Microsoft

# Microsoft Power BI – Wide World Importers scenario workshop/lab

# Contents

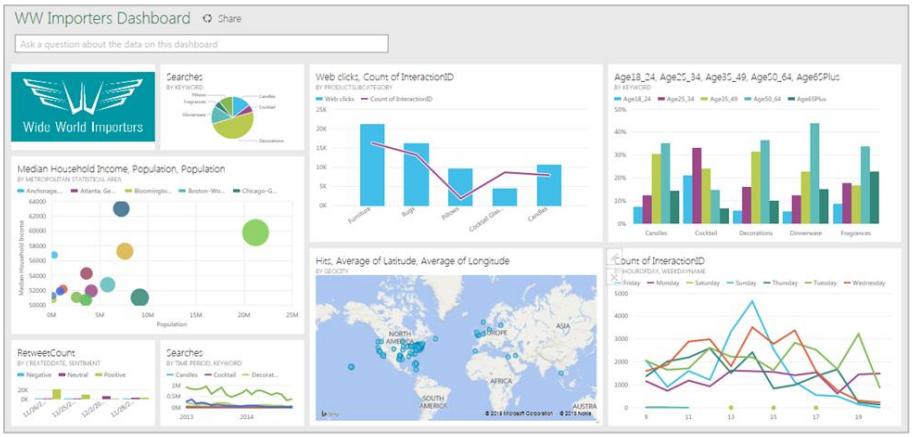
# Overview

This lab is intended as a full day of Power BI technical training that can be used for standalone demonstrations or as an instructor lead or self-guided hands on labs. The exercises are designed to run in sequence during the full day training session. The exercises do not require a VM, they can be completed on your local machine with the assets provided as part of this lab.

There are currently seven exercises that make up the lab training which is based on Microsoft Power BI and its related tool set as of April 2015. The modules include:

1. Signing up and creating a Power BI Dashboard
2. Exploring data with Power BI Dashboard
3. Building reports for Power BI Desktop
4. Creating content for Power BI Dashboard using Excel
5. Using Power BI on your iPhone/iPad

You will be using data for a fictional retail company – Wide World Importers to create data visualizations like the one shown below.



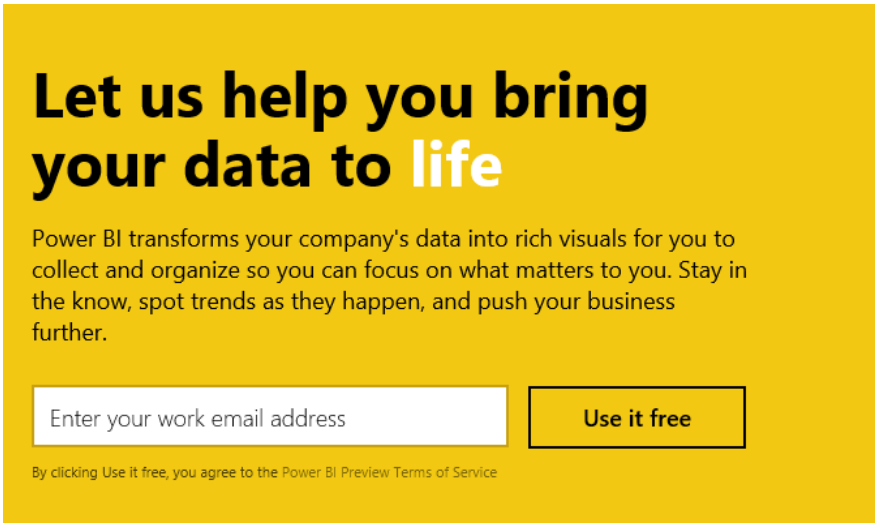
# 1. Signing up and creating a Power BI Dashboard

## Signing up and creating a Power BI Dashboard

In this exercise, you will sign in to http://www.powerbi.com and create a new dashboard from a Power BI Desktop file (.pbix) and an Excel file, which have been provided as part of this lab. You will also explore the sample dashboard. Let's get started!

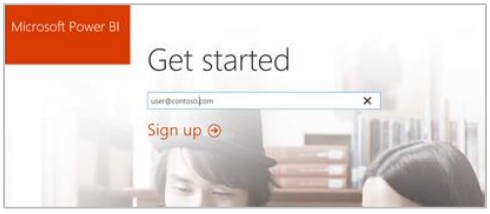
## Signing up for Power BI

1. To create a free Power BI trial account, go to **www.powerbi.com** in a web browser.

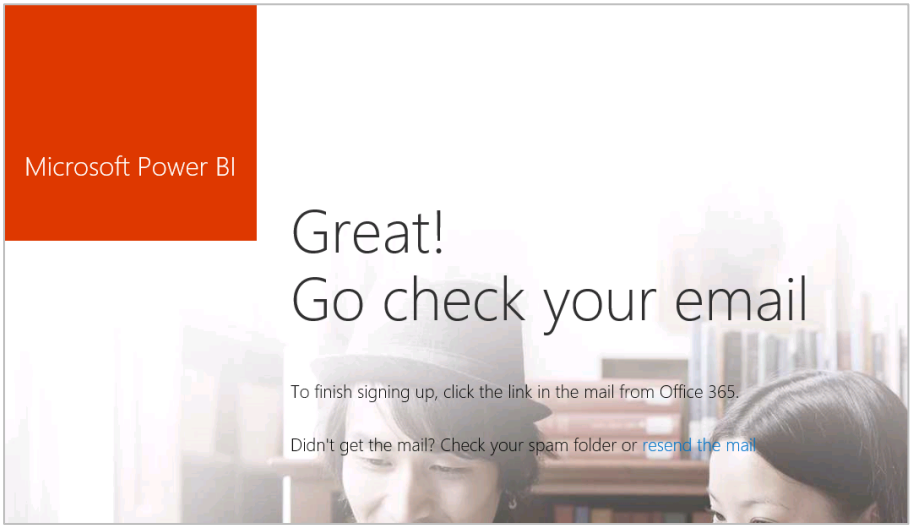



2. Type in your work email address and click **Use it Free**.

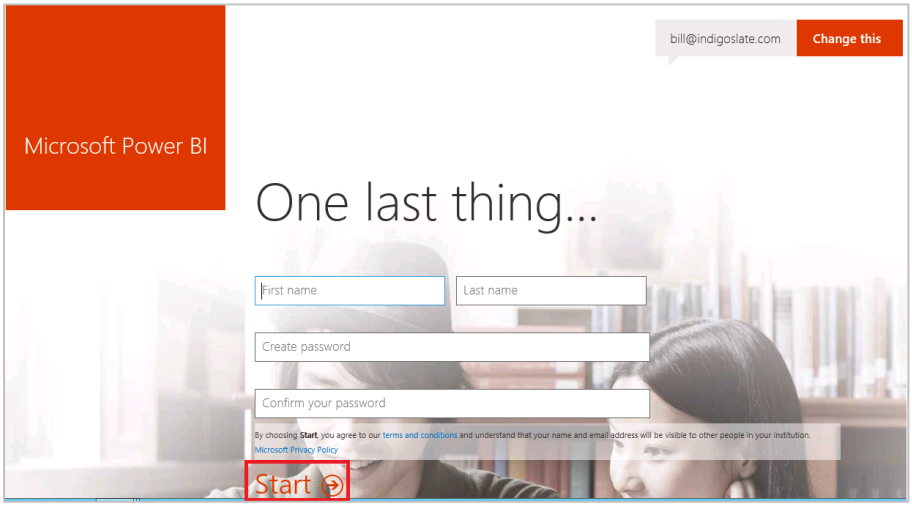
   *Note, you cannot use an email account from public providers. This must be a work email address.*




3. Click **Sign up** on the **Get started** page.



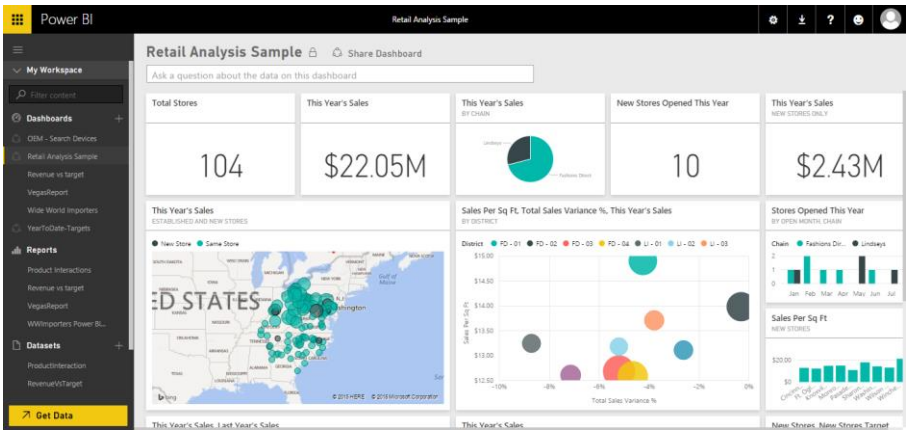

4. Go to your work email and click on the link **Complete Microsoft Power BI signup** to browse to your Power BI site.

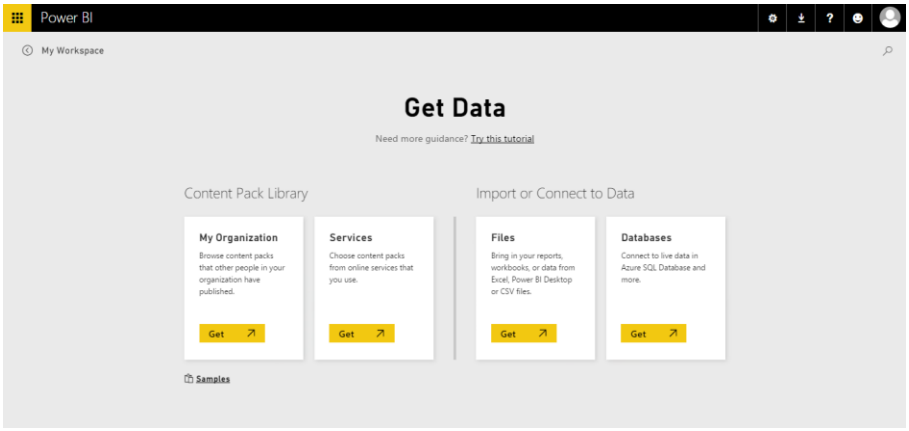



5. Compete the information and click **Start** to start your Power BI experience.

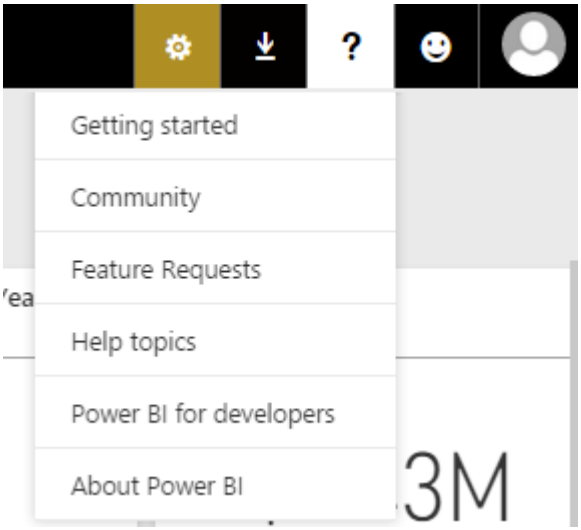
## Exploring the sample dashboard

1. After you successfully login, you will see a sample dashboard displayed.



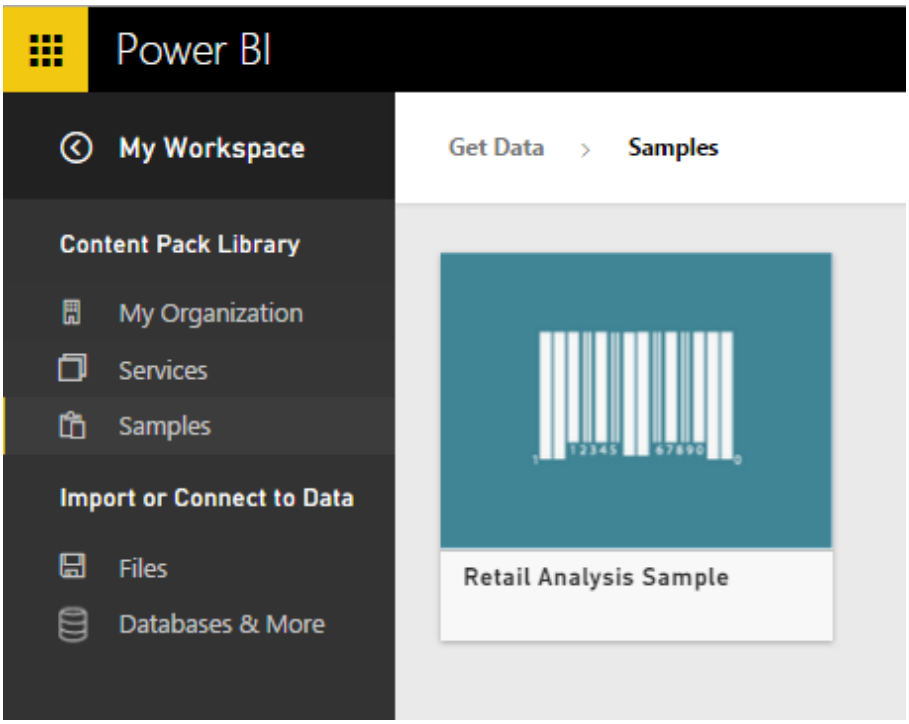




2. To find more useful information, go to the **?** in the top right corner of your screen. Link to take a tour



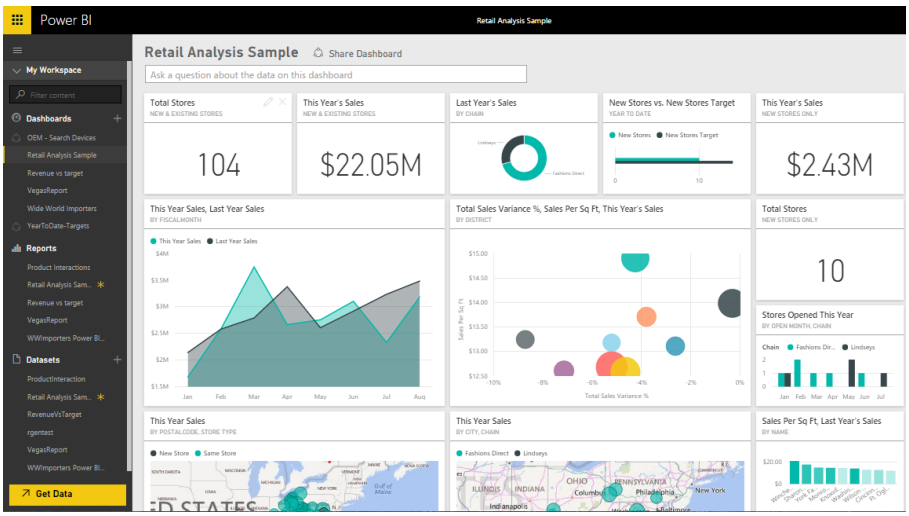
3. To explore this **sample dashboard** click on **Get Data**


4. Click on the **Samples** link on the page to go to the Samples.




5. Click on **Retail Analysis sample** then **Connect**.

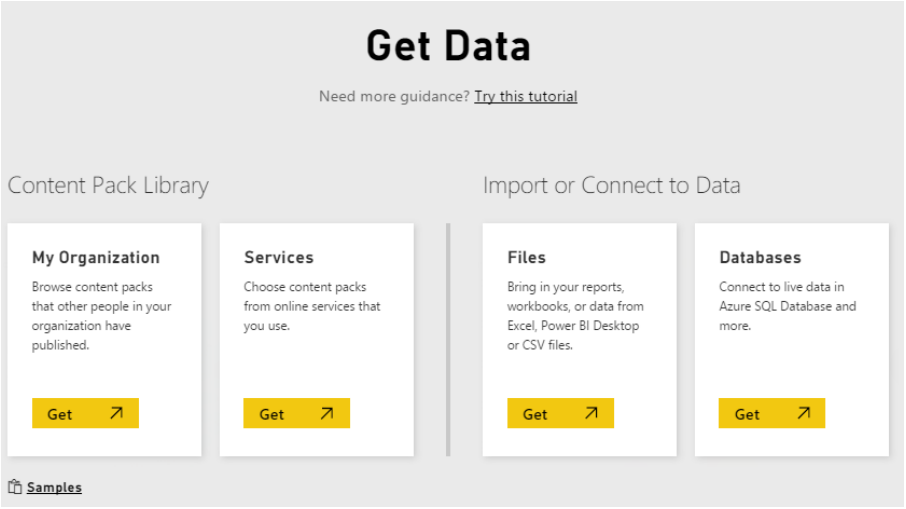

6. On Connect Power BI will provision out of the box Retail Analysis Sample **dashboard**, a **report** and a **dataset**.



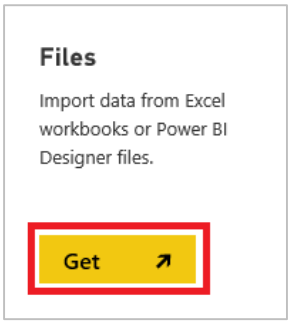
## Connecting to an Excel worksheet and creating a simple report

In this next step, you will populate a dashboard using an Excel workbook and create visualizations.

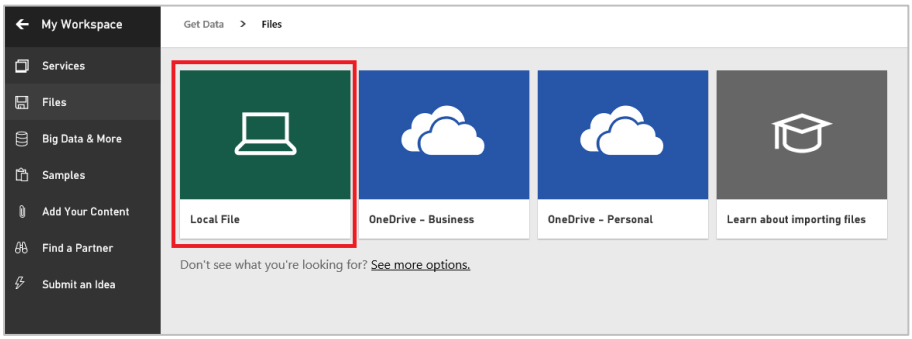
1. Go back to your Power BI dashboard browser window.
2. Click on **Get Data**.


3. Click **Get** button on **Files** Tab.




4. Click on Local File tile.

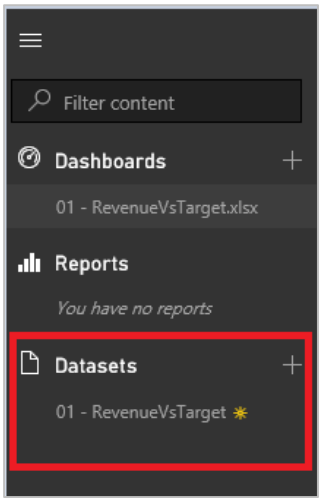


5. Click **Browse**, then select the **01 - RevenueVsTarget.xlsx** workbook located in the assets folder for the labs.

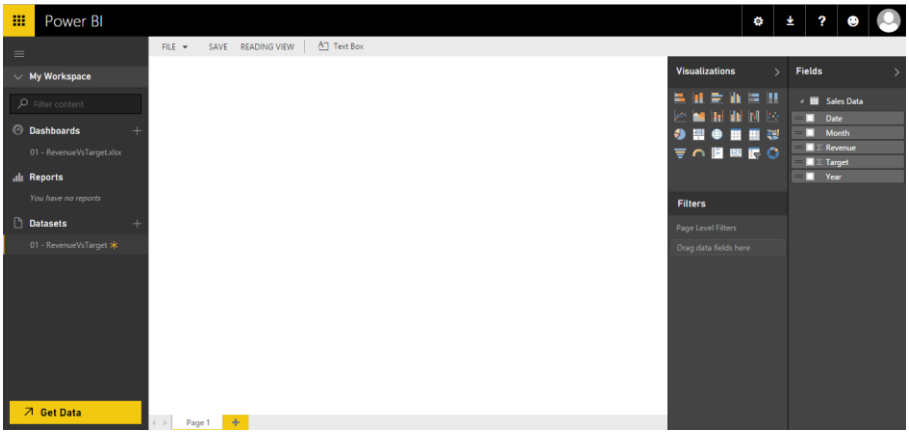
6. Click **Open** again to upload the file.

7. Once uploaded, the Excel workbook will be shown as a tile in a dashboard named **01 – RevenueVsTarget**.

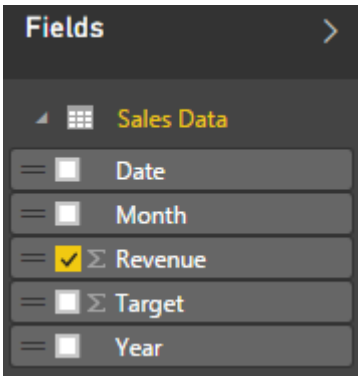

8. Notice on the left pane there are three main categories - **Dashboards, Reports and Datasets**. You can expand each of these sections to see a list of your datasets, reports or dashboards.



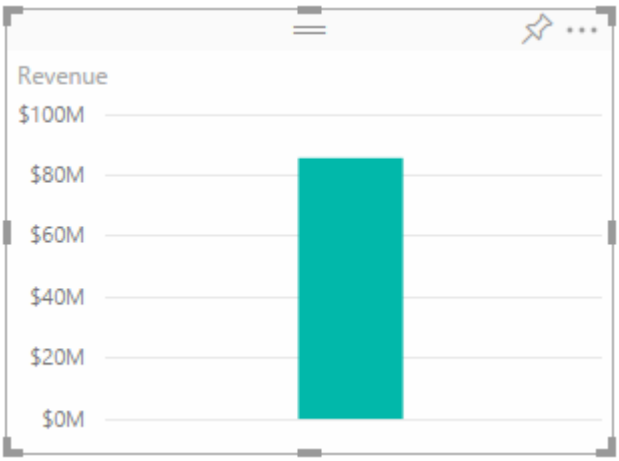

9. Click on the **01 - RevenueVsTarget** dataset to create a new report based on the dataset.



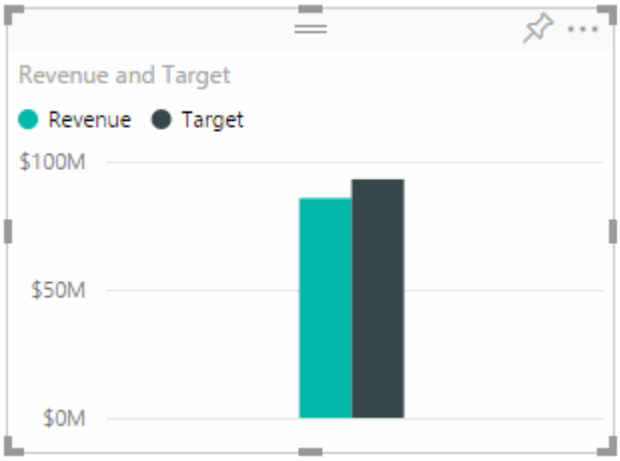

10. Check the field **Revenue** field under **Sales Data** in the right pane.




11. A column chart will be shown in the report.

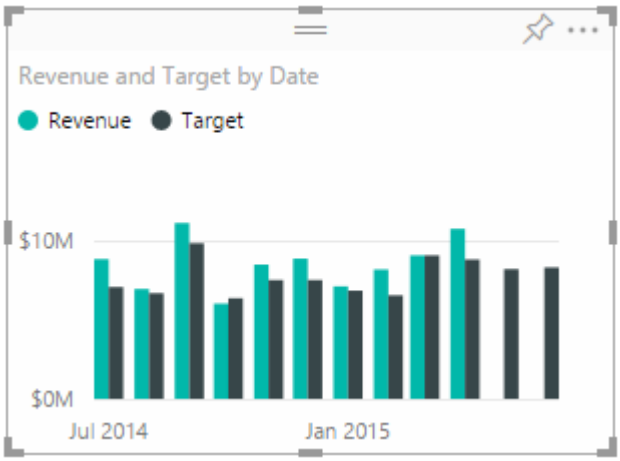



12. Check the **Target** field to add another column to the existing chart.

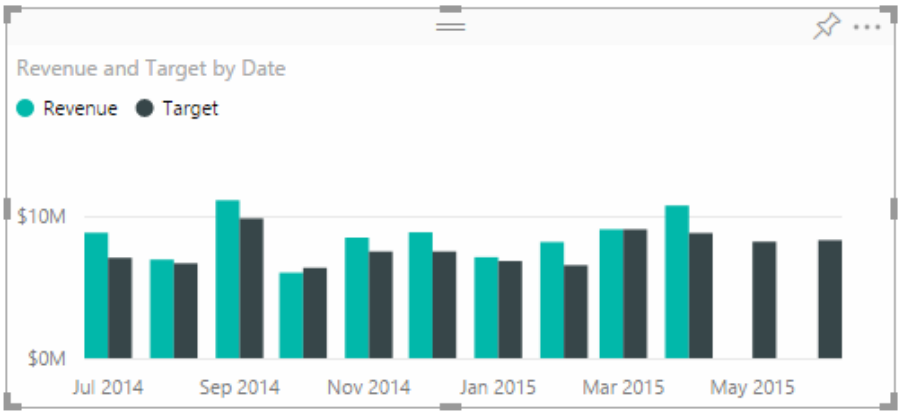



13. Check the **Date** field to display the data by date.

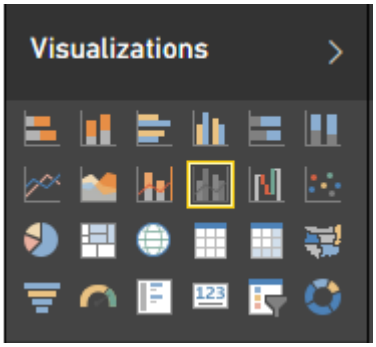
14. **Resize** the chart to clearly display all the months.



