown in the figure.

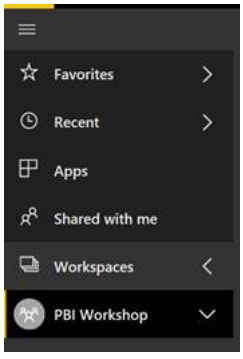


10. Click Add to add the members.

11. Save button is enabled at the top of the screen. Click on Save.

12. You will now have a workspace created.

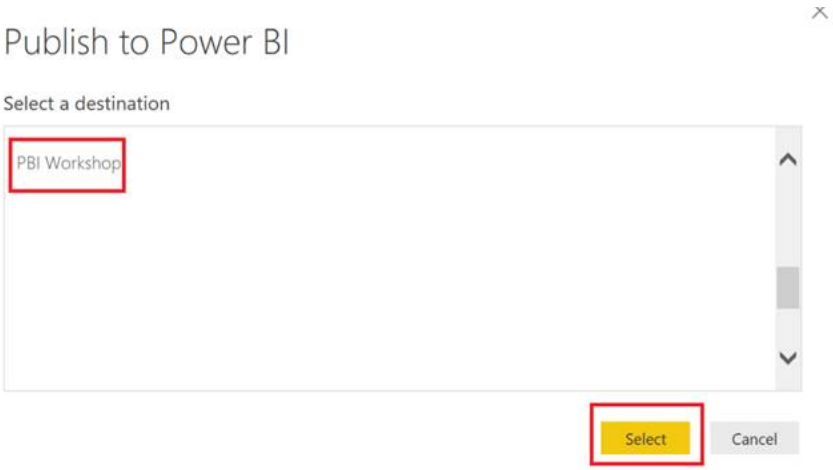
13. Notice that you are navigated to the new workspace you just created. In this example, we created a workspace called **PBI Workshop**. You and your co-workers can bring content into the workspace, create dashboards together and package the set of dashboards, reports and datasets and share them as apps.



Task 2: Publishing the report to App Workspace

In this task, we will use the US Sales Analysis report to publish to the newly created app workspace. Reports can be published to the app workspace by the users with required permissions on the app workspace.

1. Open **US Sales Analysis.pbix** in **Power BI Desktop**.
2. Click on **Save** and **Publish**. You will now see a dialog asking for the Workspace to be published to.
3. Select PBI Workshop and click on **Select**.

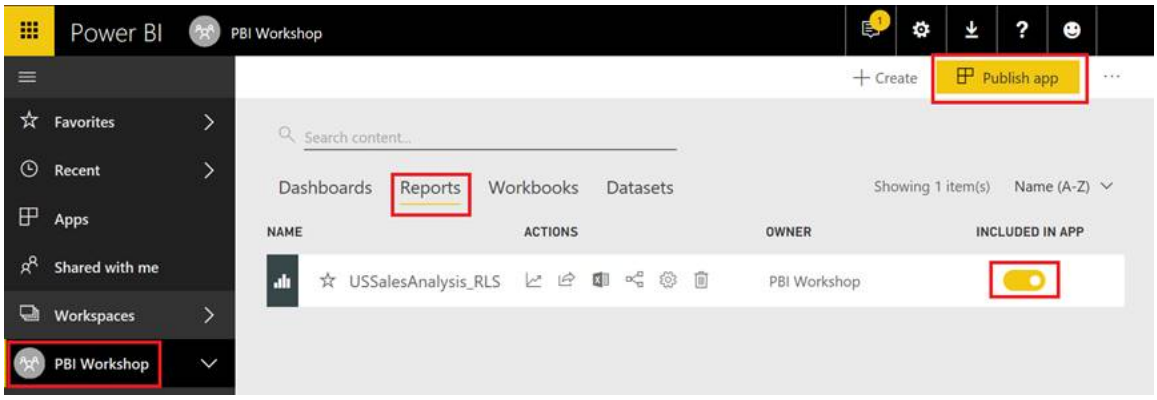


4. If you check the PBI Workshop Workspace now the report should be available to all the users in the workspace to collaborate.
5. App Workspaces can be used for all the collaboration activities within the team. Users can be added to different roles in the app workspace – Admin / Member.
6. **Exercise**: Test the different roles in app workspace.