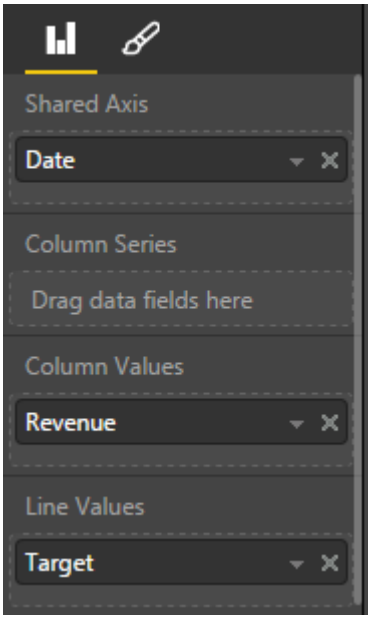

15. Notice there is no Revenue bar for the months of June 2015 and July 2015. This is because there is no revenue data for the two months in our dataset.



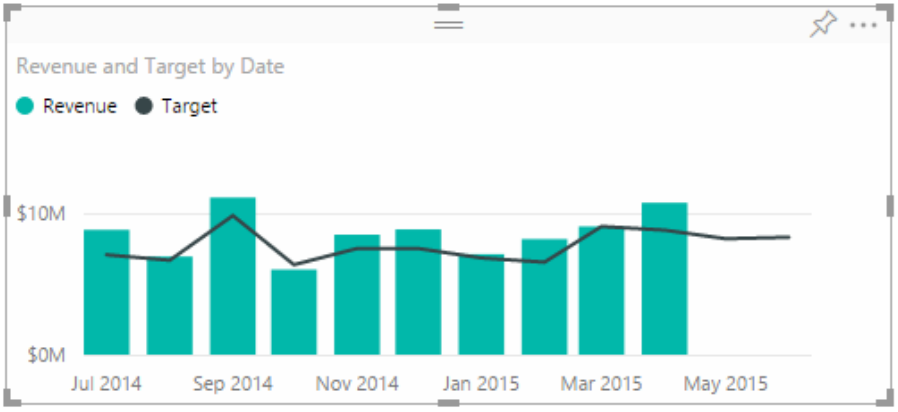

16. From the Visualizations control **Change visualization type** to **Line and Clustered Column Chart** visualization.




17. Below the field list on the right, drag the **Target** field from the **Column Values** drop zone to the **Line Values** drop zone.

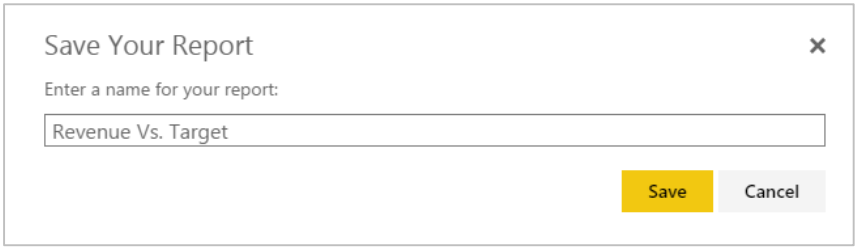



18. You should see a combined column and line chart as shown below.




19. Click on **Save**

20. Name your report **Revenue Vs. Target** and click **Save** again.

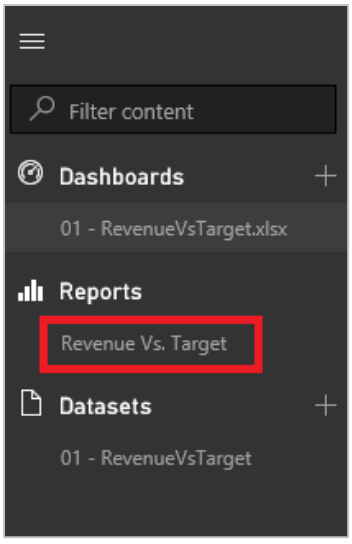



21. To add this visualization to your dashboard, select it, then click the **Pin to your dashboard** icon next to it.

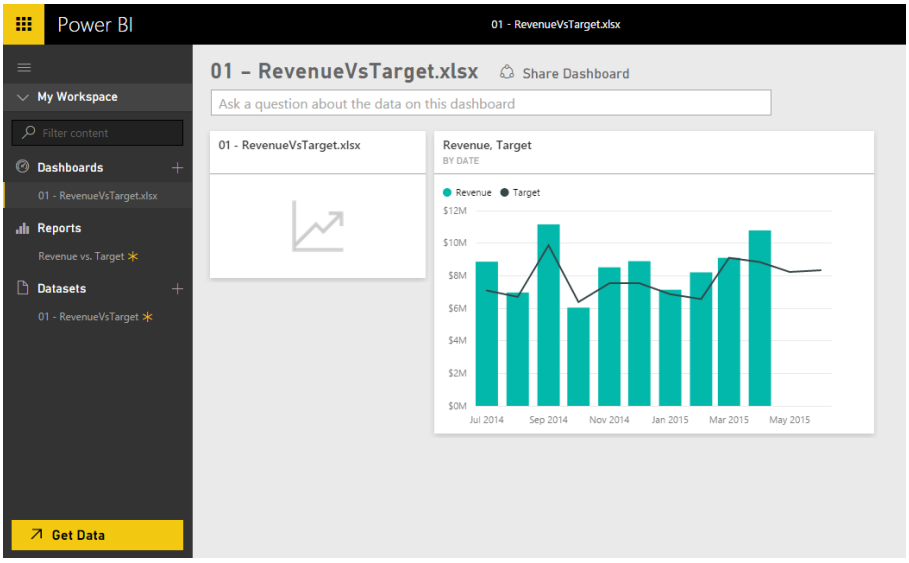
## View your results in the dashboard

1. Click on the Power BI icon to go back to the home page.


2. On the **Main Page** in the left most window, notice your new report appears in the **Reports** category.




3. The visualization you pinned is displayed in the **01 – RevenueVsTarget** dashboard.

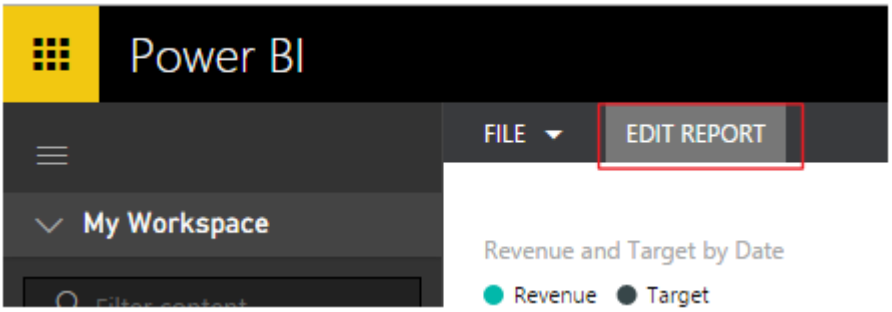



## Editing the Revenue Vs. Target report

In this task, you will add a gauge visualization to show the revenue amount compared to the target value.

1. Click on the report **Revenue vs. Target** to open it.

2. To make changes to the report, click **Edit Report.**

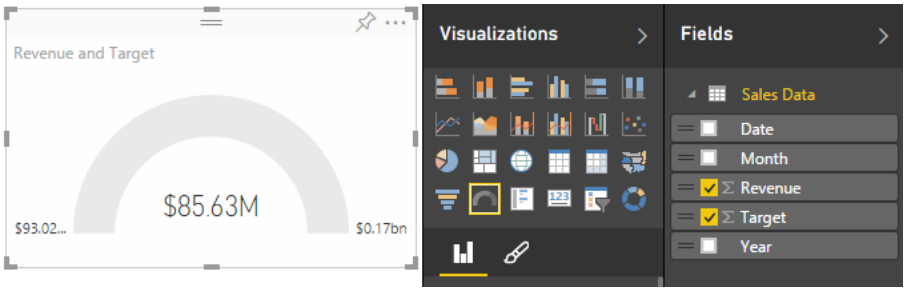



3. Click in a blank area of the report.

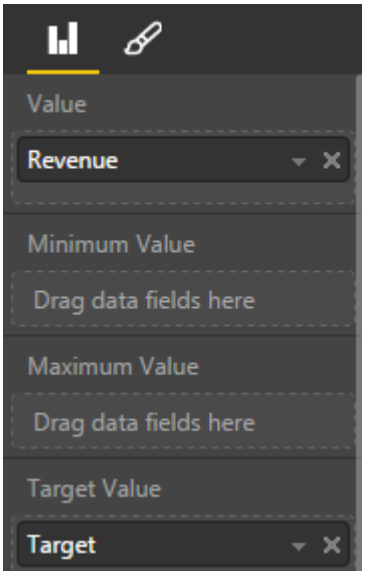
4. In the **Fields** list, check the **Revenue** field and **Target** field. If necessary, move the visualization down so it doesn't overlap with the existing one.

5. Change the visualization type to **Gauge**.

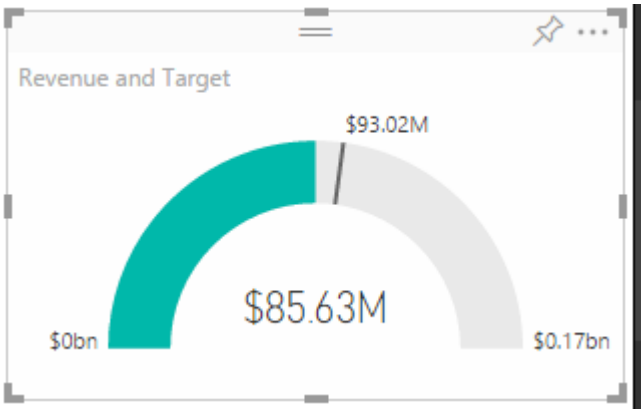
6. Verify that your visualization looks as shown below.




7. To configure a target for the gauge, drag the **Target** field from the **Minimum Value** drop zone to the **Target Value** drop zone.

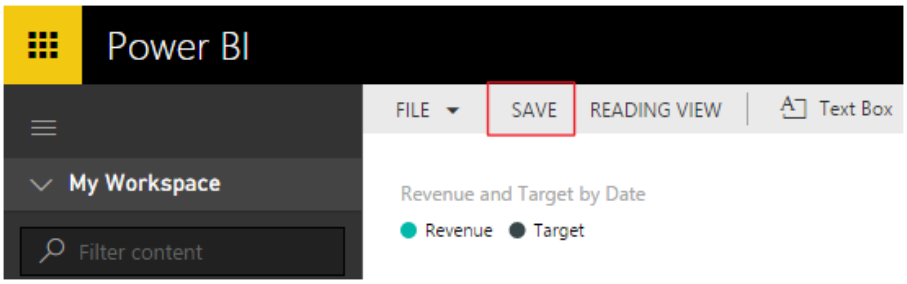



8. Your visualization should look as shown below.
   Note that Power BI will automatically set the **Maximum value** for the gauge as twice the **Value** field.



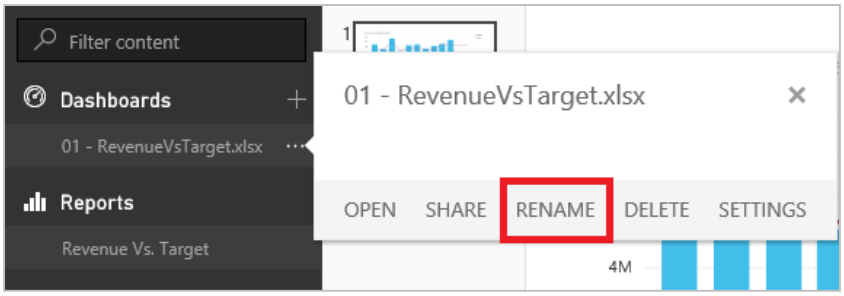

9. Pin the gauge to your dashboard.

10. Click **Save**.




## Renaming and organizing your dashboard

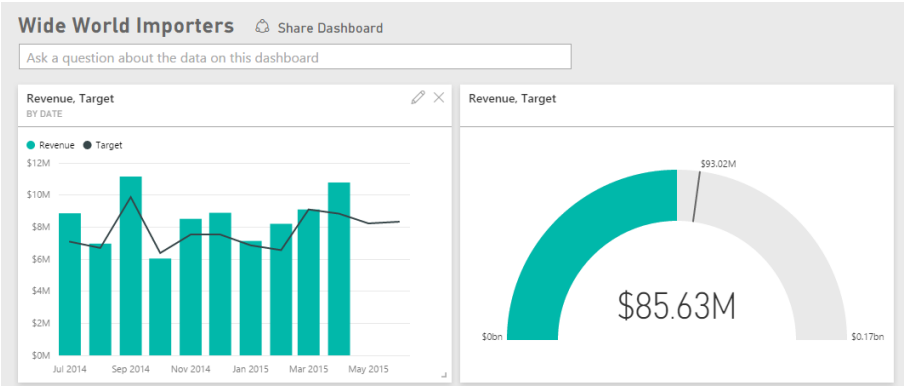
1. Right-click **01 – RevenueVsTarget.xlsx** dashboard, then select **Rename**.




2. Enter **Wide World Importers** as the new name for your dashboard and hit **Enter**.

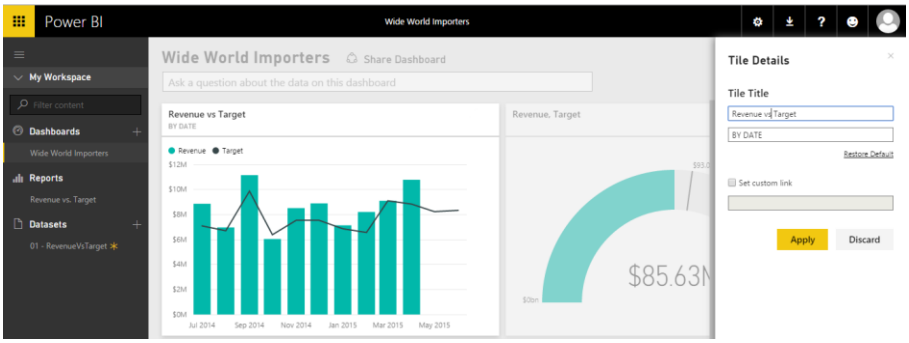
3. To delete a tile from your dashboard, hover over the tile and click **x** icon on the top right corner.

4. Move tiles by dragging and dropping them to a new location on the dashboard.

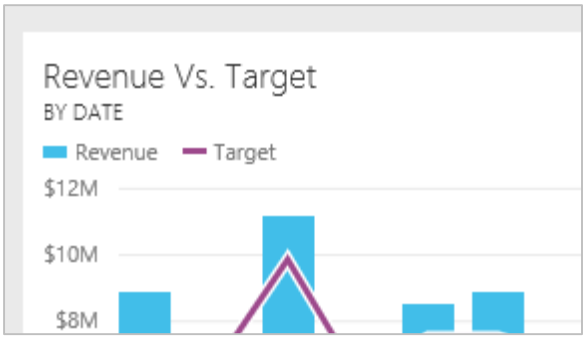



5. To rename the **Revenue, Target** tile, hover over the chart in your dashboard and click on the **Pencil** icon  to edit the title.

6. Power BI will open a side bar at right side of screen to Edit Title. Change the name to **Revenue Vs. Target** in the **Edit Title** box and press **Enter**. Close the window by clicking on the x in the top right corner.




7. The title of your tile will be updated.



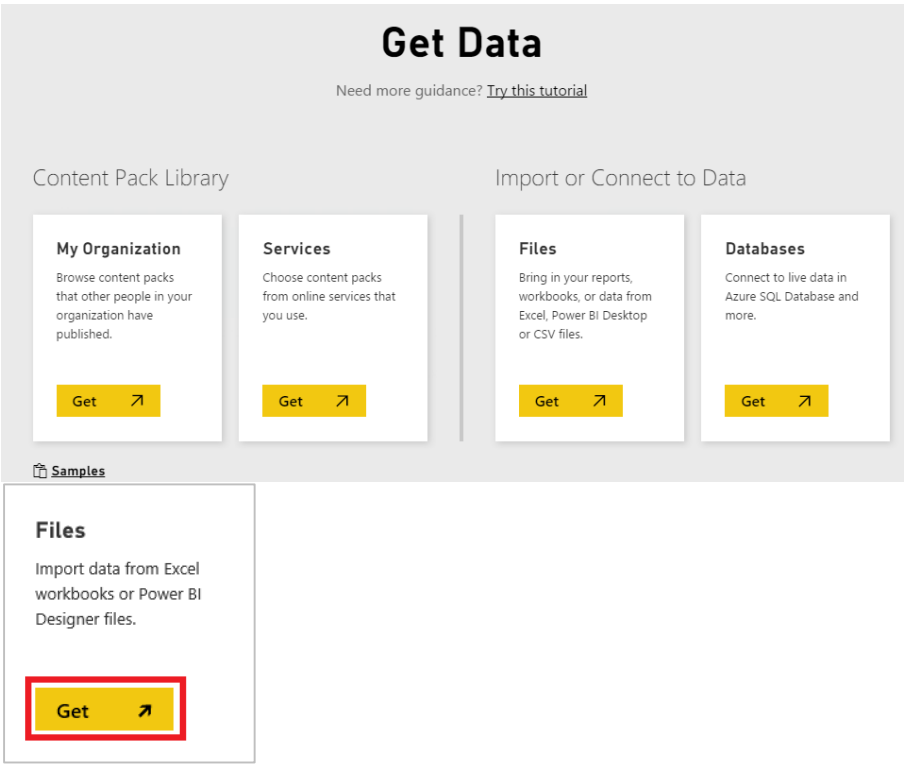

## Uploading a Power BI Desktop file to your dashboard

In this next task, you will load a set of reports from an existing Power BI Desktop file.

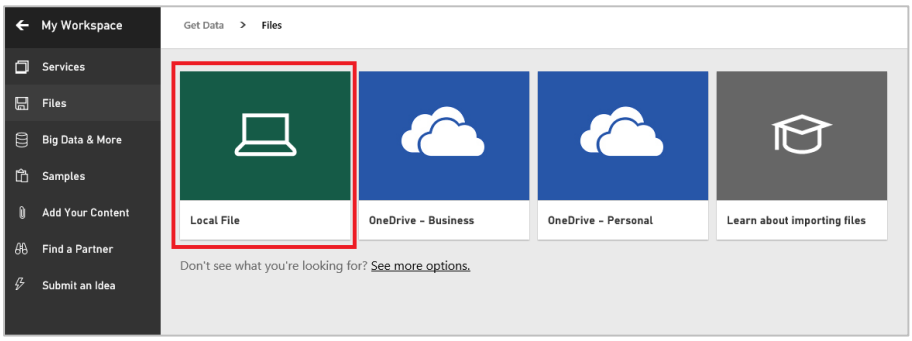
Note: You will learn how to create reports and model data using Power BI Desktop later in the hands on lab.

1. To import reports from a Power BI Desktop file, click **Get Data**.


2. Click **Get** button on **Files** Tab.




3. Click on Local File tile.



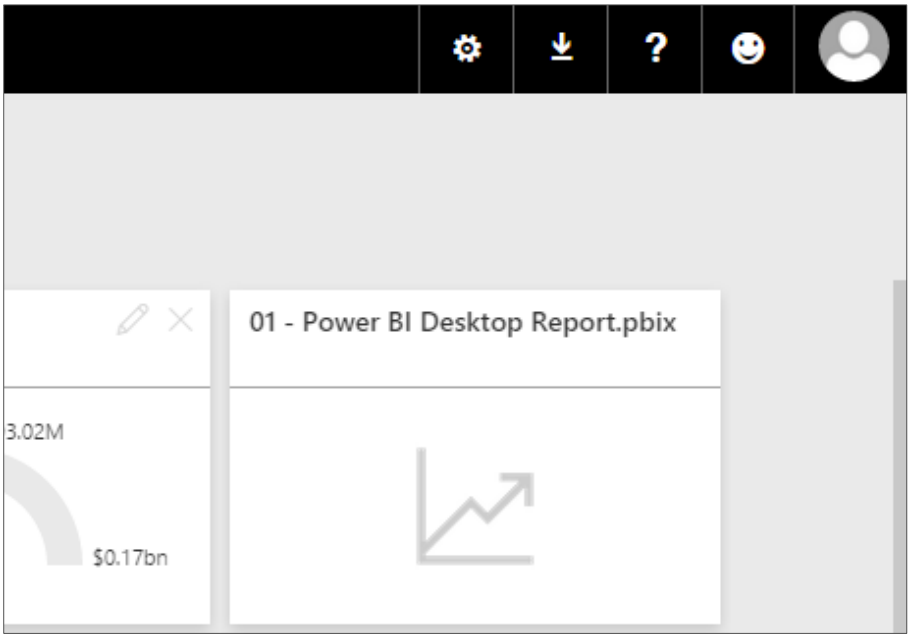

4. Browse to the **01 – Power BI Desktop Report.pbix** in the assets folder for the labs**.**

5. Click on **Open.**

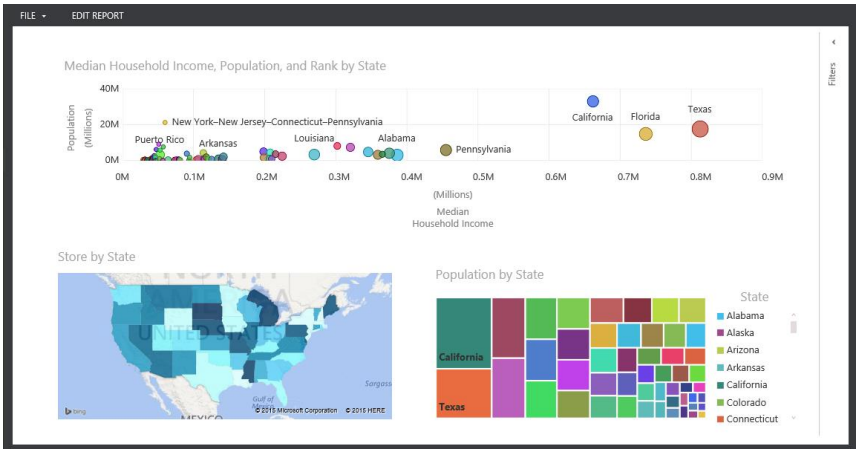
6. Click on **Connect** at the bottom of the page, to upload the Power BI Desktop file.

7. The file will be automatically associated with currently selected dashboard (**Wide World Importers**) and is displayed as a tile on the dashboard.

8. Click on the **01 – Power BI Desktop Report.pbix** tile in the dashboard.

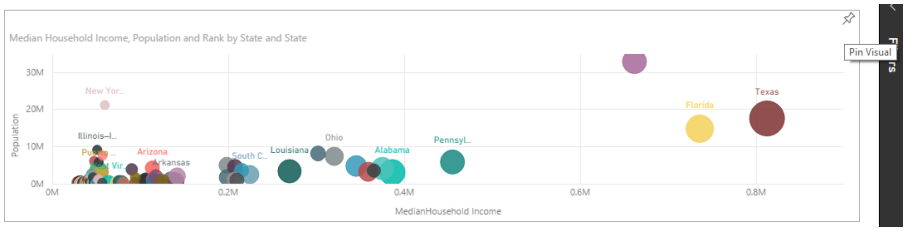


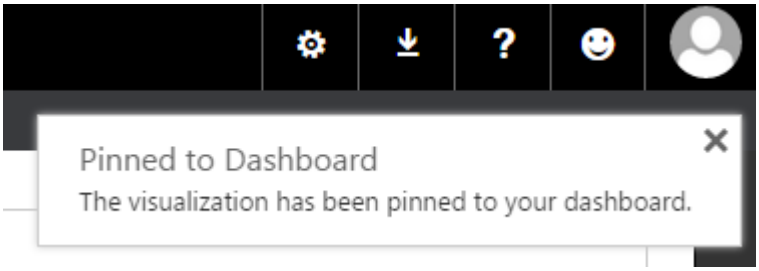

The first report in the Power BI Desktop file will be displayed.




## Pinning tiles to your dashboard

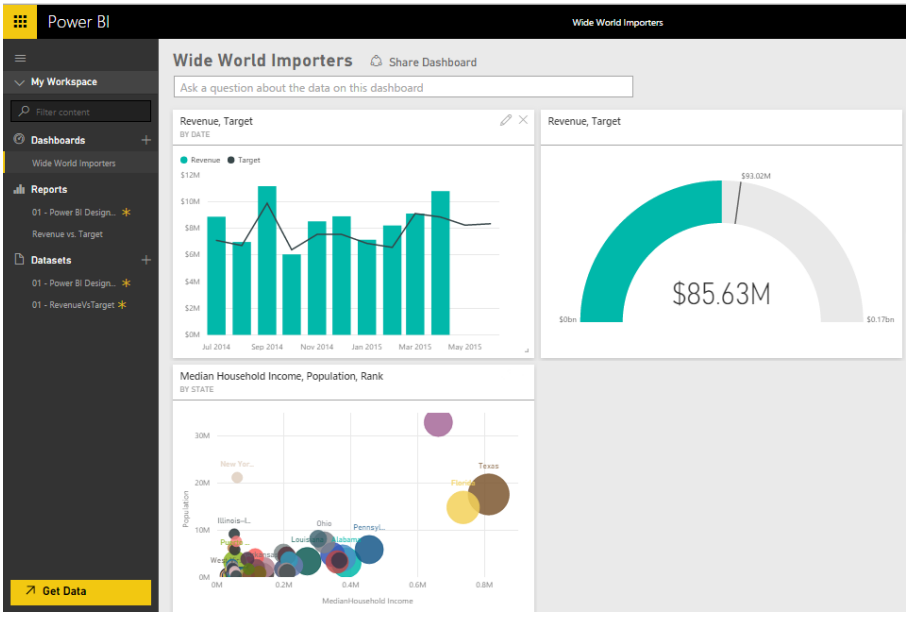
1. Select the visualization **Median Household Income, Population, and Rank by State** then click the **Pin** icon to pin the visualization to the dashboard. You will see a confirmation message displayed in the top right corner.




2. Select **Wide World Importers** from dashboard list.

3. Rearrange your tiles by dragging them to different area on your dashboard, as shown below.




## Summary

Power BI provides the ability to combine visualizations from various data sources into a single dashboard. Now that we have learned how to create dashboards from Excel data and a Power BI Desktop file, let us explore some other powerful features of Power BI.

# 2. Exploring data with Power BI Dashboard

## Exploring data with Power BI Dashboard

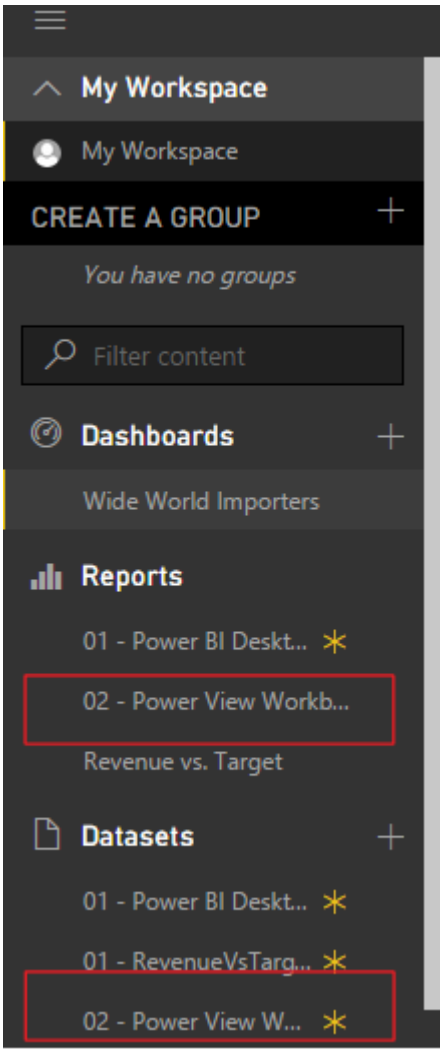
In this lab, you will explore different kinds of visualizations. This will involve uploading visualizations from an existing Excel file, working with some advanced visualizations, and exploring datasets. You will also work with the Q&A feature to quickly create visualizations in your the Power BI dashboard.

## Using a Power View report in your Power BI Dashboard

1. In your Power BI browser window, select **Get Data**, then click Get button on **Files tab**, select **Local File** tile, and browse to the Excel file **02 - Power View Workbook.xlsx** located in the assets folder for the labs.

2. Click **Open** to upload the file.

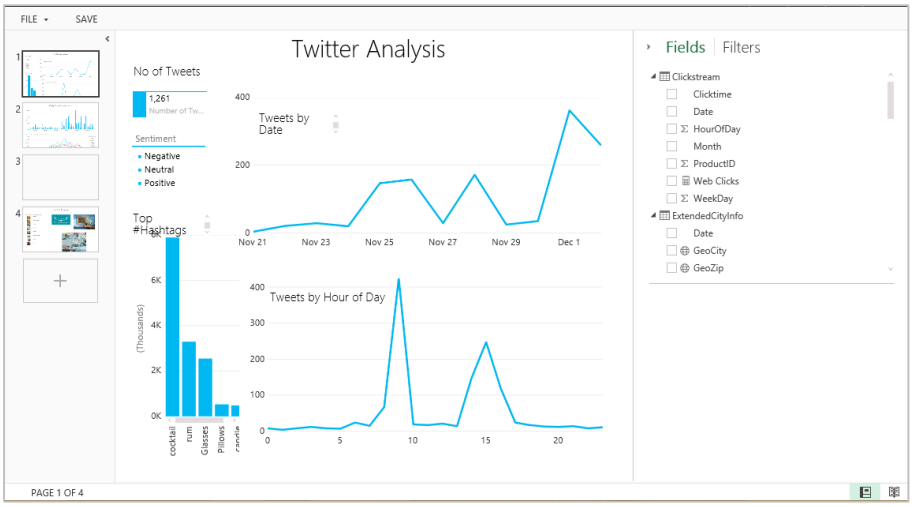
3. Notice the upload creates a new dataset and a new report in Power BI navigation pane.




4. Select the **02 - Power View Workbook** report.

5. Select **Edit Report**.

6. You will see four pages in this report, you can use the navigation at the bottom of the screen to switch between reports.




7. Select **Page 1** of the report.

8. Click on the **Tweets By Date** visualization, and pin it to the dashboard. Notice the uptick in tweets as the holiday season approaches.

9. Select **Page 3** of the report, titled **Web vs In-Store Interactions**

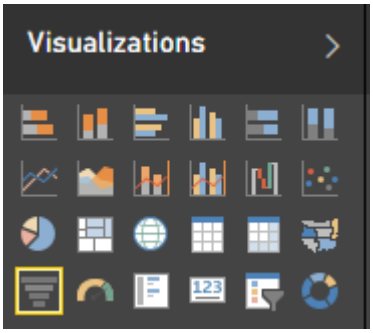
10. Pin the visualization titled **Web Hits by Geographic Location** to your dashboard.

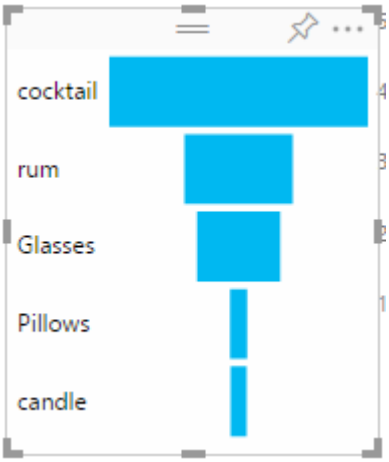

## Changing a visualization type

1. Select **Page 1** of your report, titled **Twitter Analysis**

2. Select the **column chart** titled **Top #Hashtags**

3. Select the **Change visualization type icon** next to the chart and select **Funnel**

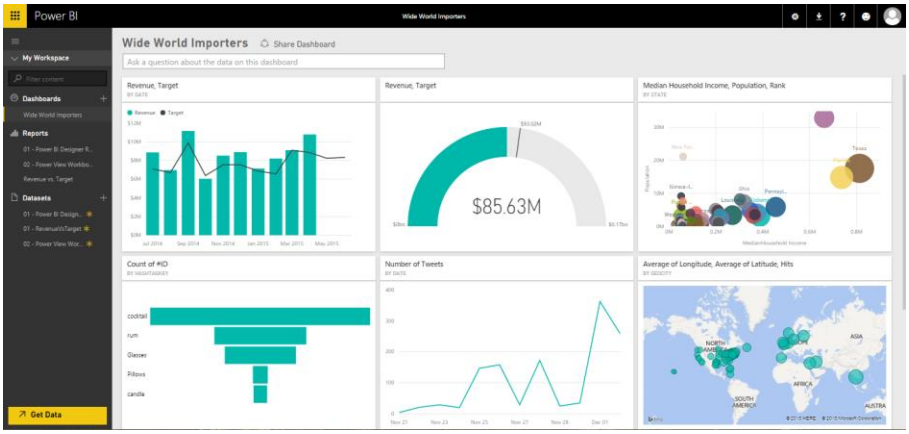



4. Using the pin icon, add this visualization to the dashboard.

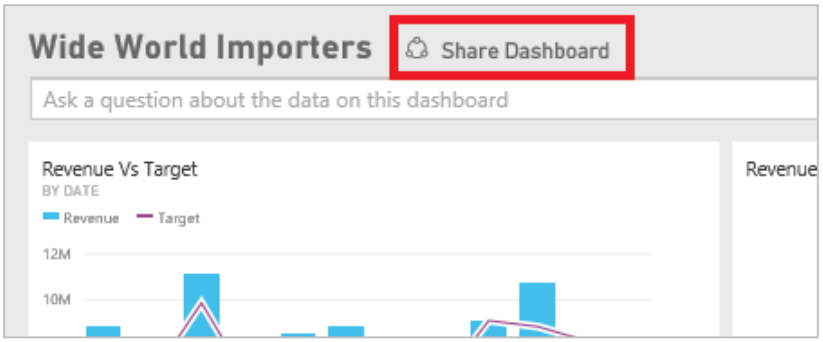
5. Click **Save** to save your report changes.

6. Go back to your **World Wide Importers** dashboard and rearrange the tiles.

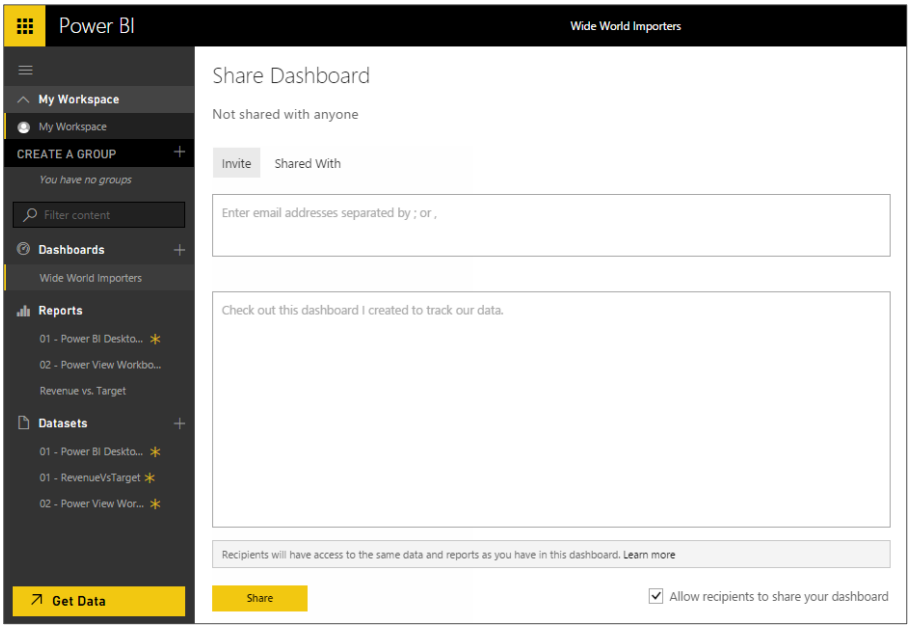


## Sharing your dashboard with others

1. To share your dashboard with others, hover over the name of the dashboard, and then click on the ellipses icon next to the name. You can also click on **Share** next to the dashboard title.




2. The **Share Dashboard** page is displayed where you can add the email addresses of the people you want to share your dashboard with.




A few important points about sharing:

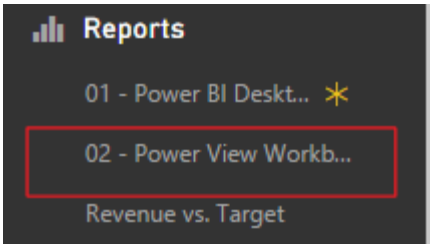
- You can share your dashboards with people in your organization.
- They will have to be signed up for Power BI.
- They will be able to see your dashboard and interact with your reports in Reading View. They will not be able to create new reports or save changes to existing reports.

- They will even see the changes you make (once you save those changes).
- They will not be able to see or download the dataset or use any of the data refresh operations.

3. Go back to the main page by selecting the back arrow.

## Adding an image to the dashboard

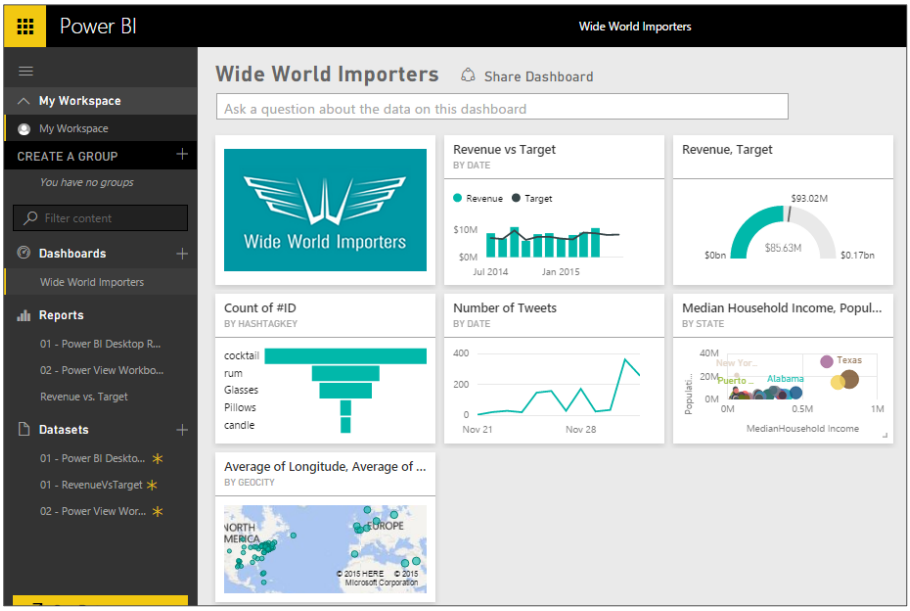
1. Select the **02 – Power View Workbook** report.




2. Using the page navigation at the bottom of the screen, go to the page titled **Product Images** in the report.

3. Pin the image with the **Wide World Importers** logo to your dashboard.

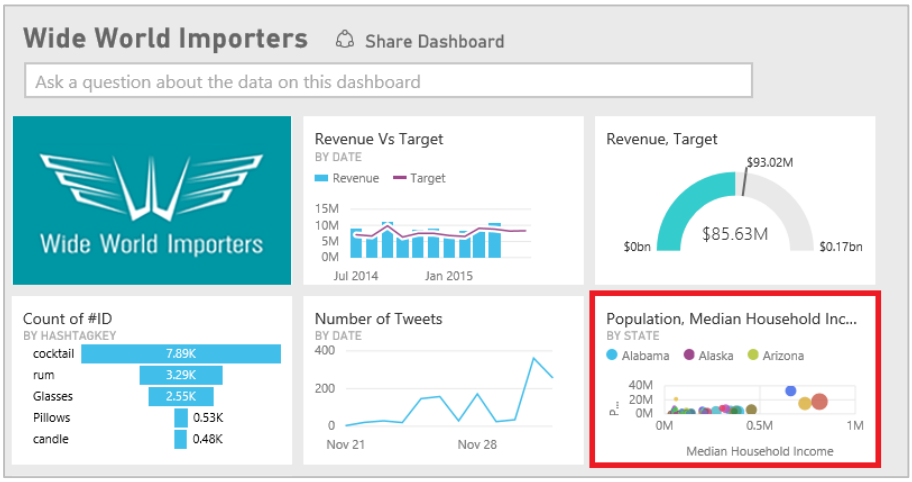
4. Return to the dashboard, **resize** and **rearrange** the tiles to display all the pinned visualizations as shown below.




## Applying filters on datasets

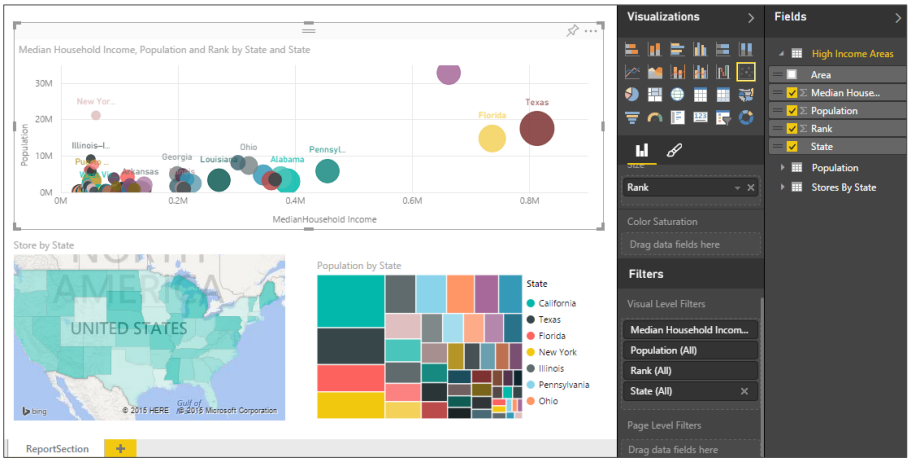
In this task, you will be able to filter out data based on a condition.

1. Select the scatter chart titled **Population, Median Household Income**. This will open the report in the Power BI Desktop file.



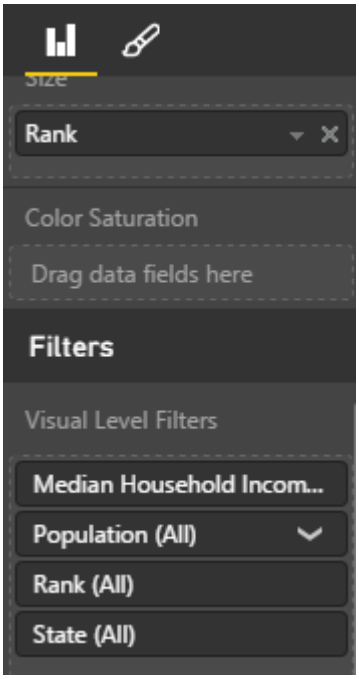

2. Select **Edit Report**.

3. Select the scatter chart on the report page.

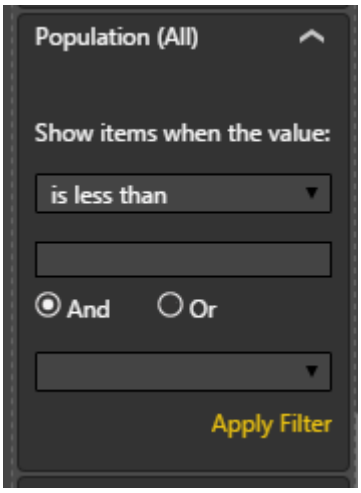



4. The fields that were used to create this report are displayed on the right.

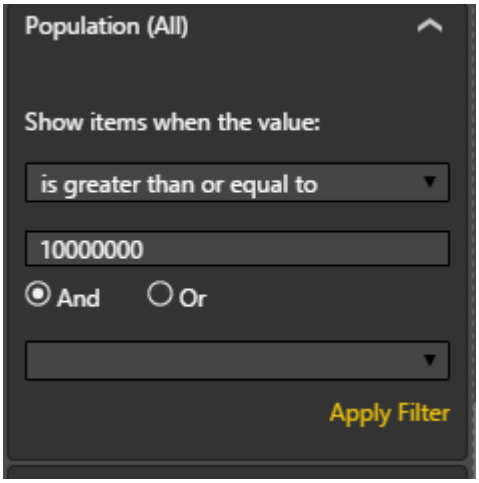
5. The **Filters** tab will be displayed.




6. Hover over to the Population filter, and click to expand filter control.

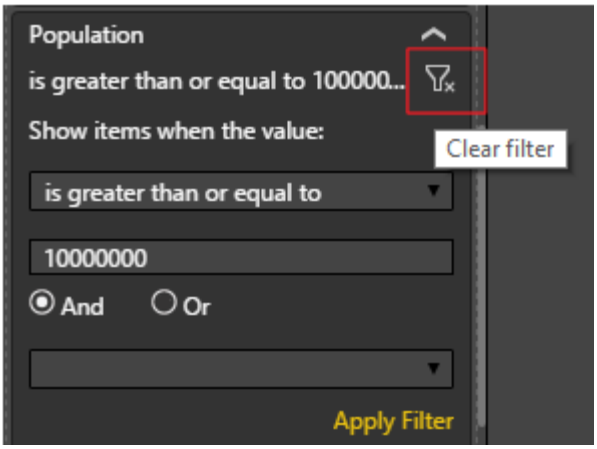



7. Drop down the list below **Show items for which value:** and select **is greater than or equal to**. In the input field underneath enter 10000000 to display only the states with population above 10 million. Click **Apply** to apply the filer.




8. The bubble chart now shows the four most populous states in the image below.


9. This visualization can also be pinned to the dashboard, however we are going to now remove the filter and return to its original form. To **remove** the **filter** simply click on the **Clear Filter icon** in the top right corner.




10. Click on the Power BI icon to go back to the main page and click **Don't Save** to ignore your changes.

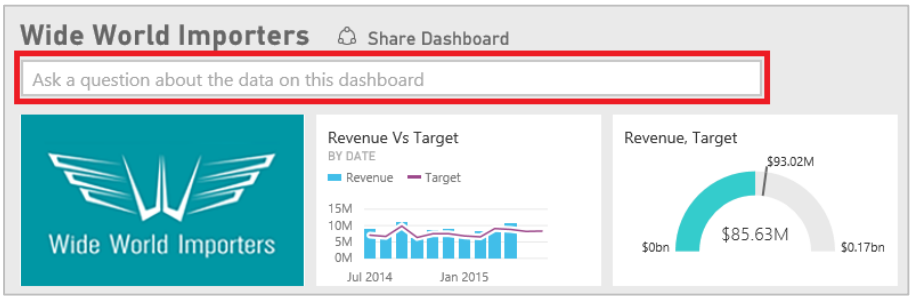
## Q&A Overview

Q&A is a natural language "Question and Answer" tool. In this exercise, you will learn to use Q&A to explore your Excel data using intuitive, natural language capabilities and receive answers in the form of charts and graphs.

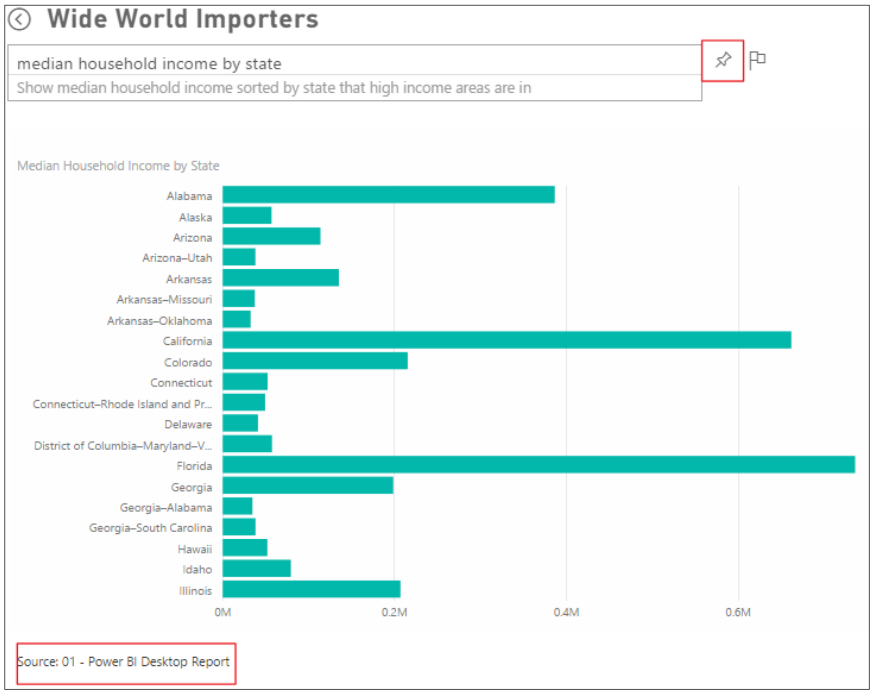
### Formulating a question about the data on this dashboard

1. Select the **Wide World Importers** dashboard

2. Click in the **Ask a question about the data on this dashboard** input field, on the top of the dashboard.




3. Type **median household income by state** in the input field. As you start typing, notice a **bar chart** starts to form immediately and the result is displayed as you finish typing your question.