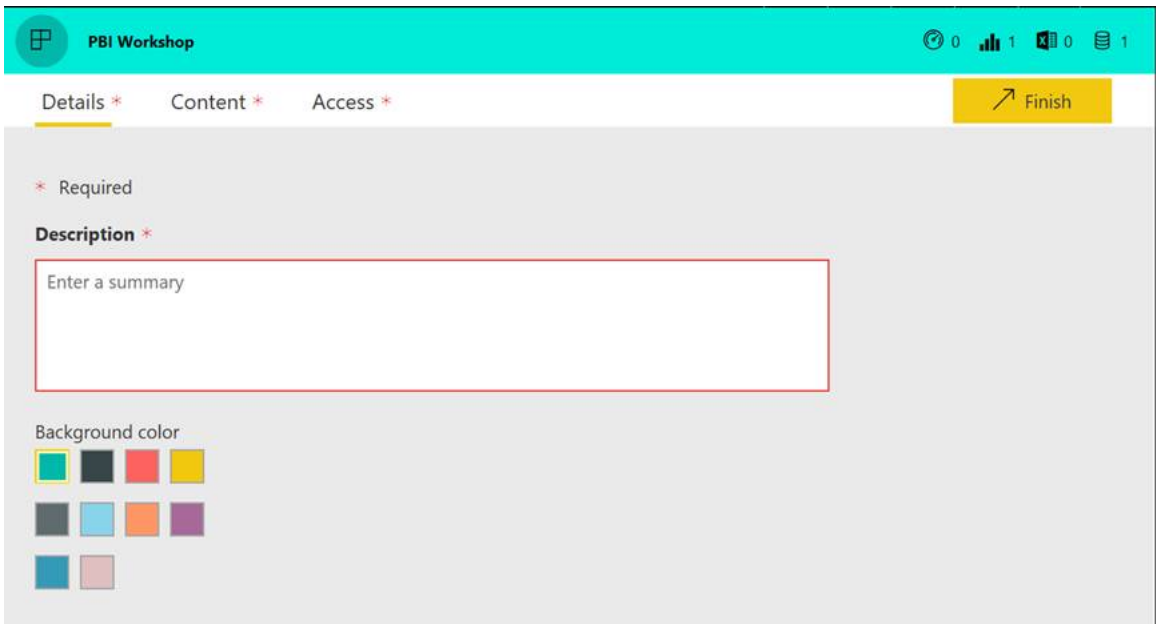
Task 3: Publishing an App from App Workspace in Power BI Service

In this task, we will create an app to publish the report from the app workspace **PBI Workshop**. To distribute the report – we can publish **App Workspace** as an **App.**

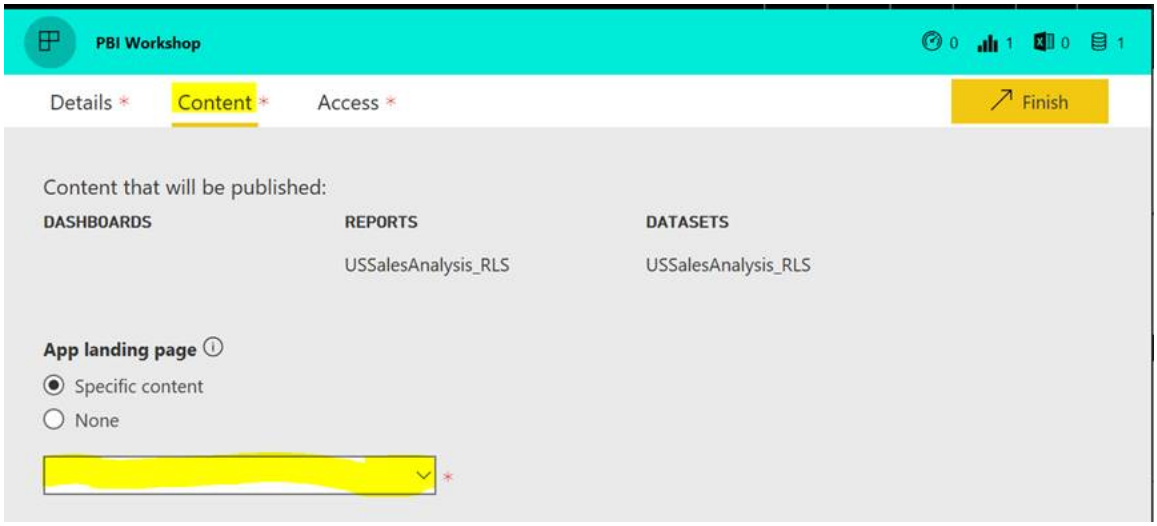
1. Ensure PBI Workshop workspace is selected by checking at the top left corner of Power BI Service.
2. Verify if the recently published report is selected in **Included in App** and in the top right corner, click on **Publish App**.



3. You will be presented with App Creation/Update Screen as below. In **Details** tab Enter the **Description** and Select a **background color**.



4. Click on **Content** tab and verify the content being included. Select the report in the App Landing page.



5. Click on **Access** tab and share the **App** to entire organization or to the specific people by entering their mail ids. You can also add groups.

6. **Click** on **Finish** and Confirm the publish process by clicking on **Publish**. You will be presented with a dialog with the App URL to be shared to the users. Users can also click on Apps on the left and install the respective apps.