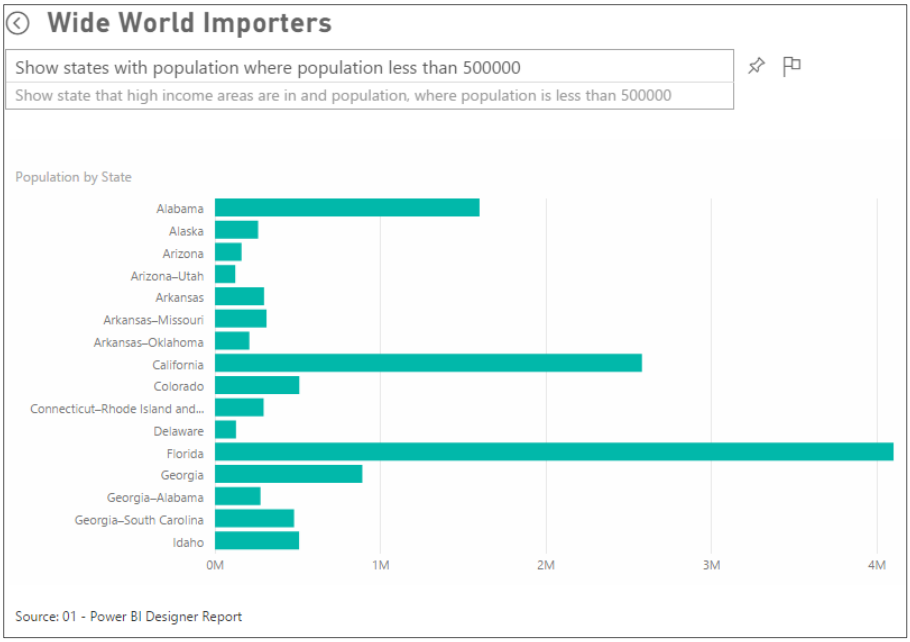

Note: Q&A displays the source of the data for the result. In this case, the data is coming from the report **01 – Power BI Desktop Report**.

4. In the Q&A input field add **sorted by income desc** at the end of the question to sort the bar chart.

5. To pin the result to your dashboard, click the pin icon next to the chart.

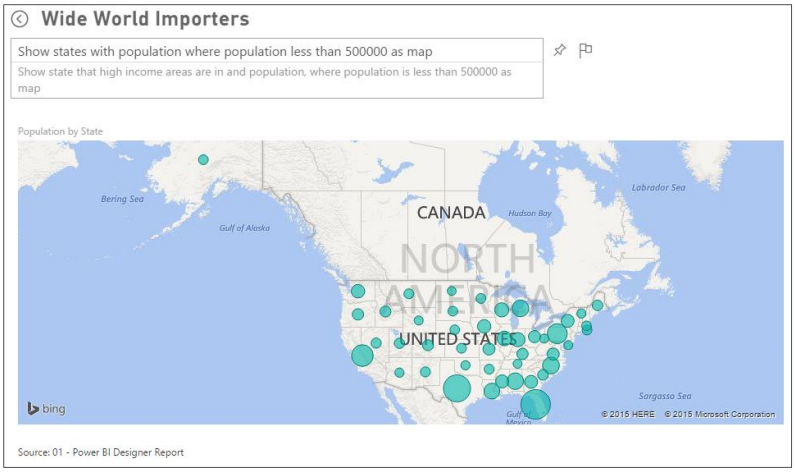
## Creating a map visualization with the Q&A

1. In the Q&A input field, type **Show states with population where population less than 500000**.



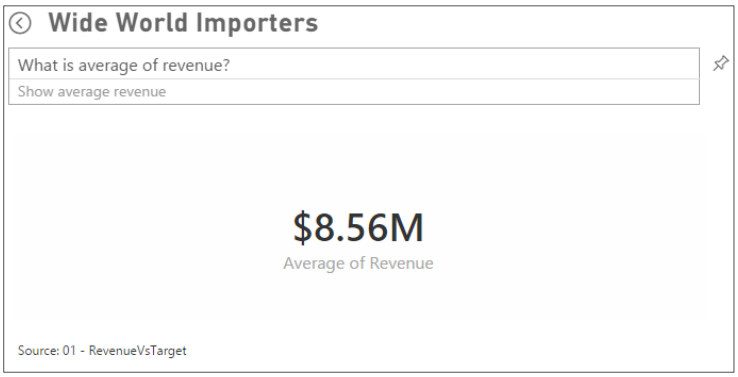

The use of **where** keyword can be used to filter data. The states with the population less than 500000 is displayed as a bar chart.

2. Now add **as a map** at the end of your question. The visualization changes to a map displaying states that satisfy the filter criteria.



## Displaying totals and averages with Q&A

1. In the Q&A input field, type **what is the average of revenue**. The average value for revenue is displayed.




   Notice as you are typing your question, Q&A will display suggestions to help you formulate your question.

2. Type **How many stores are there?** in the Q&A box. The sum of stores is displayed.


## Summary

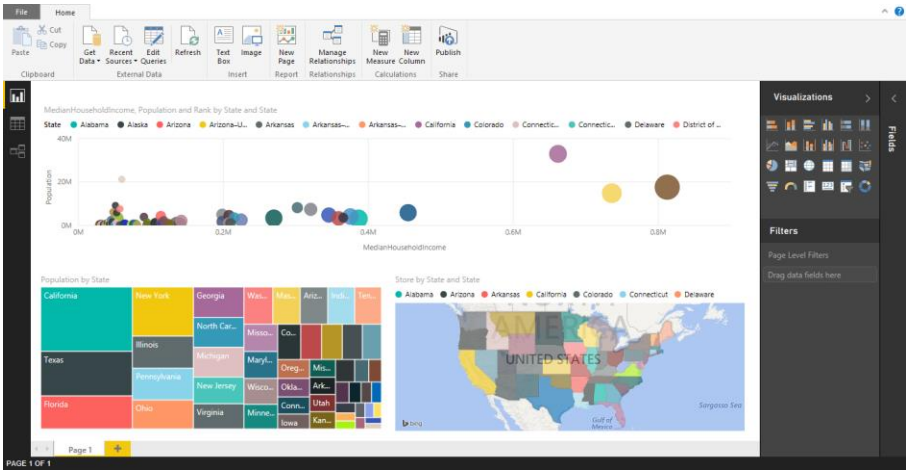
In this module, you explored the Power BI dashboard. You also learnt about different features of Power BI like Q&A, how to apply filters, change and sort visualizations, share your dashboard and insert images. The resulting dashboard is visually appealing and has meaningful data insights.

# 3. Building reports for Power BI Desktop

## Building reports for Power BI Desktop

In this module, you will create a Power BI Desktop report that imports data from a web-based data source as well as several file data sources. You will then enhance the data using query techniques and defining relationships. Finally, you will create reports that will used in Power BI dashboards.

The final report will look as shown below.



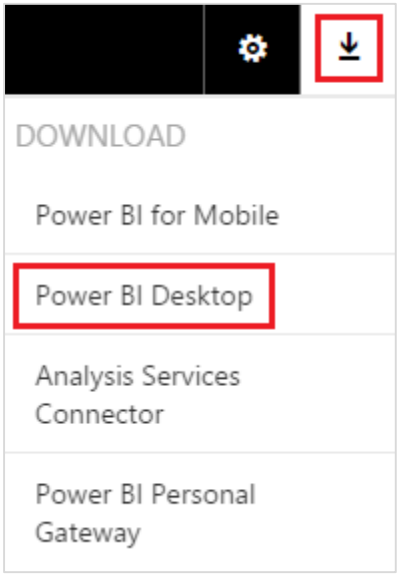
## Downloading and installing Power BI Desktop

1. If you don't have Power BI Desktop installed on your machine, go to http://powerbi.com, then select the **Downloads** link.

2. **Download** and install Microsoft Power BI Desktop

   You can also download the Power BI Desktop from the

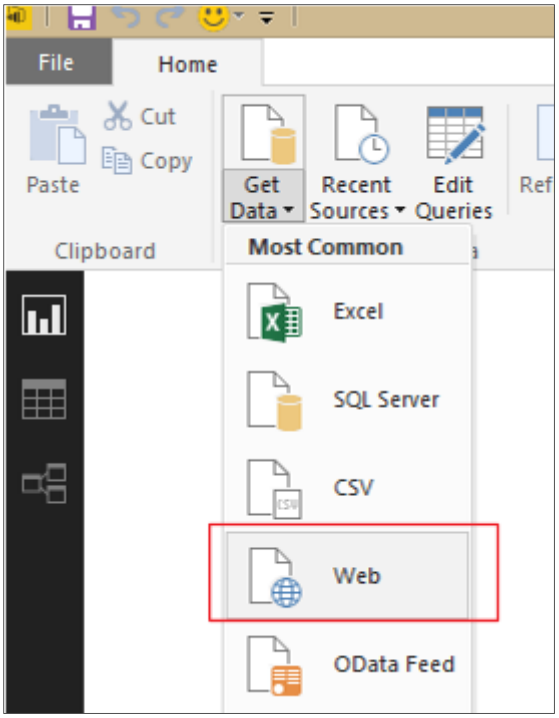
   **Download** menu (download icon) in the top right corner of your screen:



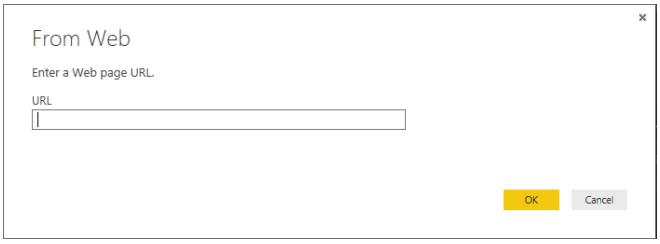
## Importing data from a web based data source

1. Launch **Power BI Desktop** on your machine.

2. In the startup screen, select **Get Data** (or from the ribbon select **Get Data -> More**).

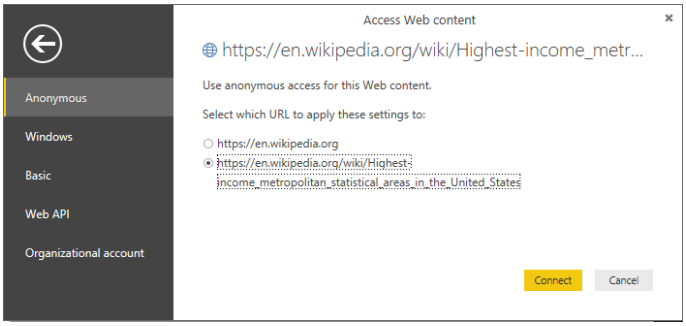



3. In the **From Web** dialog box, type or paste the following Url: http://en.wikipedia.org/wiki/Highest-income_metropolitan_statistical_areas_in_the_United_States

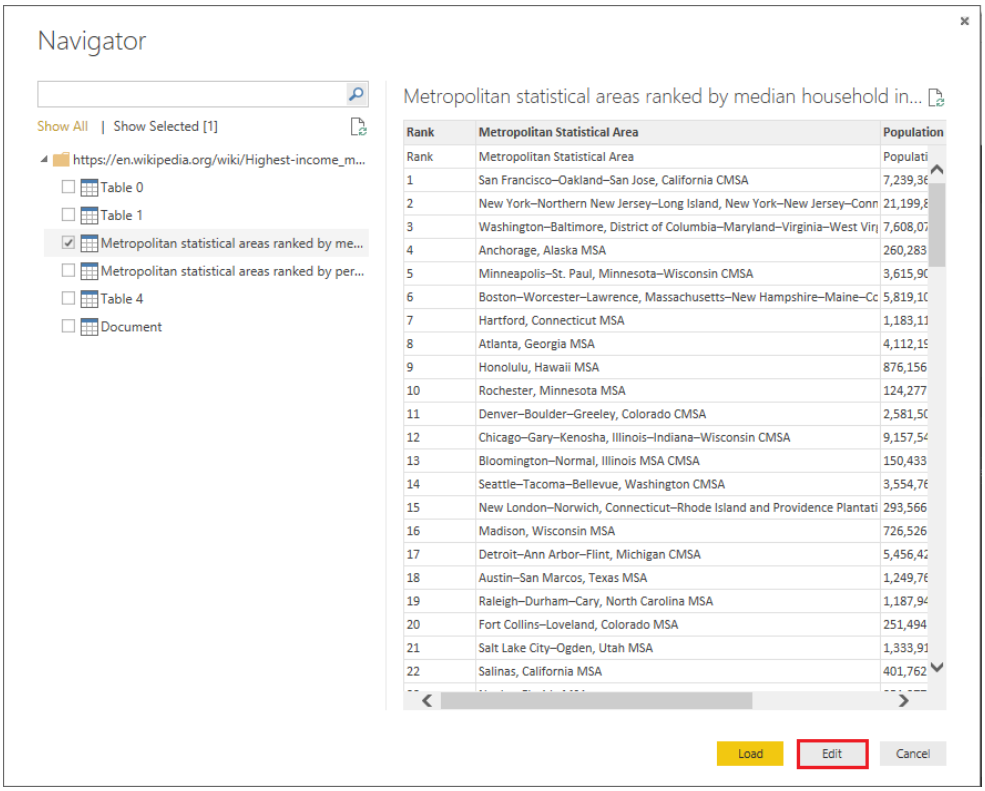



4. Select **OK**.

5. Choose correct URL from "**Access web content**", click on "**Connect**"




6. The **Navigator** screen will be displayed. Select the first item with the title "**Metropolitan statistical areas ranked by median household income**" and select **Edit**.



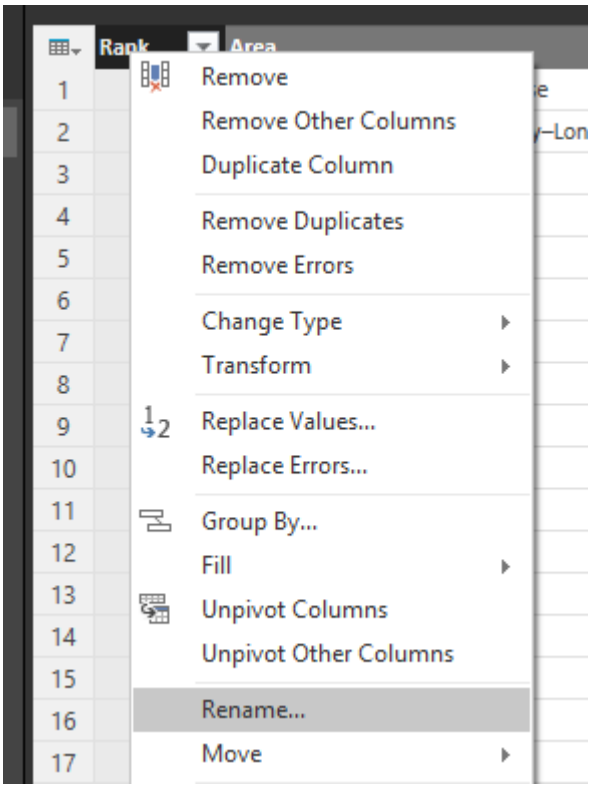

## Applying transformations to the data set

1. Notice how in our data set, the column headers show up as the first row. From the **Home** tab of the ribbon, select **Use first row as headers**.

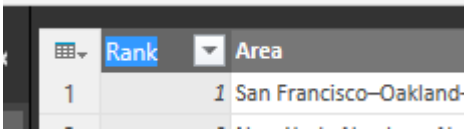

Note:

- *If column header contains newline character then it will not display complete name in header. Hence, rename all column headers to remove unwanted characters. In current demo, header **Median** contains newline character. Hence, not showing its complete name **Median Household Income.***

2. Right-click on the **Rank** column and select **Rename.**




3. Type **Rank** in highlighted area.




4. Follow above steps 2 and 3 to rename remaining headers.

   Change Metropolitan Statistical Area to **Metropolitan Statistical Area,** Population to **Population** and Median Household Income to **Median Household Income.**

**Before Rename**

| Median |
|---|
| $63,024 |
| $59,799 |

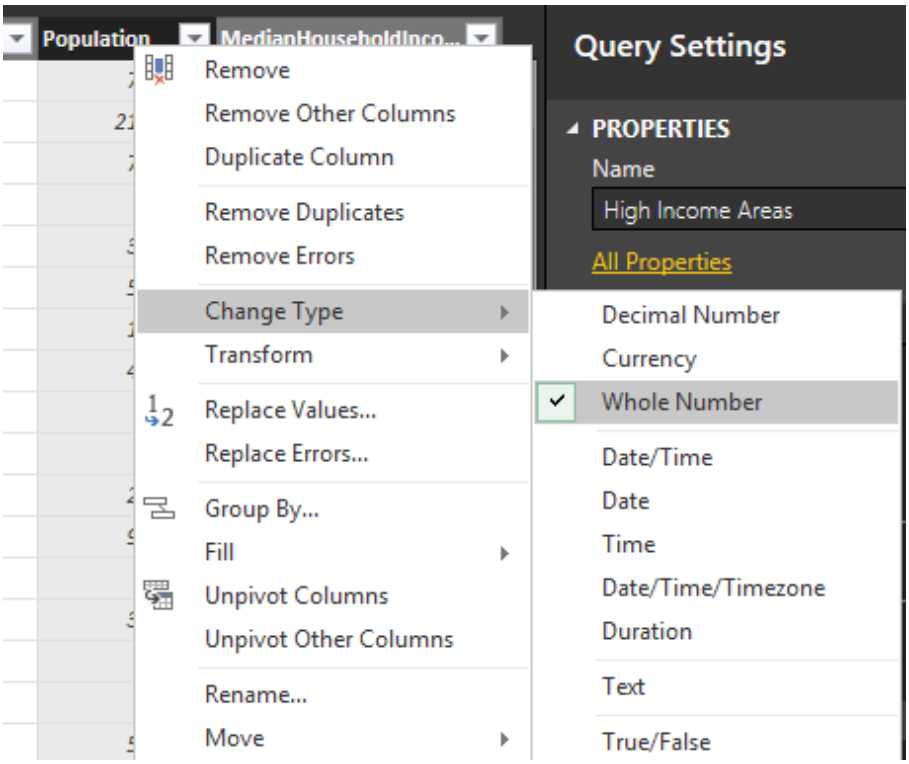
**After Rename**

| Median HouseHold Income |
|---|
| $63,024 |
| $59,799 |

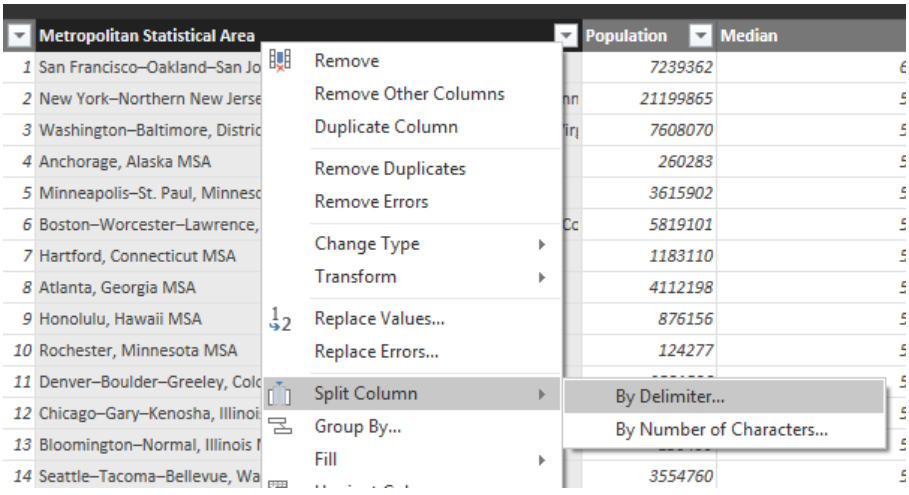
5. Right-click on the **Rank** column and select **Change Type -> Whole Number**.

   Right-click on the **Population** column and select **Change Type -> Whole Number**.

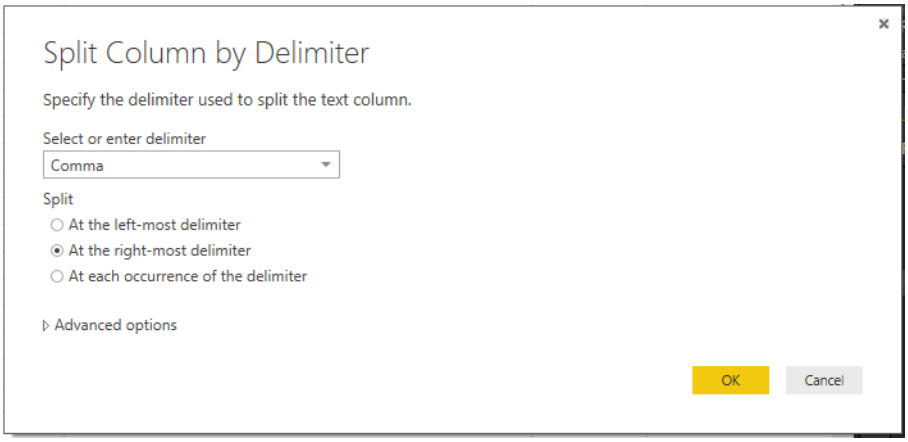
   Right-click on the **Median** column and select **Change Type -> Whole Number**.




6. Right-click on the **Metropolitan Statistical Area** column and select **Split Column -> By Delimiter**.




7. Select or enter delimiter as **Comma**, and split **At the right-most delimiter**

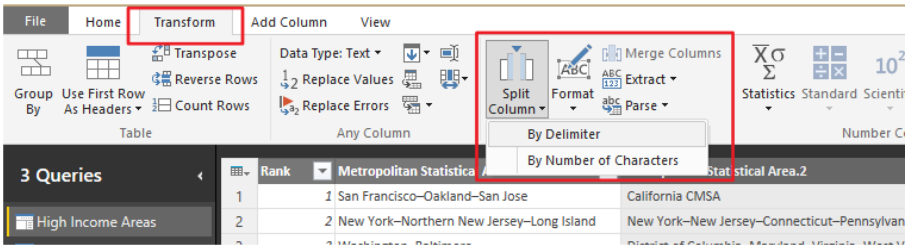



8. Click **OK** to split the column.

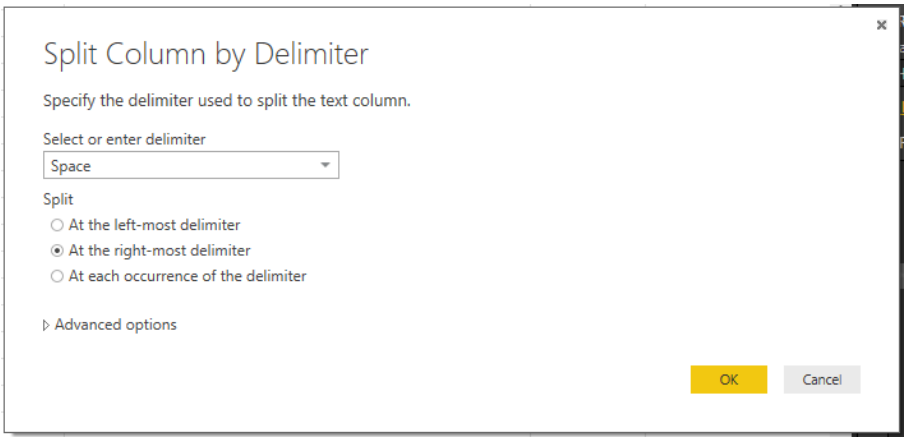
9. Select the **Metropolitan Statistical Area.2** column

10. Select the **Transform** tab in the ribbon

11. Select **Split Column -> By Delimiter**.

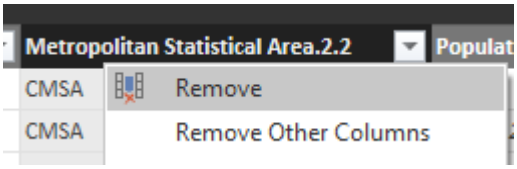



12. Select or enter delimiter as a **Space**, and split **At the right-most delimiter**




13. Click **OK** to split the column.

14. Right-click on the **Metropolitan Statistical Area 2.2** column, and select **Remove**




15. Right-click on the **Metropolitan Statistical Area 2.1** column, and select **Rename**.

16. Renaming the column to **State**.

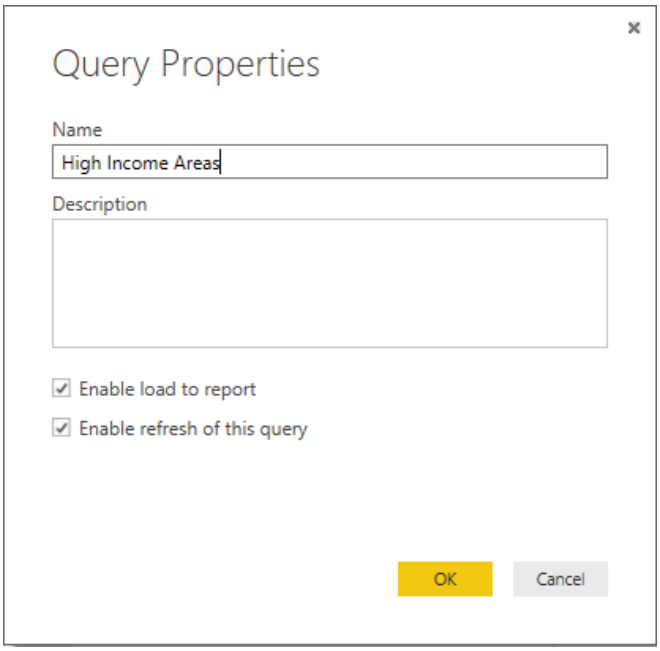
17. Right-click on the **Metropolitan Statistical Area 1** column, and select **Rename**.

18. Rename the column to **Area**.

19. Right-click the query name **Metropolitan statistical areas ranked by median household income**, and select **Properties**.

20. Renaming the query to **High Income Areas**.

21. Select **OK**.

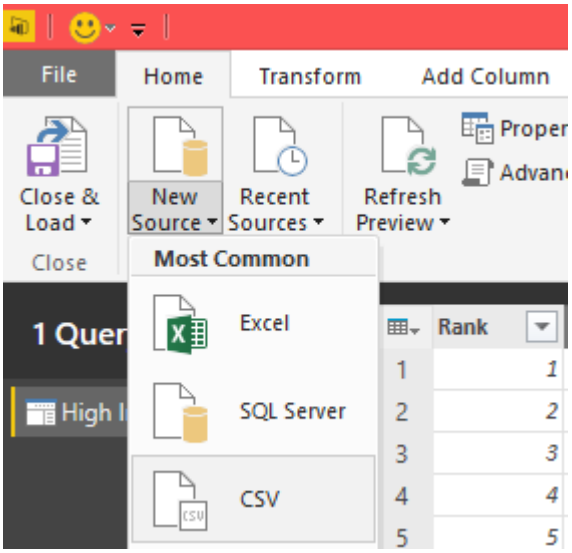



## Getting data from a file

In this task, you will import data from file data source.

1. Select the **Home** tab on the ribbon.

2. Select **Get Data -> CSV** and browse to the assets folder for the labs.

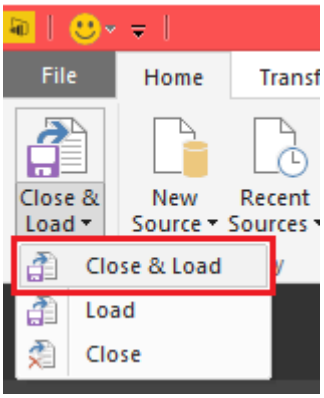



3. From the **CSV Files** folder, select the file **StoresByState.csv**, then select **Open.**

4. Select **Get Data -> CSV** and browse to the assets folder for the labs.

5. From the **CSV Files** folder, select the file **Population.csv**, then select **Open**.

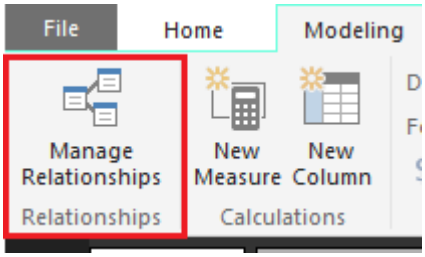
6. Once the data is loaded, select the **Close & Load**



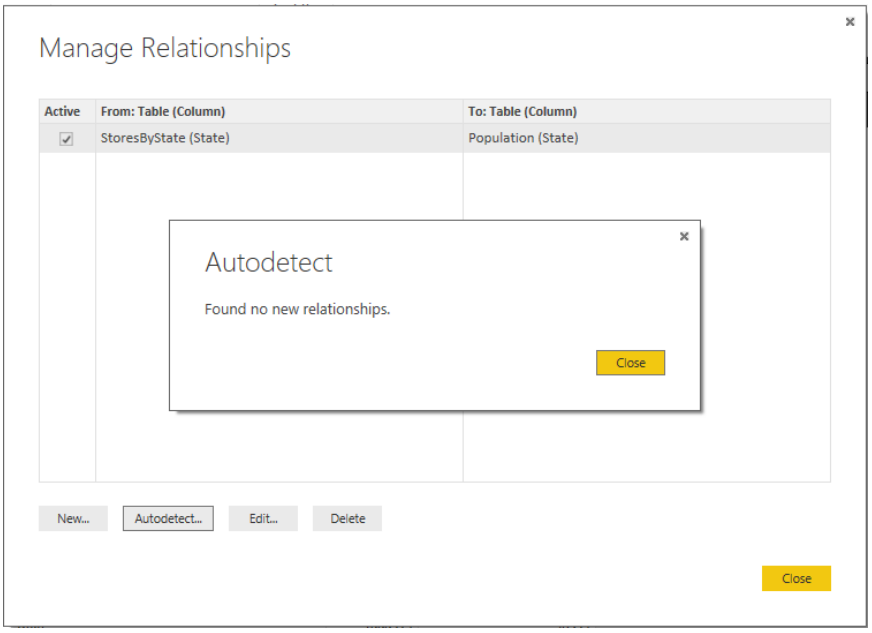

Note: The data model will be loaded for your report.

## Managing relationships and creating visualizations

1. In the ribbon, on the **Home** tab, click on **Manage** in the **Relationships** group.

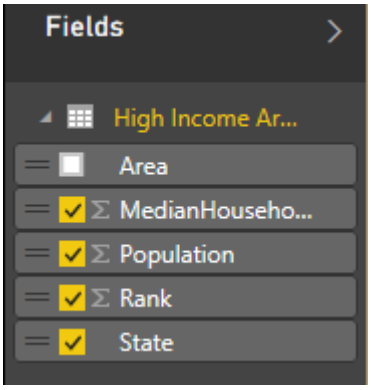



2. Click on **AutoDetect** in the **Manage Relationships** dialog.

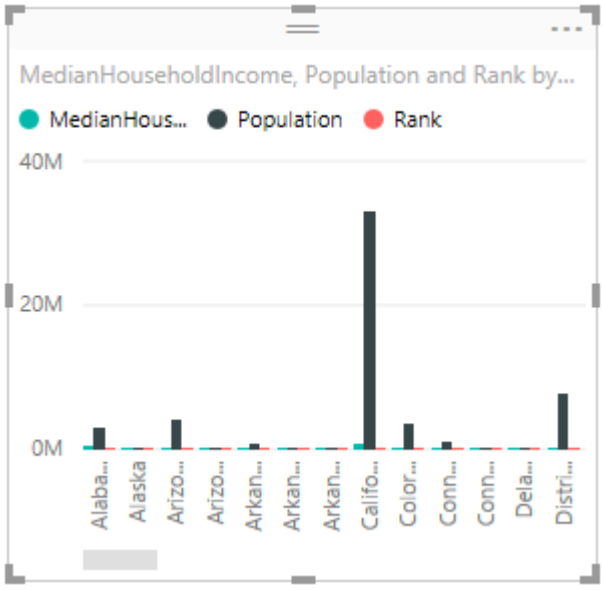



3. Confirm the relationship that was detected and **Close** the dialog.

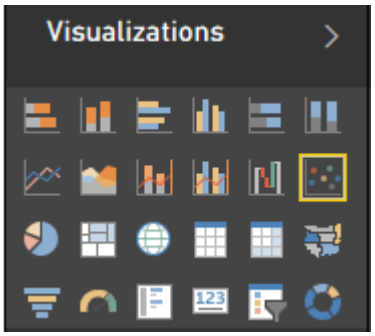
4. In the field list on the right, from the **High Income Areas** data set, select the **Median Household Income**, **Population**, **Rank**, and **State** fields.



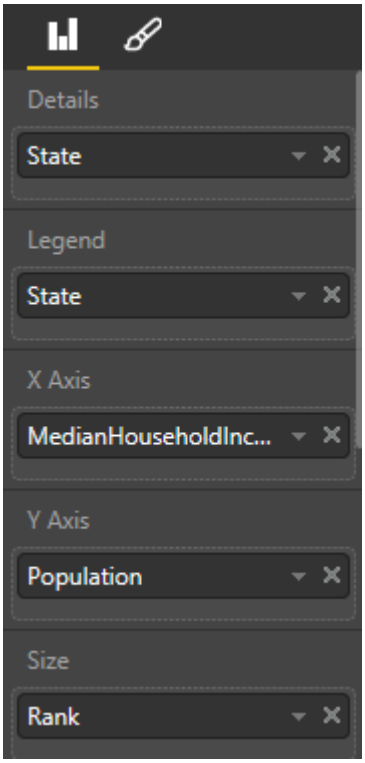

5. A column chart will be displayed on the report page.



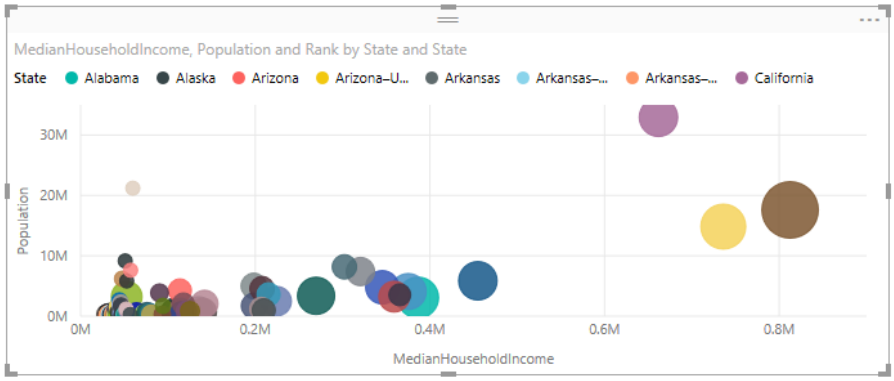

6. From **Visualizations** Control **change visualization type** to a **Scatter Chart**.




7. Drag and drop **State** field into the **Legend** property of the Visualization

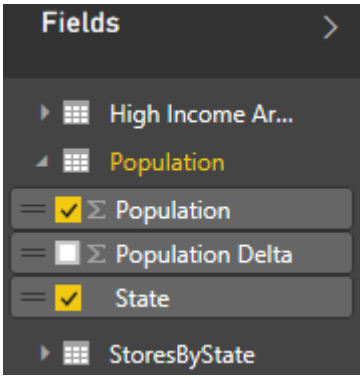



8. Resize the chart so it looks as shown below.




9. Click in the blank area below the chart to add another chart to the report.

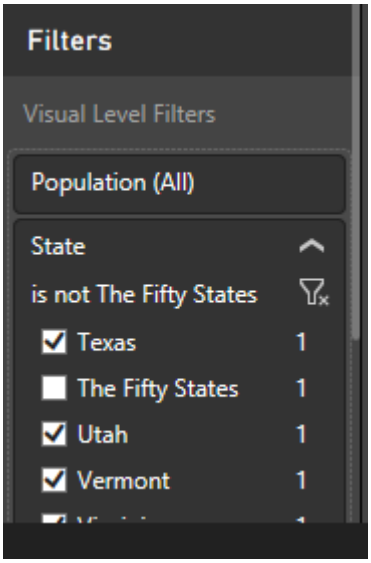
10. In the field list on the right, from the **Population** data set, select **Population** and **State**




11. A column chart will be displayed on the report page. Move it so that it does not overlap with the existing scatter chart.

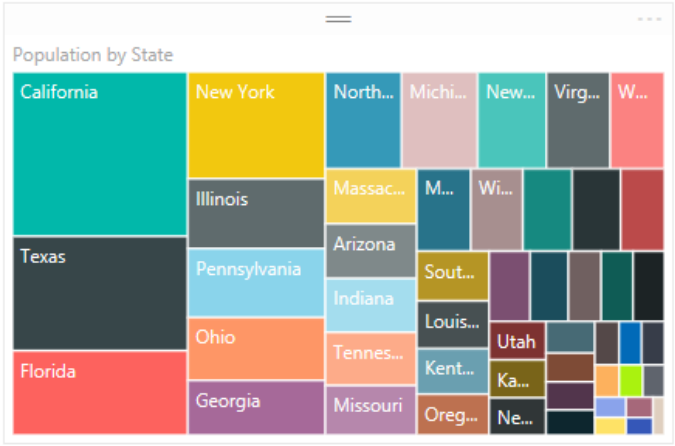
12. Select the **Filters** tab in the visualizations window and then within the **Filters** tab click the **Visual Level Filters** tab.

13. Check the option **All** and then scroll down to **The Fifty States** and deselect **The Fifty States**




14. From **Visualizations** change the visualization type to **Treemap.**

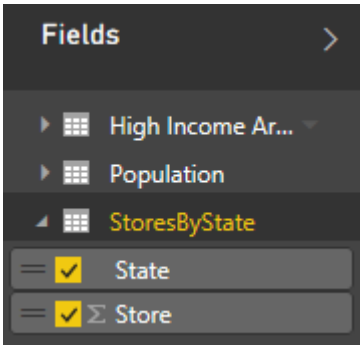
15. Resize the chart so it looks as shown below.



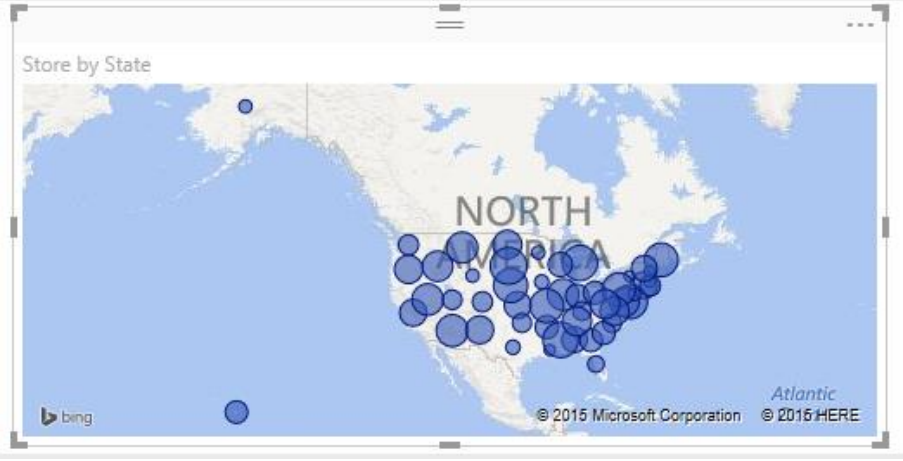

16. Resize the chart further to about half of the report page width to make room for another chart.

17. Click in the blank area of the report page...

18. In the field list on the right, from **Stores By State** data set, select **State** and **Store**

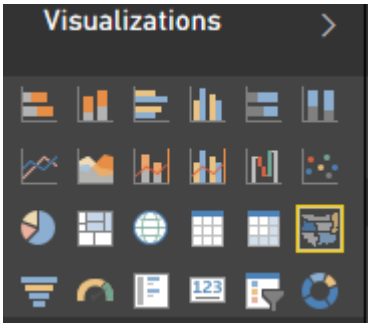



19. A map will be displayed on the report page. Move and resize it so that it does not overlap with the existing charts.

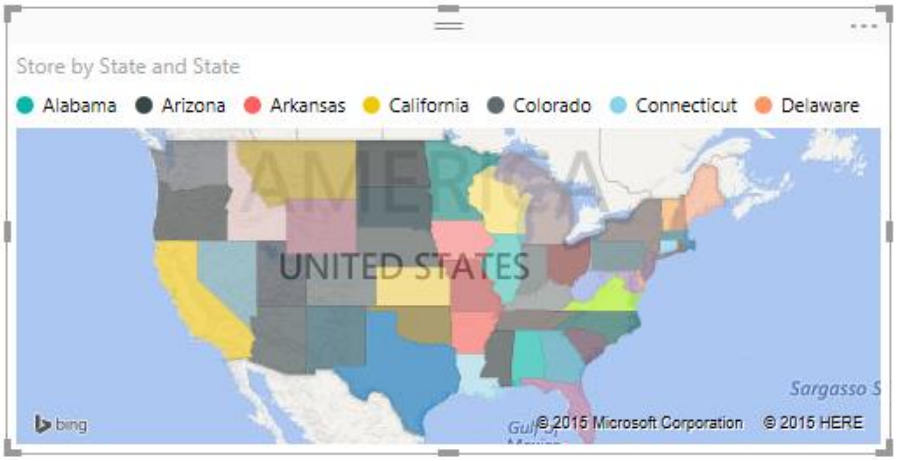



20. Go to the **Filters** tab and go to **Visual Level Filters**, check the option **All** for **State** and then scroll down to **Alaska** and **Hawaii** and deselect **Alaska** and **Hawaii**.

21. Change the visualization to a **Filled Map**.




22. Drag and drop **State** field into **Legend**




## Finishing Up

1. To save the report, go to the **File** menu, and select **Save**.
2. Save the report to the assets folder for the labs on your machine.
3. Close Power BI Desktop.

# 4. Creating content for Power BI Dashboard using Excel

## Creating content for Power BI Dashboard using Excel

### Using Power Query in Excel 2013

In this lab, you will use Power Query to load data into the workbook data model. The workbook data model will be extended with SQL Server data in the following lab, and then used as a source for Power View reporting for web and twitter analytics in a later lab.

You will learn how to:

1. Source and transform CSV data by using Power Query
2. Source and transform local Excel workbook data by using Power Query
3. Load Power Query results to the workbook data model

### *Developing a Power Query Solution*

In this exercise, you will define Power Query logic to retrieve data from several CSV (comma-separated value) files and from local Excel workbook data. All data will be prepared and loaded into the workbook data model.

### *Downloading and Installing Power Query for Excel*

In this task, you will download and install the Power Query Add-in for Excel, if you do not have it installed on your machine.

4. Open Excel, and then select the **Blank Workbook** template.
5. Inspect the ribbon tabs and check to see if the **Power Query** tab is available.
6. If the **Power Query** tab is available, you can skip the following steps in this exercise. Close Excel.
7. Go to the **Microsoft Download Center** with the following link:

   http://www.microsoft.com/en-us/download/details.aspx?id=39379

8. Download and install **Power Query for Excel** on your machine.

### *Creating an Excel Workbook*

In this task, you will create an Excel Workbook.

1. Open Excel, and then select the **Blank Workbook** template.
2. On the **File** ribbon (known as the backstage view), select **Save As**.

3. In the **Save As** window, navigate to folder on your machine where you want to store the files for this lab.

4. In the **File Name** box, enter **Lab 04**.

5. Click **Save**.

### *Exploring the Data Extract Files*

In this task, you will explore the contents of one of the CSV files. The CSV files come from a variety of sources, including:

- **Clickstream.csv**: Clickstream web analytics source from Auzre HDInsight

- **InStoreInteractions.csv**: Internet of Things sensors (via Kinect sensors)

  *Note: The data can come from a variety of sources. Power Query can discover, source and prepare the data ready for data modeling, regardless of data source or data format.*

1. To open **File Explorer**, right-click on your **Windows** button in the lower left corner of your screen, then select **File Explorer**.

2. Navigate to the **CSV Files** folder that is part of the lab assets.

3. To review the CSV file content, right-click the **InStoreInteractions.csv** file, and then select **Open**.

   *Note: By default, a CSV file will open in Excel.*

4. In Excel, notice that the data is structured with the first row providing column headers. Notice also that the first 151 rows include many instances of the word **Null** – these are in fact data anomalies, regarded as errors, and the rows must not be loaded into the workbook data model.

   *Note: Kinect sensors record the position of customer interactions. The **ix** and **iy** columns store the coordinates of each recorded interaction with a particular product. You will visualize and analyze customer product interactions in a later lab.*

5. To close the CSV file, on the backstage view, select **Close**.

6. If prompted to save changes, click **Don't Save**.

7. Switch back to the **Lab 04** workbook.

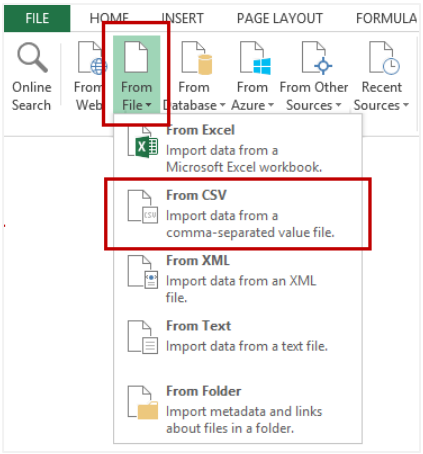
### *Creating a Power Query*

In this task, you will define Power Query logic to source data from the **InStoreInteractions.csv** file. The query will prepare and transform the data to meet the following requirements:

Nine columns:

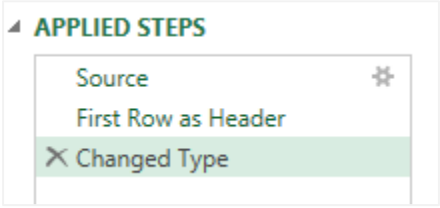
- **InteractionID** (type Whole Number)
- **ProductID** (Whole Number)
- **InteractionTime** (Date/Time)
- **Date** (Date/Time)
- **WeekDay** (Whole Number)
- **HourOfDay** (Whole Number)
- **ix** (Whole Number)
- **iy** (Whole Number)
- **Month** (Date/Time) - created by producing the first day of the month based on the **InteractionTime** value

1. Switch to the Excel workbook.
2. On the **Power Query** ribbon, from inside the **Get External Data** group, click **From File**, and then select **From CSV**.




3. In the **Browse** window, navigate to the **CSV Files** folder.
4. Select the **InStoreInteractions.csv** file, and then click **OK**.
5. When the **Query Editor** window opens, if necessary, maximize the window.

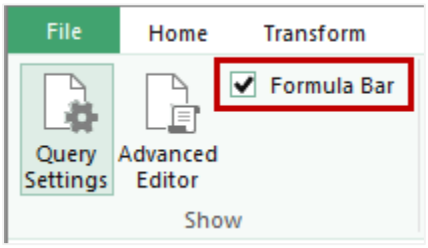
6. In the **Query Settings** pane (located at the right), in the **Applied Steps** list, notice that three steps were automatically generated to source the data content, promote the first row to column names, and change column data types.




7. To visualize the query steps, select the **Source** step, and notice that the query result represents the raw data sourced from the CSV file.

8. Notice also that the columns are generically named (Column1, Column2, etc.).

9. If the formula bar (located below the ribbon) is not visible, on the **View** ribbon tab, check **Formula Bar**.




10. In the formula bar, review the expression for the selected step to source the data from the CSV file.

    *Note: It is not important at this point to understand the details of the formula.*

    *Most Power Query step formulas are generated automatically by using commands available on the ribbon or from context menus. If necessary, it is possible to modify the formula for any step directly in the formula bar.*

11. Select the **First Row as Header** step, and notice that the column names are now based on the values from the first data row.

12. Select the **Changed Type** step, and notice that the values in the **InteractionID**, **ProductID**, **ix** and **iy** columns are now right-justified and italicized.

    *Note: These have had their data types changed automatically to **Whole Number**.*

13. Notice also that the data in the **WeekDay** and **HourOfDay** columns are not formatted in this way, as the data type change was not applied due to the presence of the **Null** non-numeric values (sensor errors).

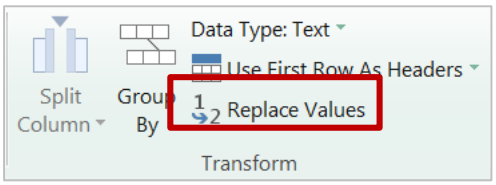
    *Note: The presence of **Null** in text form is not the same as a database null.*

14. In the **Applied Steps** list, ensure that the last step is selected.

    *Note: Additional steps are always inserted immediately after the currently selected step.*

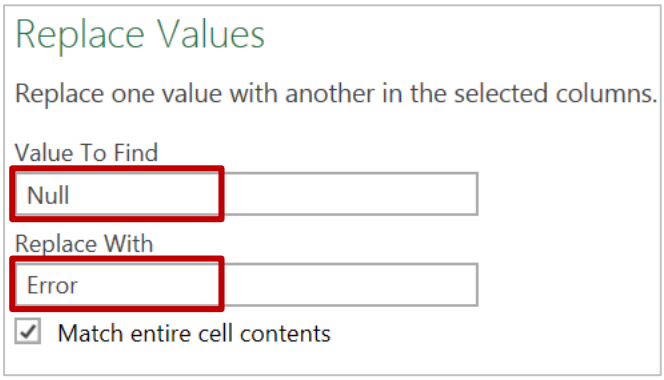
15. To multi-select columns, first select the **InteractionTime** column header, then while pressing the **Shift** key, select the **HourOfDay** column header.

16. On the **Home** ribbon, from inside the **Transform** group, select **Replace Values**.




17. In the **Replace Values** window, in the **Value to Find** box, enter **Null** (as text).

18. In the **Replace With** box, enter **Error**.



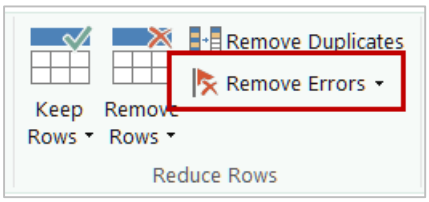

19. Click **OK.**

20. To set data types, multi-select the **InteractionTime** and **Date** columns.

21. Right-click either of the select column headers, and then select **Change Type > Date/Time**.

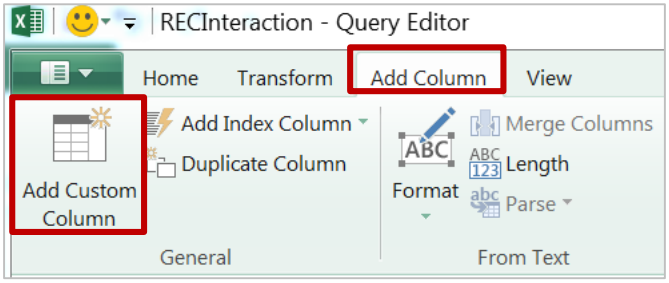
22. Notice that the text value **Error** cannot be changed to a date/time type, and so Power Query marks these values as errors.

23. To remove rows containing errors, on the **Home** ribbon, from inside the **Reduce Rows** group, click **Remove Errors**.




24. Set the data types of the **WeekDay** and **HourOfDay** columns to **Whole Number**.

25. To add a new column, on the **Add Column** ribbon, click **Add Custom Column**.



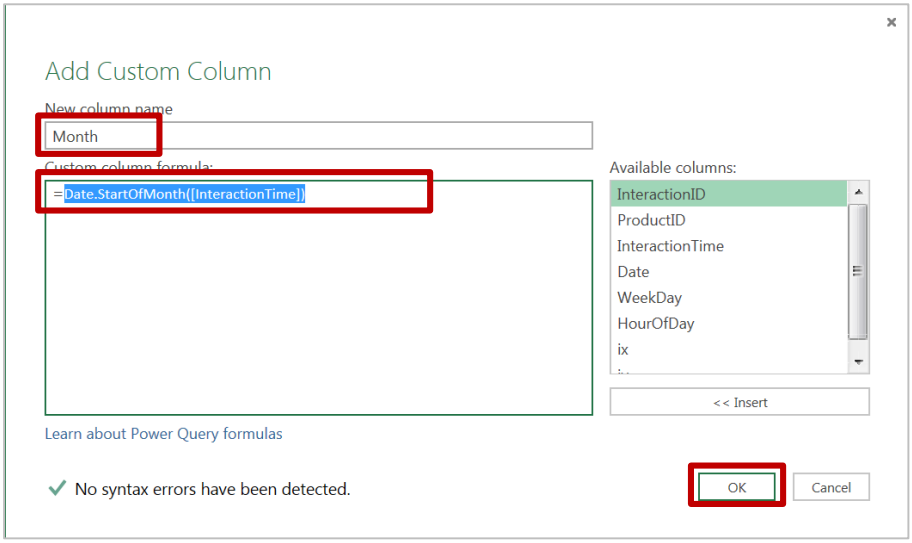

26. In the **Add Custom Column** window, in the **New Column Name** box, replace the text with **Month**.

27. In the **Custom Column Formula** box, enter the following formula.

**Power Query Formula Language**

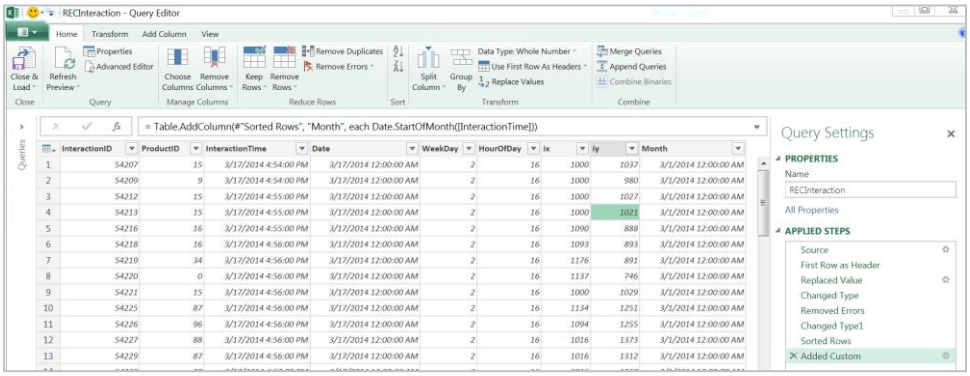
```
Date.StartOfMonth([InteractionTime])
```

28. Click **OK**.

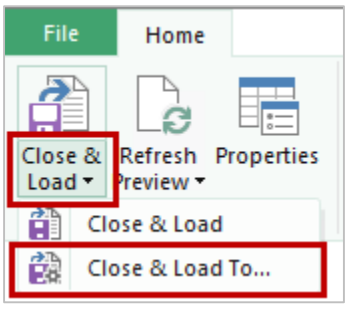



29. Set the data type of the **Month** column to **Date/Time**.

30. The completed query should look like the following diagram.

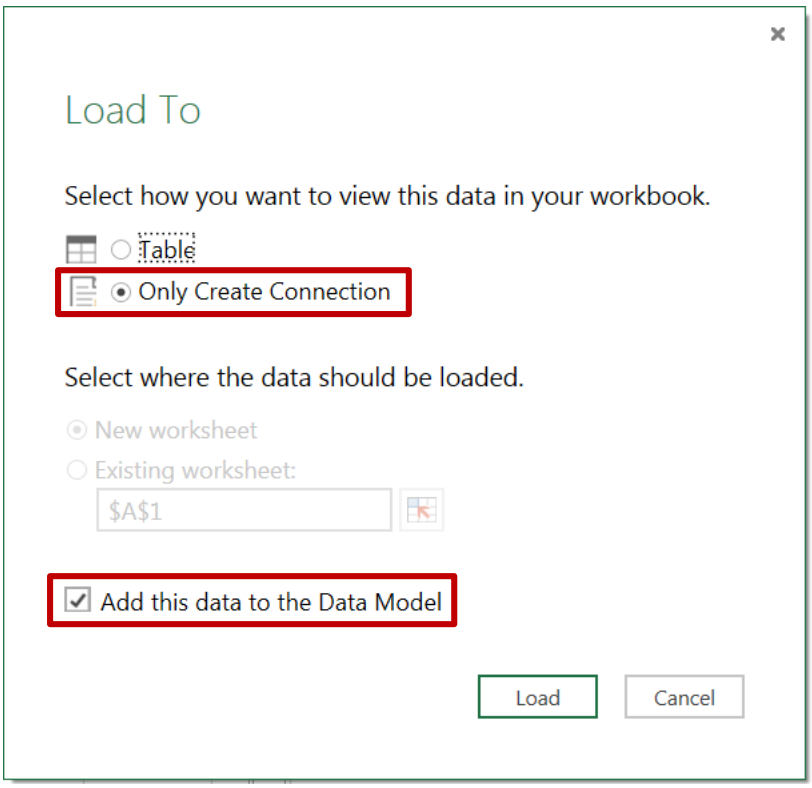



31. To close the query without loading the result to an Excel table, on the **Home** ribbon, from inside the **Close** group, click the **Close & Load** dropdown arrow, and then select **Close & Load To**.




32. In the **Load To** window, select the **Only Create Connection** option.

33. Check the **Add this Data to the Data Model** checkbox.




34. Click **Load**.

    *Note: This configuration will load the data into the workbook data model, where it is efficiently compressed and optimized for analytic querying. All queries in this lab will be loaded directly to the workbook data model by using this technique.*

35. In the workbook, in the **Workbook Queries** pane, notice the addition of the query.

36. Notice also that 108,233 rows were loaded (to the workbook data model).

### *Loading Additional CSV Data*

In this task, you will create several Power Query queries to load data from additional CSV files.

1. For each of the five CSV files listed in the following table:

    a. Create a Power Query based on the CSV file

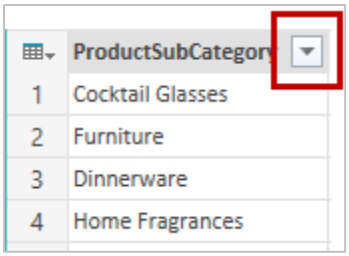
    b. If required, transform the data by using the data preparation requirements

    c. Load the query result only to the workbook data model (as achieved with the first Power Query)

    *Note: For the query that requires data preparation, if required, detailed steps follow the table.*

| CSV File | Data Preparation |
|---|---|
| **Clickstream.csv** | No preparation required |
| **ExtendedCityInfo.csv** | No preparation required |
| **ProductSubcategory.csv** | Remove blank rows<br>Remove the **MLProductName** column |
| **TweetHashtag.csv** | No preparation required |
| **TweetTexts.csv** | No preparation required |

2. To remove the blank rows from the **ProductSubcategory** query, in the **ProductSubCategory** column header, click the down arrow.




3. In the filter options list, uncheck **(blank)**, and then click **OK.**

4. To remove the **MLProductName** column, right-click the **MLProductName** column header, and then select **Remove**.

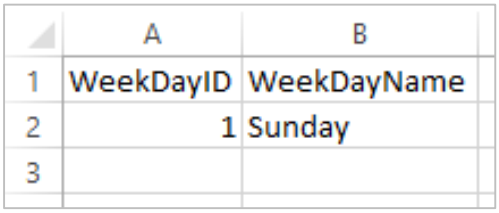
### *Loading Excel Data*

In this task, you will create an Excel named range to define weekday data.

1. In Excel, right-click the worksheet **Sheet1** tab, and then select **Rename**.

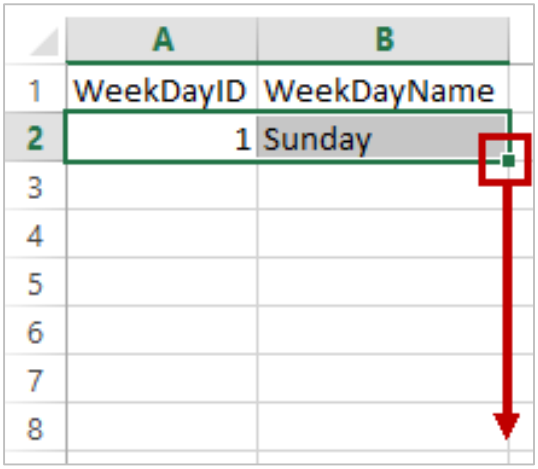
2. Rename the worksheet to **WeekDay**, and then press **Enter**.

3. Enter the following data in the worksheet.

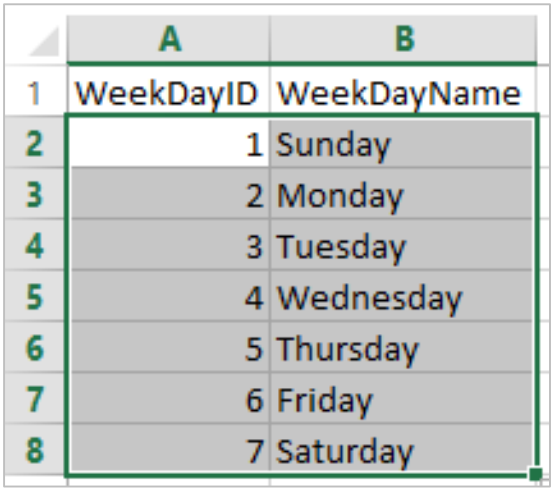



4. To fill the table with each weekday, select the range **A2:B2**.

5. Drag the fill handle (the square located at the bottom right of the selected range) down to row **8**.



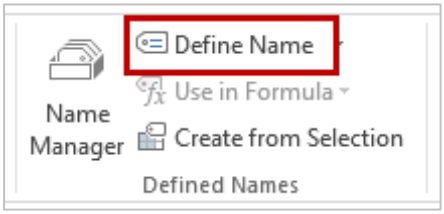

6. Verify that the data looks like the following diagram.



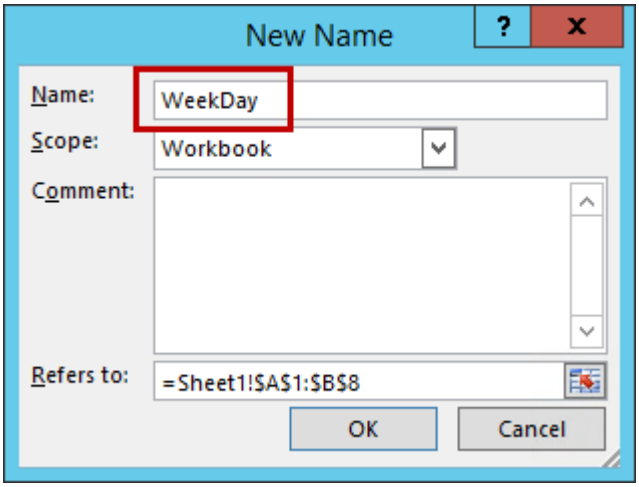

*Note: Power Query can only source local workbook data from either an Excel table or a named range. You will define a named range.*

7. To define a named range, select the range **A1:B8** (which includes the header row).

8. On the **Formulas** ribbon, from inside the **Defined Names** group, click **Define Name**.

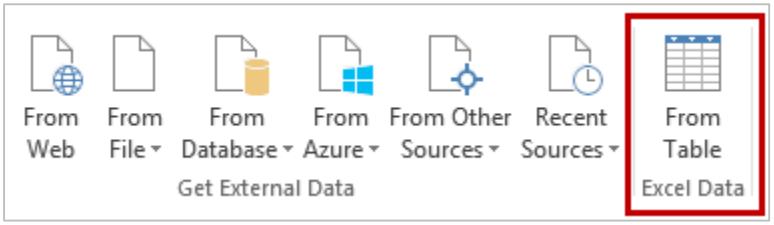



9. In the **New Name** box, in the **Name** box, replace the text with **WeekDay**.



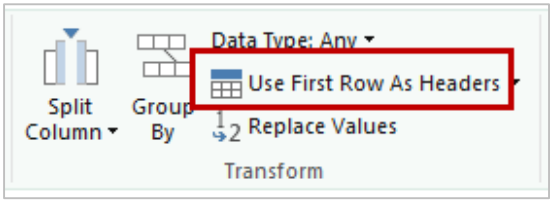

10. Click **OK**.

11. Ensure that the named range remains selected, and then on the **Power Query** ribbon, from inside the **Excel Data** group, click **From Table**.




12. In the Power Query Editor window, notice the named range data, and that the column names appear in the first row.

13. On the **Home** ribbon, from inside the **Transform** group, click **Use First Row as Headers**.




14. Set the data type for the **WeekDayID** column to **Whole Number**.

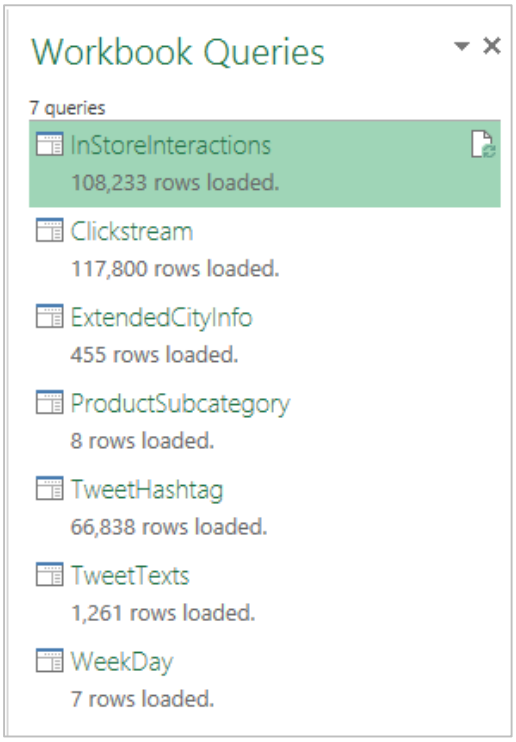
15. Set the data type for the **WeekDayName** column to **Text**.

16. Close and load the query to the workbook data model only.

### *Finishing Up*

In this task, you will finish up by reviewing the Power Query definitions, hiding the **WeekDay** worksheet, and then saving and closing the workbook.

1. In the **Workbook Queries** pane, verify that you have created the following seven queries.




2. To create a new worksheet, click the **New Sheet** button.


3. To hide the **WeekDay** worksheet, right-click the **WeekDay** worksheet tab, and then select **Hide**.

4. To save the workbook, on the backstage view, click **save**.

5. To close Excel, click the **X** button in the top right corner.

6. Close the File Explorer window.

In this module, you used Power Query to load data into the workbook data model. Data was sourced from six CSV files and one Excel named range. Power Query provided the opportunity to prepare the data by removing rows and columns, renaming columns, removing errors, and changing data types.

## Data modeling with Power Pivot

In this lab, you will use Power Pivot to continue the development of the workbook data model. You will load product data from a SQL Server database, and then define relationships and calculated fields.

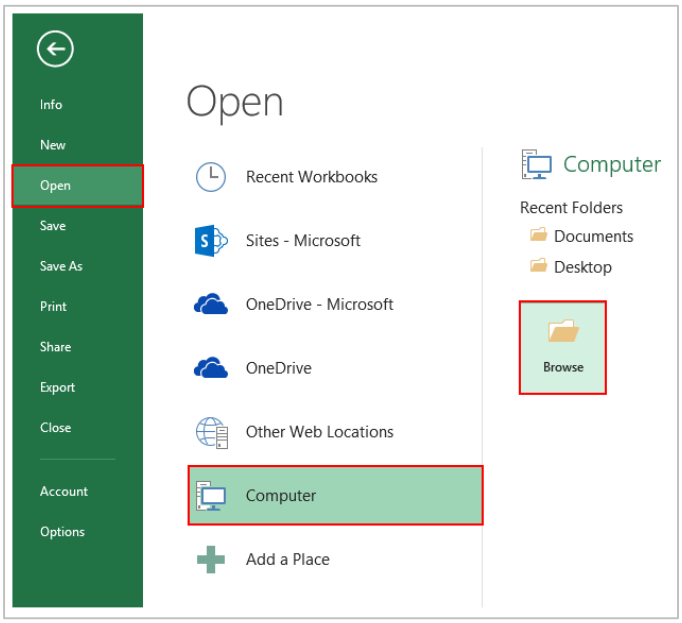
You will learn how to:

1. Load external data into the Power Pivot data model
2. Define table relationships
3. Define calculated fields

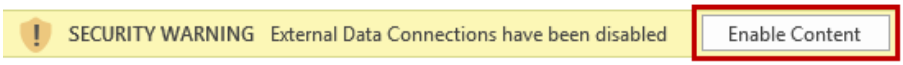
### *Getting Started*

In this task, you will open an existing Excel workbook.

1. To open Excel, on the taskbar, click the **Excel** program shortcut.
2. On the **File** ribbon tab (known as the backstage view), select **Open**, then **Computer**, and then click **Browse**.




3. In the **Open** window, browse to the folder with the assets for the labs.
4. Select the **05 – Power Pivot Workbook - Starter.xlsx** workbook, and then click **Open**.
5. If prompted with a security warning, click **Enable Content**.

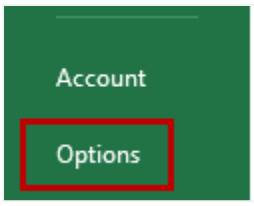



### *Enabling the Power Pivot Add-In*

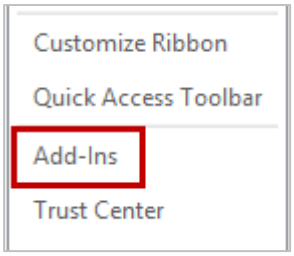
In this task, if necessary, you will enable the Power Pivot Add-in. In Excel 2013, by default, the Power Pivot Add-in is disabled.

1. If the **PowerPivot** ribbon tab is not available, on the **File** ribbon tab, select **Options**.

   *Note: If the **PowerPivot** ribbon tab is available, there is no need to complete the steps in this task; continue the lab from **Task 3**.*




2. In the **Excel Options** window, select the **Add-Ins** page.




3. In the **Manage** dropdown list, select **COM Add-Ins**, and then click **Go**.

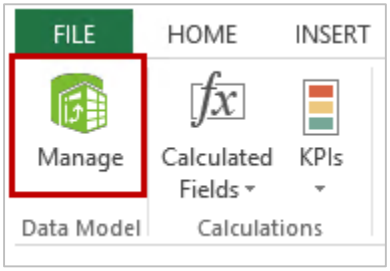
4. In the **COM Add-Ins** window, select the **Microsoft Office PowerPivot for Excel 2013** add-in, and then click **OK**.

Notice the addition of the **PowerPivot** ribbon tab.

### *Loading Data from a SQL Azure Database*

In this task, you will open the Power Pivot window and import tables from the **WWImporters** SQL Azure database.

1. On the **PowerPivot** ribbon, click **Manage**.




2. When the PowerPivot window opens, if necessary, maximize the window.

3. On the **Home** ribbon, from inside the **Get External Data** group, click **From Other Sources**.

4. In the **Table Import Wizard**, select **Microsoft SQL Azure**, then click **Next**:

    a. In the **Friendly Connection Name** box, replace the text with **Wide World Importers**.

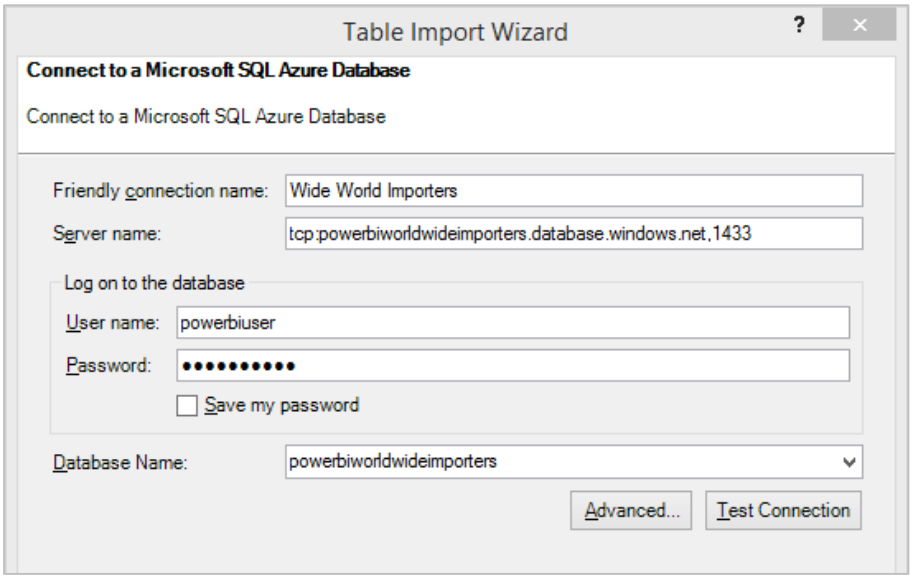
    b. In the **Server Name** box, enter or copy/paste the following value (the entire string):

**tcp:powerbiworldwideimporters.database.windows.net,1433**

    c. In the **User Name** box enter **powerbiuser**.

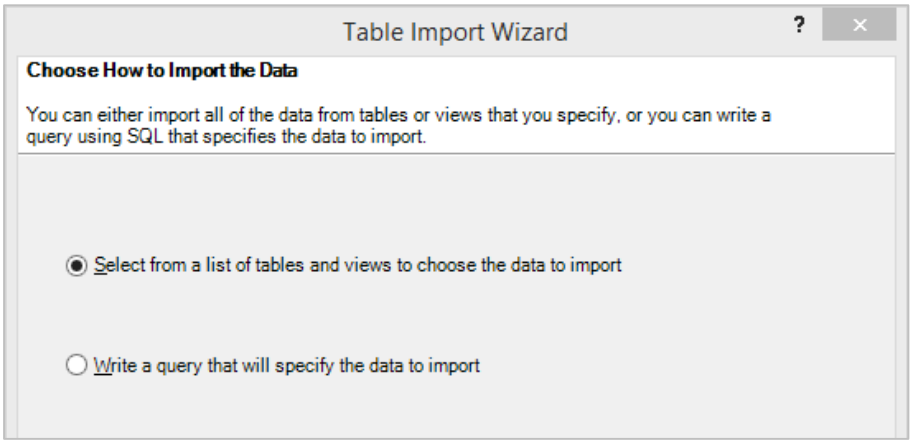
    d. In the **Password** box enter **Pass@word1**.

    e. In the **Database Name** dropdown list, select **powerbiworldwideimporters**.



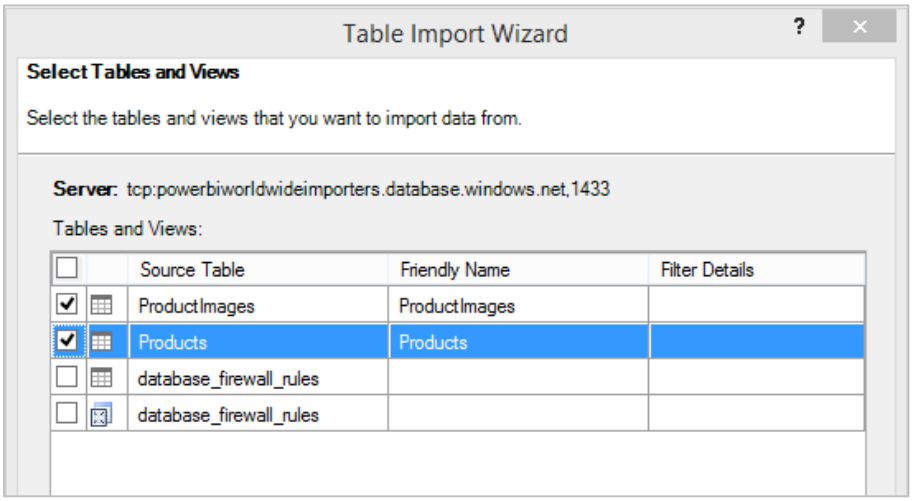

5. Click **Next**.

6. At the **Choose How to Import Data** step, accept the default import method, and then click **Next**.

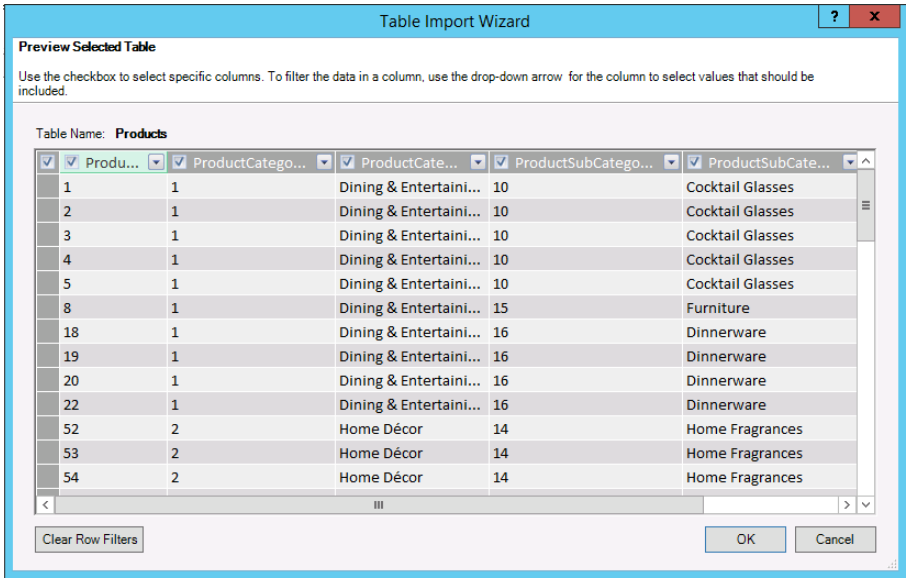



7. In the **Select Tables and Views** step, check both the **ProductImages** and **Products** tables.

8. Verify that the table selection matches the following.



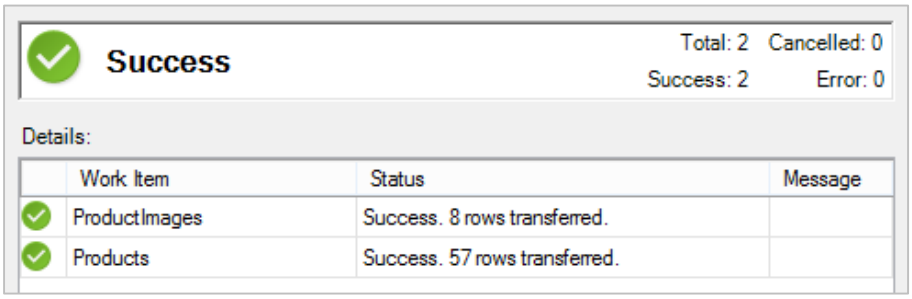

9. To preview the columns retrieved from the **Products** table, select the **Products** table row, and then click **Preview & Filter**.




10. Click **OK**.

11. To load the tables, click **Finish**.

12. Verify that the tables were successfully imported.



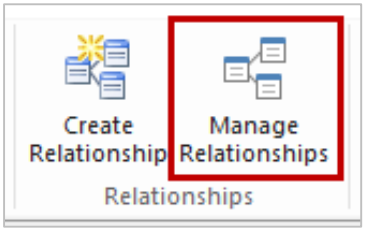

13. In the Table Import Wizard, click **Close**.

14. Notice that the **ProductImages** and **Products** tables have been added to the data model.


### *Creating Relationships*

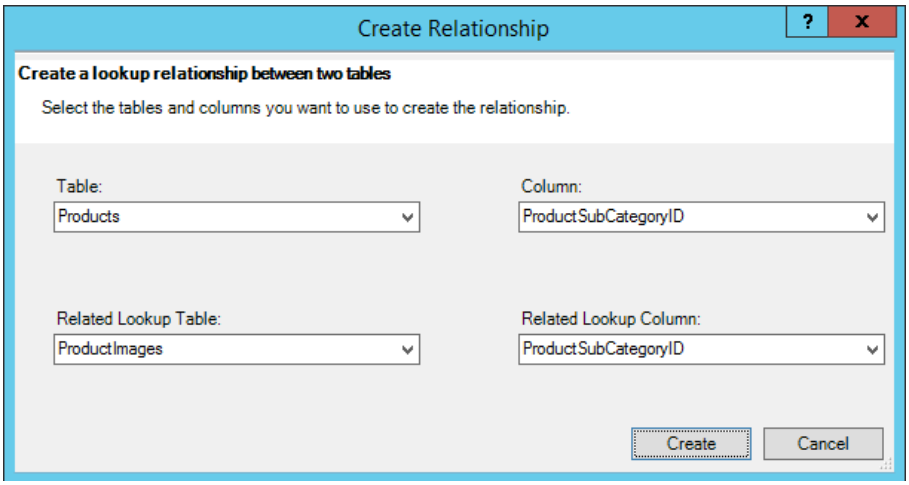
In this task, you will define relationships between the data model tables.

1. On the **Design** ribbon, from inside the **Relationships** group, click **Manage Relationships**.




2. In the **Manage Relationships** window, click **Create Relationship**.

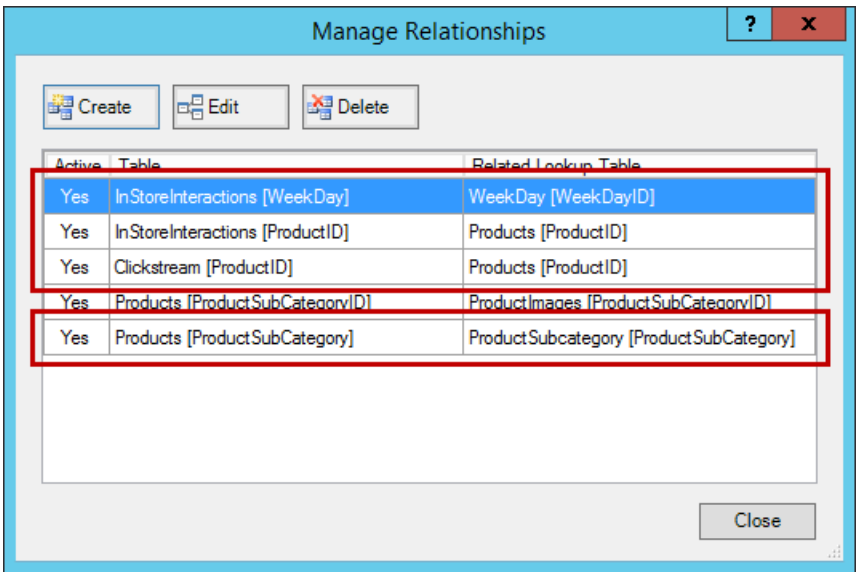
3. In the **Create Relationship** window, configure the following relationship.




4. Click **Create**.

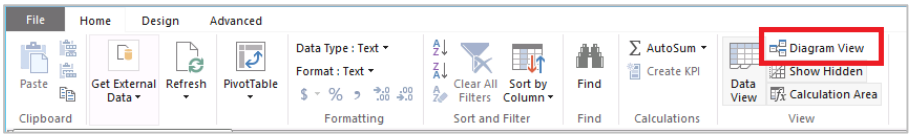
5. In the **Manage Relationships** window, notice the addition of the relationship.

6. Add the following four additional relationships.



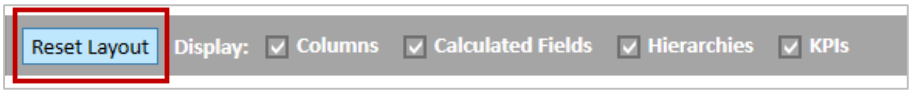

7. Click **Close**.

8. To switch to Diagram View, on the **Home** ribbon, from inside the **View** group, click **Diagram View**.




*Note: You can also toggle between Diagram View and Data View by using the buttons located at the bottom right corner.*

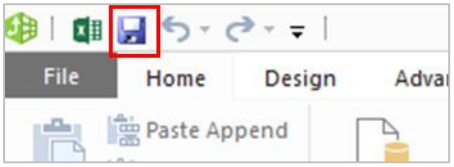
9. To arrange the tables, click **Reset Layout**.




10. When prompted to confirm, click **Reset Layout**.

11. Review the diagram.

12. To save the workbook, click the disk icon located at the top left corner.




## *Exploring Table Data*

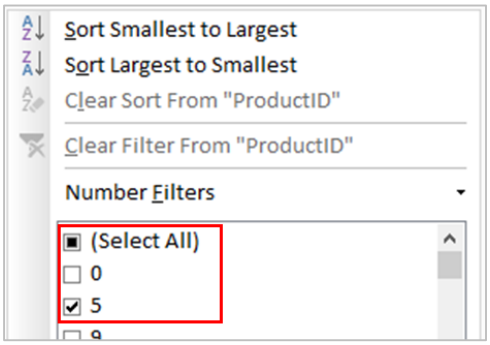
In this task, you will explore the data in **InStoreInteractions** table. The volume of data is not very large, but still you will have the opportunity to appreciate how fast the interactive filter and sort operations can be performed.

1. Switch to the PowerPivot window.

2. In the diagram, right-click the **InStoreInteractions** table, and then select **Go To**.

3. In the record navigator (located at the bottom left), notice the record count of **108,223**.


4. To apply a filter, in the **ProductID** column header (second column), click , uncheck (**Select All**), and then check **5**.



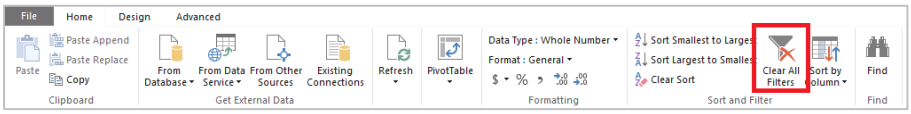

5. Click **OK**.

6. Notice the record count of **12,863**.

7. In the **InteractionTime** column header, click , and then select **Sort Newest to Oldest**.

   *Notice that the filtered store interaction records are now sorted in ascending time order.*

8. To clear the filter, on the **Home** ribbon, from inside the **Sort and Filter** group, click **Clear All Filters**.



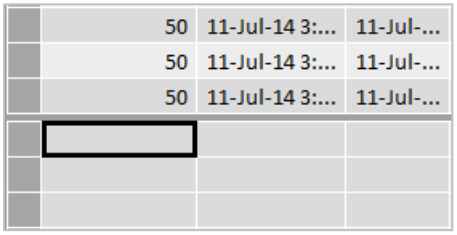

9. To clear the sort, on the **Home** ribbon, from inside the **Sort and Filter** group, click **Clear Sort**.

### *Creating Calculated Fields*

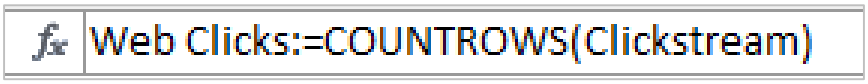
In this task, you will create two calculated fields, one in the **Clickstream** table and one in the **TweetTexts** table.

1. Select the **Clickstream** table.

2. Select any cell in the **Calculation Area**.



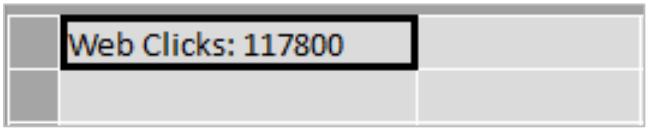

3. In the formula bar (located above the table grid), enter the following expression.




*Note: This expression calculates the number of rows (representing clicks) within a filter context.*

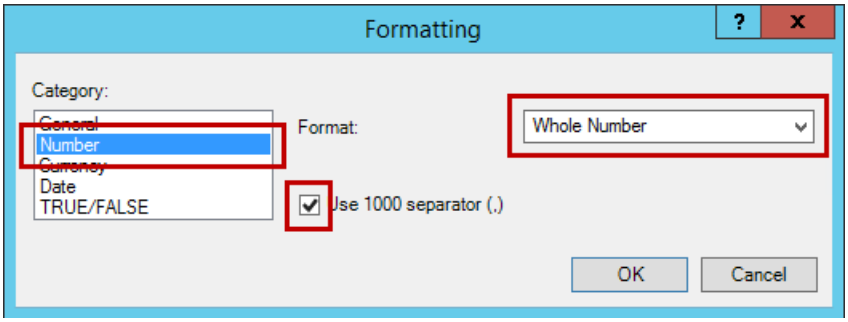
4. Press **Enter**.

5. Resize the width of the column to reveal the calculated field name and value.



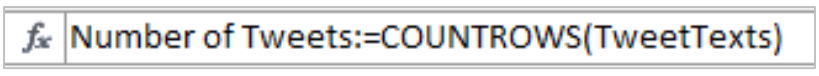

6. To format the calculated field, right-click the cell, and then select **Format**.

7. In the **Formatting** window, configure the following.




8. Click **OK**.

9. Create a second calculated field in the **TweetTexts** table, by using the following expression.




10. Format the calculated field as a whole number using the thousand separator.

11. Verify that you produce the following.


### *Finishing Up*

In this task, you will save and close the workbook.

1. To save the workbook, on the backstage view, click **Save**.

2. To close Excel, click the **X** button at the top right corner.

In this lab, you loaded product data from a SQL Server database, and then defined relationships and calculated fields.

## Visualizing data with Power View

In this lab, you will explore Power View by creating two Power View reports based on the data model created in the previous lab.

You will learn how to:

- Work with the Power View designer
- Create visually compelling Power View reports by using various visualization types

### *Exploring the Power View Design Environment*

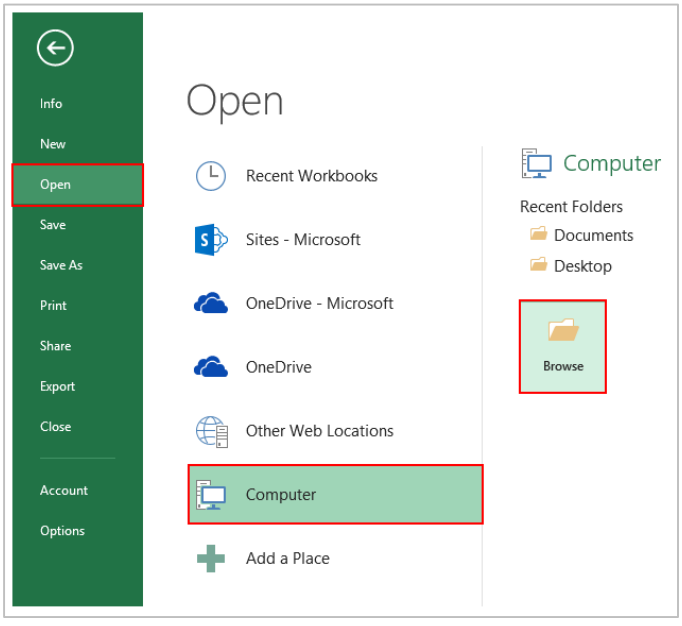
In this exercise, you will open an existing PowerPivot workbook, and then explore the **Power View** ribbon functionality, and the data model interface by using the **Power View Fields** pane.

### *Opening and Exploring the Excel Workbook*

In this task, you will open an existing Excel workbook in the prior module.

1. To open Excel, on the taskbar, click the **Excel** program shortcut.

2. On the **File** ribbon tab (known as the backstage view), select **Open**, then **Computer**, and then click **Browse**.

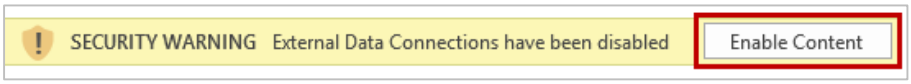



3. In the **Open** window, browse to the folder with the assets for the labs.

4. Select the **06 – Power View Workbook - Starter.xlsx** workbook, and then click **Open**.

   *Note: This is the workbook completed in **Lab 05**.*

5. If prompted with a security warning, click **Enable Content**.

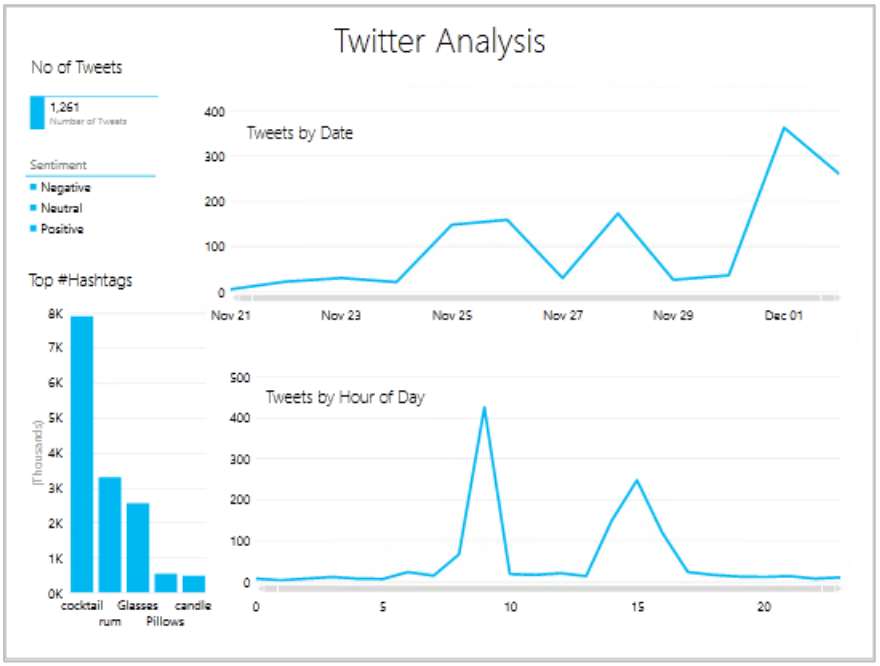



### *Creating Power View Reports*

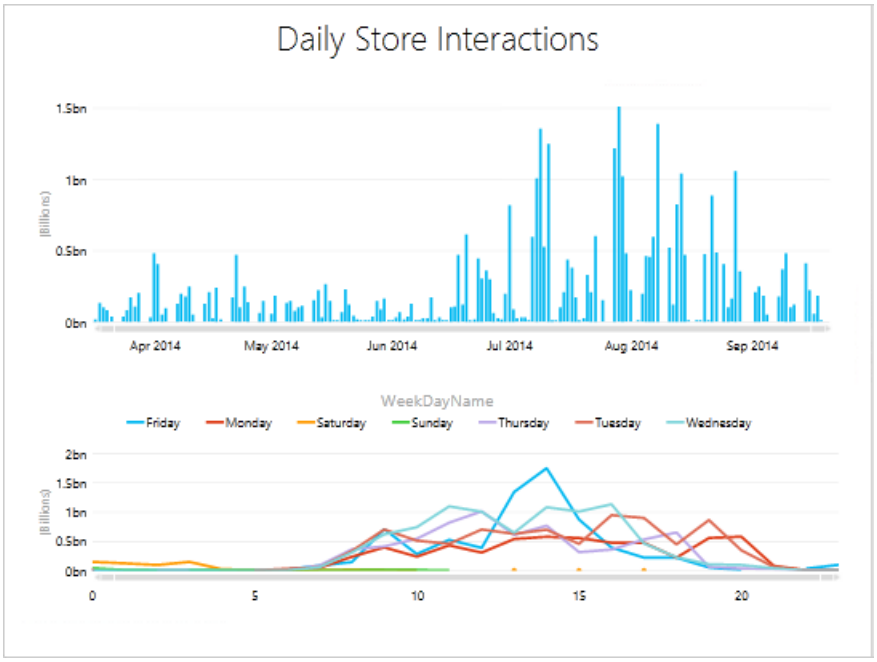
In this exercise, you will create four Power View reports. The first report will be for Twitter Analysis where you will analyze twitter data. The second report will be for daily store interactions. The third report will present web clicks vs in-store interactions. The fourth will display product images.

The completed reports will look like the following.

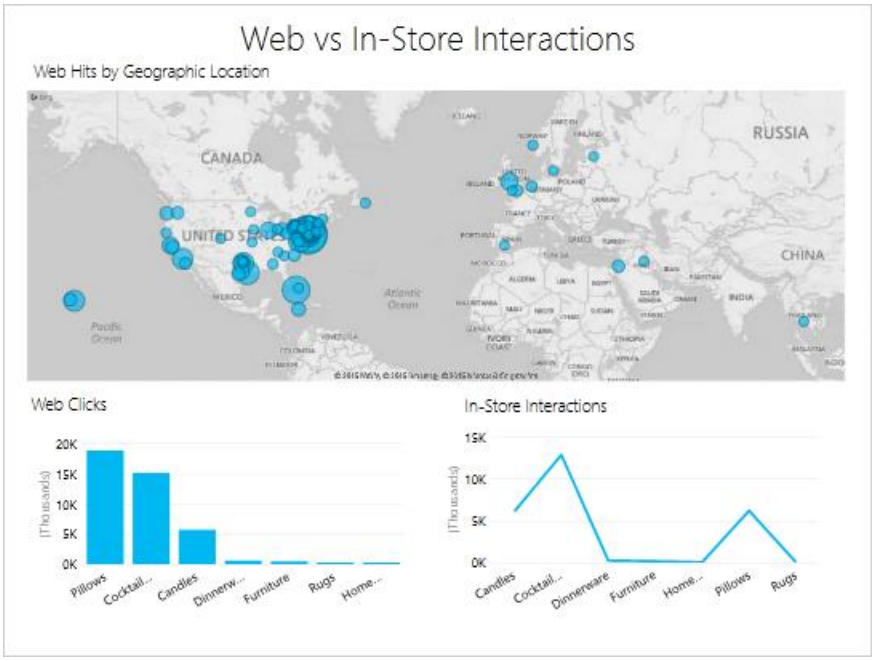
*Report 1: Twitter Analysis*



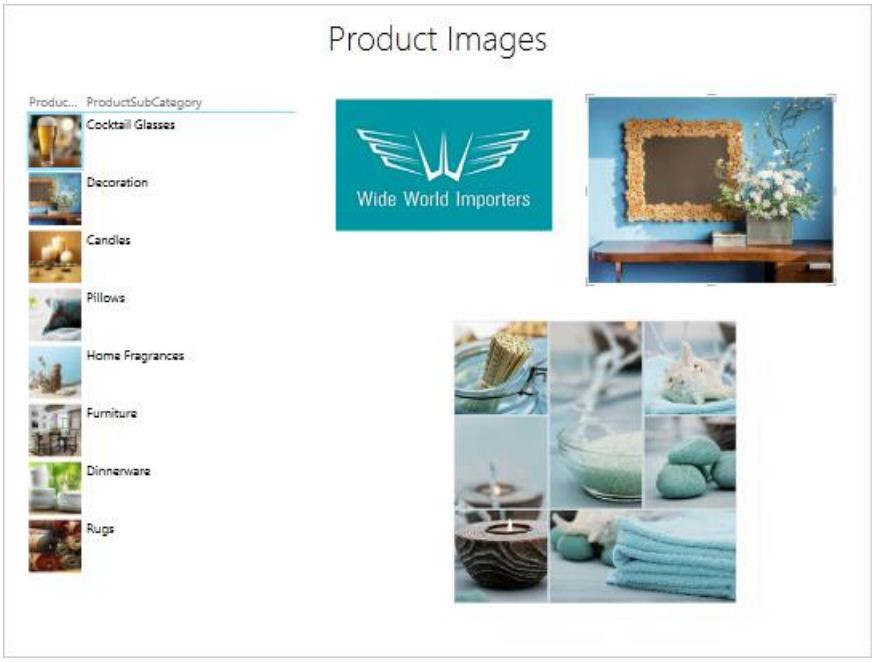

*Report 2: Daily Store Interactions*




*Report 3: Web Clicks vs In-Store Interactions*




*Report 4: Product Images*




### *Creating Report 1: Twitter Analysis*

In this task, you will create the **Twitter Analysis** report.

1. To insert a Power View report, on the **Insert** ribbon, click **Power View**.

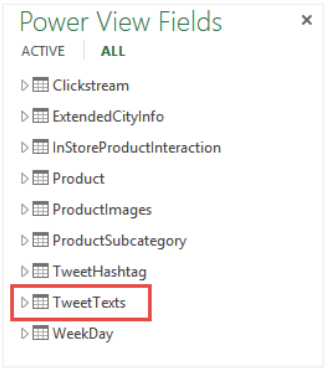

2. Click the **Click Here to Add Title** text, and then enter **Twitter Analysis**.

3. Right-click the report tab, and then select **Rename**.

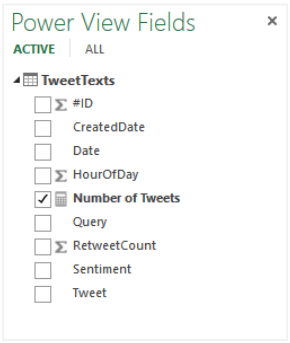
4. Rename the tab **Power View1** to **Twitter Analysis**, and then press **Enter**.

   *Note: It is a good practice to appropriately name the tabs to enable navigation between the reports in a workbook.*

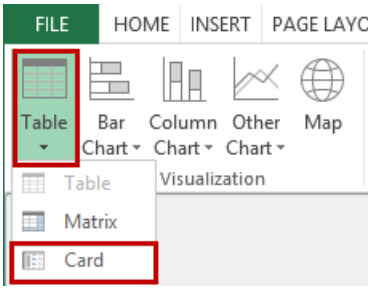
5. In the **Power View Fields** pane (located at the right), to reveal the fields from the **TweetTexts** table, click the small triangle to the left of the table name.




6. Check the **Number of Tweets** field.




7. On the **Design** ribbon, from inside the **Switch Visualization** group, click **Table**, and then select **Card**.

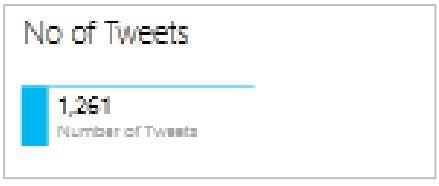



8. To insert a textbox, on the **Power View** ribbon, from inside the **Insert** group, click **Text Box**.

9. Inside the text box, enter **No of Tweets**.

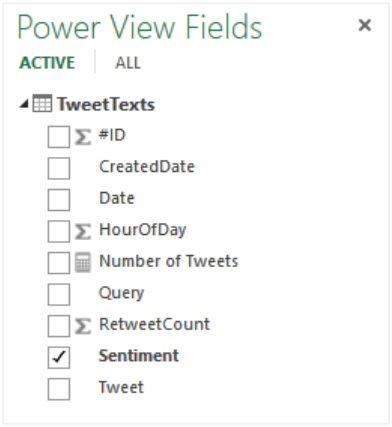
10. Resize the text box to ensure all text fits on a single row.

11. Drag the text box above the card visualization.



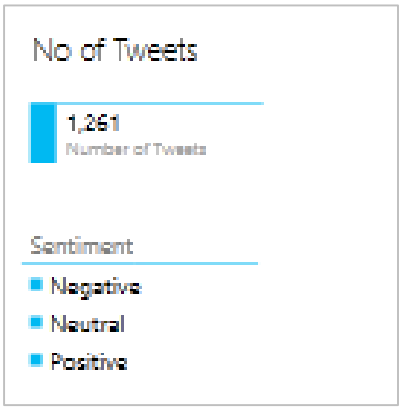

12. To create a slicer, click a blank area of the report canvas.

13. In the **Power View Fields** pane, from the **TweetTexts** table, select the **Sentiment** field.




14. On the **Power View** ribbon, click **Slicer**.

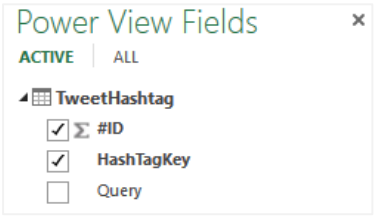
15. Drag the slicer directly beneath the card visualization.



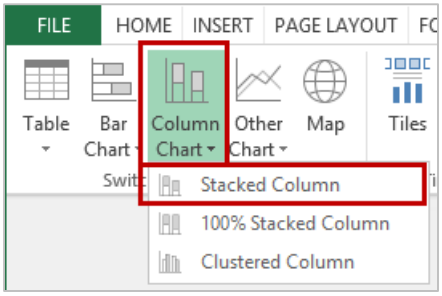

16. To filter the report by neutral sentiment, click the **Neutral** item.

17. To create a column chart, click a blank area of the report canvas.

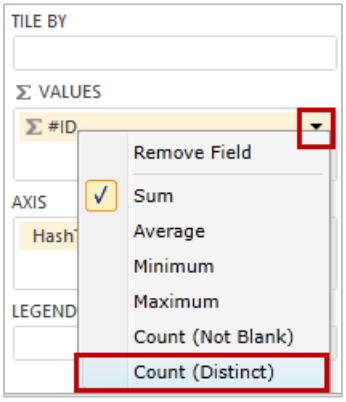
18. In the **Power View Fields** pane, expand the **TweetHashtag** table, and then check the **#ID** and **HashTagKey** fields.



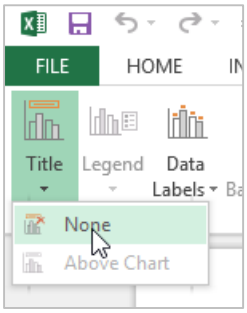

19. On the **Design** ribbon, from inside the **Switch Visualization** group, click **Column**, and then select **Stacked Column**.



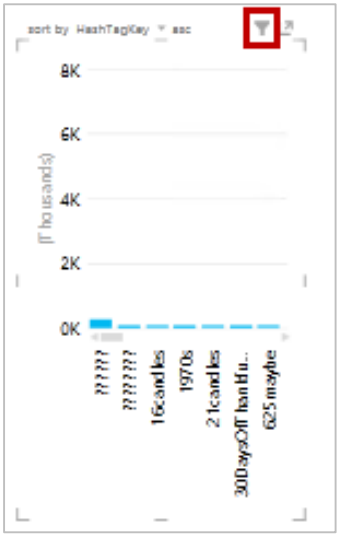

20. In the Layout area (located at the bottom right), click the dropdown arrow for **#ID** field, and then select **Count (Distinct)**.



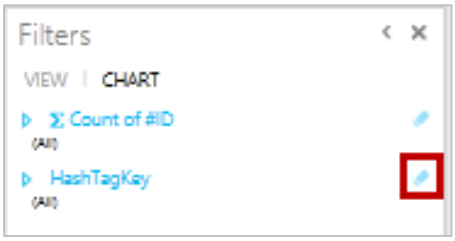

21. To turn off the automatic title, on the **Layout** ribbon, from inside the **Labels** group, click **Title**, and then select **None**.




22. To filter the chart, hover over the chart, and then click the filter icon located at the top right corner.




23. In the **Filters** pane, click the icon to edit the **HashTagKey** filter condition.




24. In the list, check only **candle**, **cocktail**, **Glasses**, **Pillows**, **rum**.

    *Tip: You can use the search box to help locate the items.*

25. To sort the chart, hover over the chart, and then click **HashTagKey** located at the top left corner.

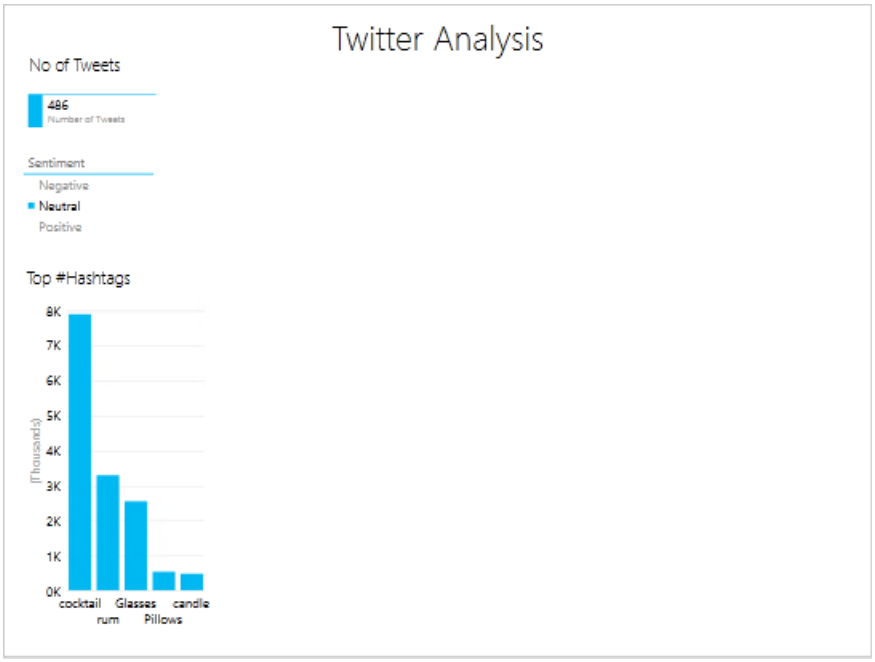
    *Note: Clicking in this location will toggle between sorting by **HashTagKey** and **Count of #ID**.*

26. Modify the sort order from ascending (asc) to descending (desc).

27. Move the chart to the bottom left corner.

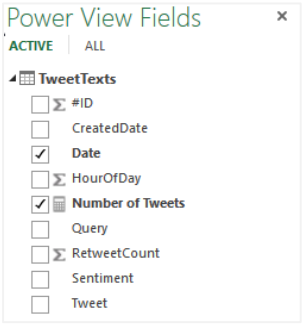
28. Add a text box to annotate the chart as **Top #Hashtags**.

29. Verify that the report design looks like the following.



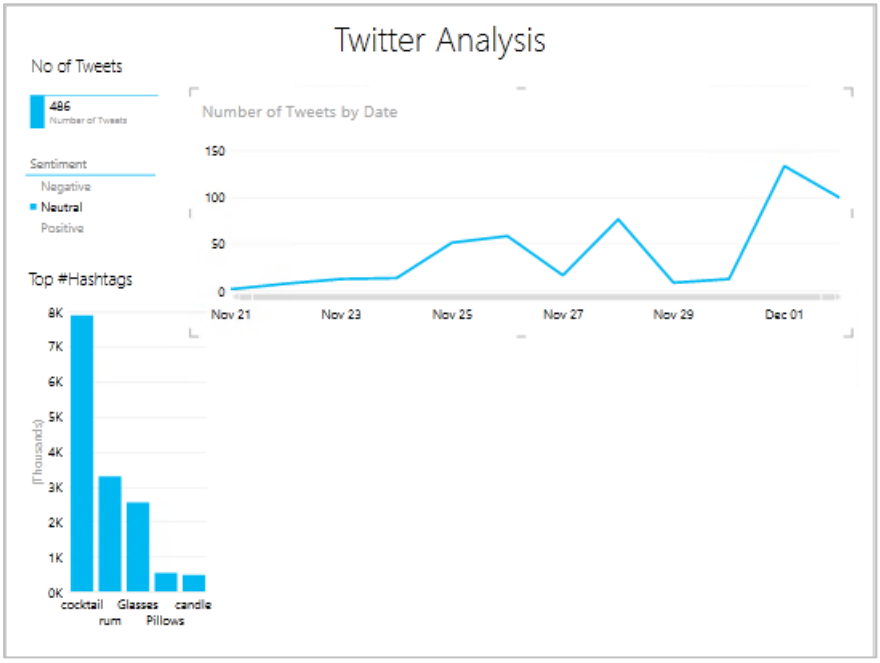

30. To create a line chart, click a blank area of the report canvas.

31. In the **Power View Fields** pane, from the **TweetTexts** table, check the **Date** and **Number of Tweets** fields.




32. On the **Design** ribbon, from inside the **Switch Visualization** group, click **Other Chart**, and then select **Line**.

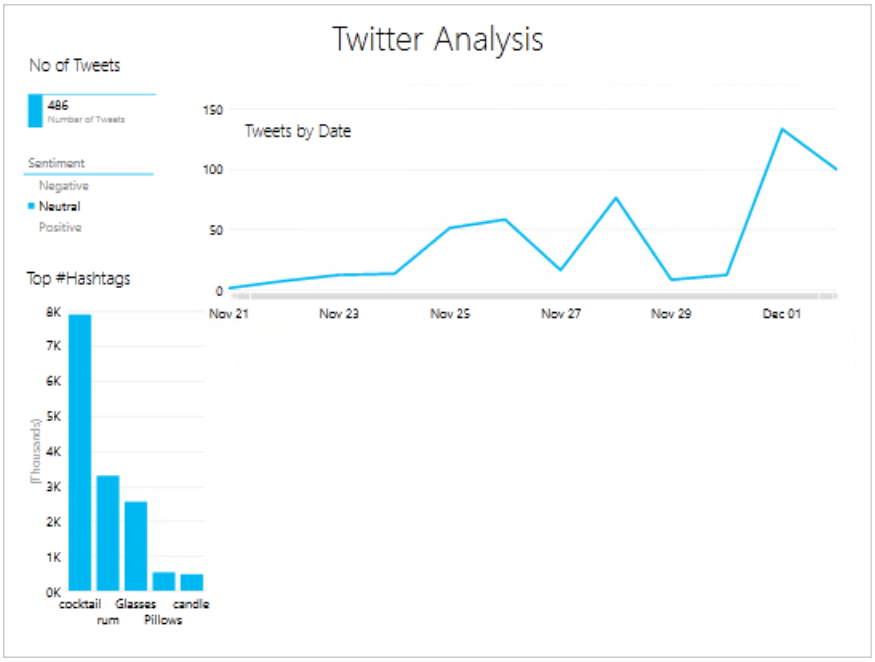
33. Resize the chart based on the following diagram.




34. Remove the automatic title.

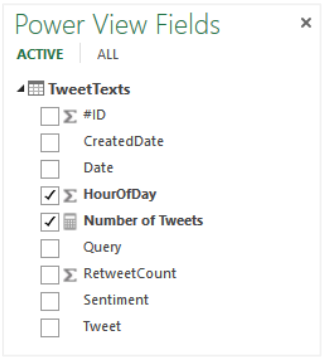
35. Add a text box to annotate the chart as **Tweets by Date**.

36. Verify that the report design looks like the following.

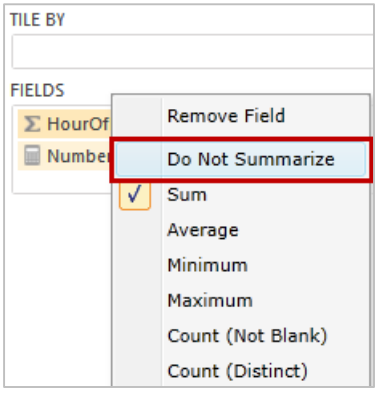



37. To create an additional line chart, click a blank area of the report canvas.

38. In the **Power View Fields** pane, from the **TweetTexts** table, check the **Hour of Day** and **Number of Tweets** fields.



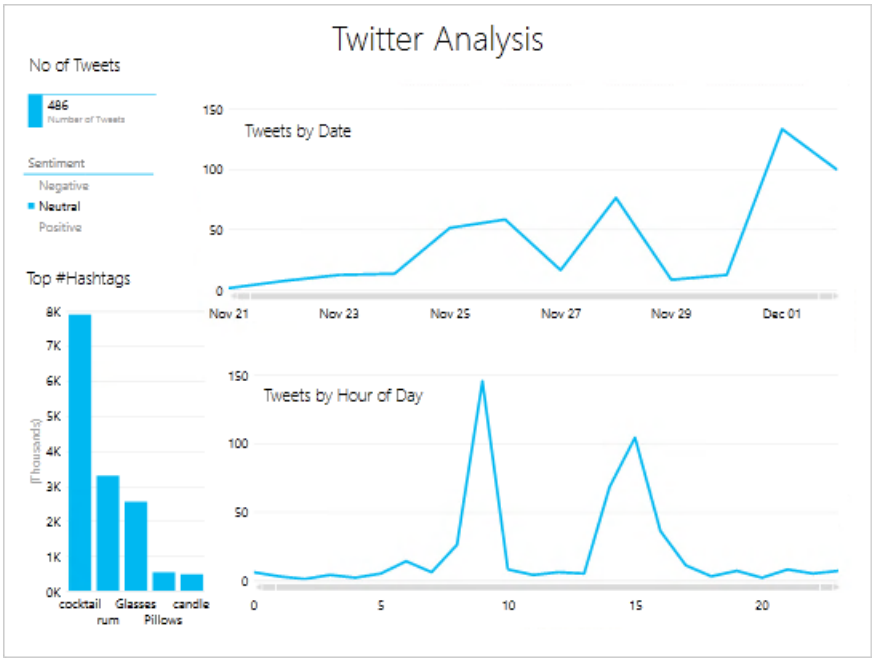

39. To group by each hour of day (rather than the sum of hour of day), in the Layout area, click the dropdown arrow for **HourOfDay** field, and then select **Do Not Summarize**.




40. Switch the table to a line chart, then resize the chart to fill the remaining report area.

41. Remove the automatic title, and add a text box to annotate the chart as **Tweets by Hour of Day**.

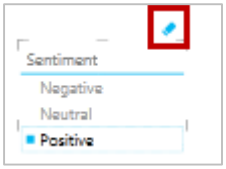
42. Verify that the final report design looks like the following.




43. To filter the report by negative sentiment, in the **Sentiment** slicer, click **Negative**.

44. Filter the report by positive sentiment.

45. To reset the filter to all sentiment types, hover over the slicer, and then click the eraser icon located at the top right corner.




### *Creating Report 2: Daily Store Interactions*

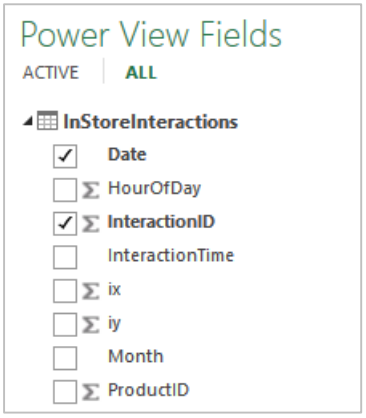
In this task, you will create the **Daily Store Interactions** report.

1. To insert a Power View report, on the **Insert** ribbon, click **Power View**.


2. Rename the report title to **Daily Store Interactions**.

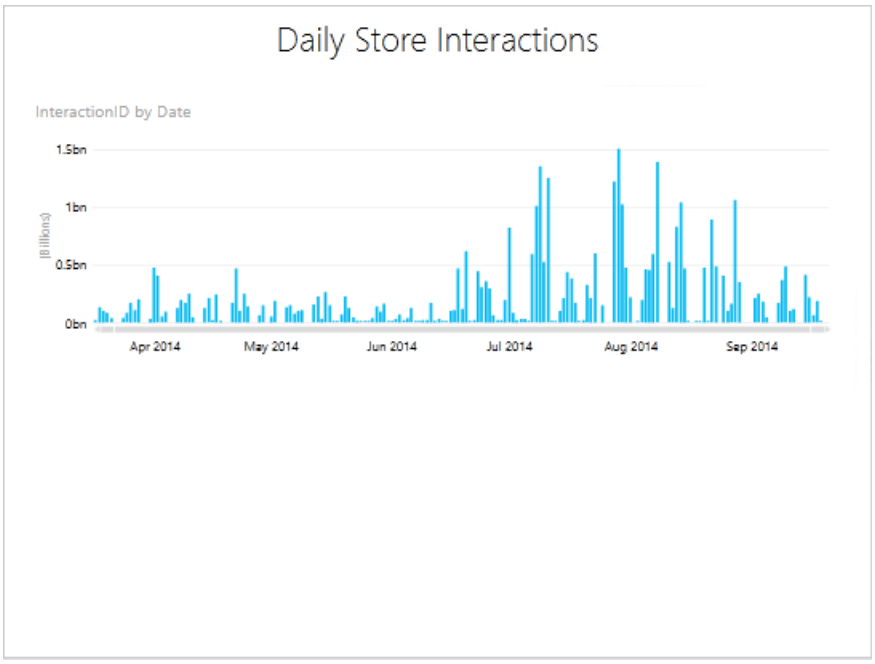
3. Rename the report tab to **Daily Store Interactions**.

4. In the **Power View Fields** pane, expand the **InStoreInteractions** table, and then check the **Date** and **InteractionID** fields.




5. Switch the visualization to the **Stacked Column** chart.

6. Resize the chart based on the following diagram.




7. Remove the automatic title.

8. To create a line chart, click a blank area of the report canvas.

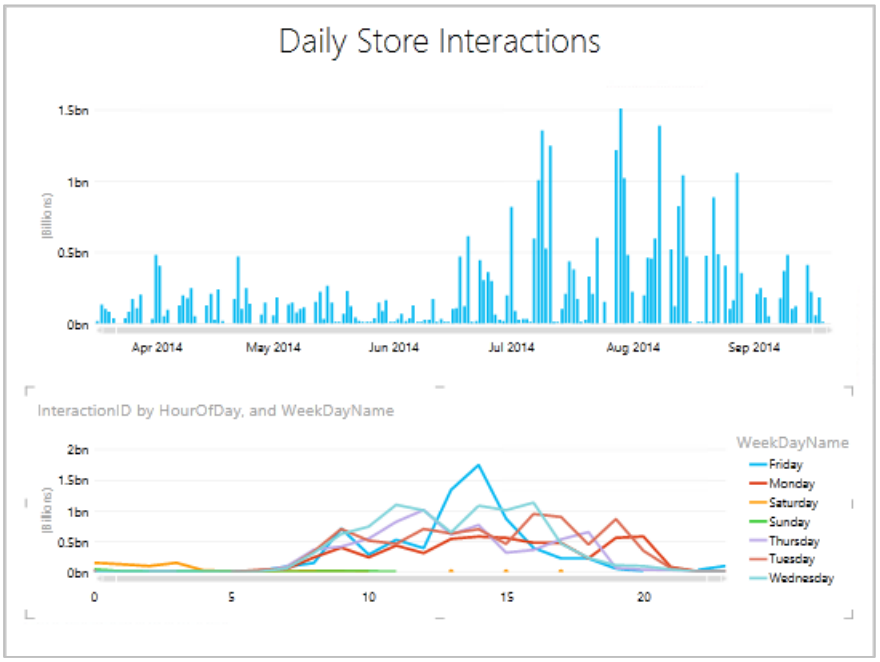
9. In the **Power View Fields** pane, expand the **InStoreInteractions** table, and then check the **HourOfDay**, and **InteractionID**.

10. Expand the **WeekDay** table, and then check the **WeekDayName** field.

11. To group by each hour of day (rather than the sum of hour of day), in the Layout area, click the dropdown arrow for **HourOfDay** field, and then select **Do Not Summarize**.

12. Switch the visualization to the **Line** chart.

13. Resize the chart based on the following diagram.




14. Remove the automatic title.

15. To reposition the legend, on the **Layout** ribbon, from inside the **Labels** group, click **Legend**, and then select **Show Legend at Top**.

### *Creating Report 3: Web vs In-Store Interactions*

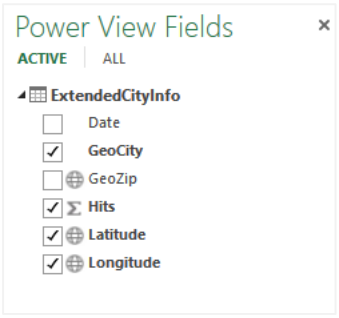
In this task, you will create the **Web vs In-Store Interactions** report.

1. Insert a new Power View report.

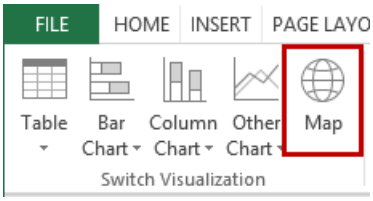
2. Rename the report title to **Web vs In-Store Interactions**.

3. Rename the report tab to **Web vs In-Store Interactions**.

4. In the **Power View Fields** pane, expand the **ExtendedCityInfo** table, and then check the **GeoCity**, **Hits**, **Latitude** and **Longitude** fields.

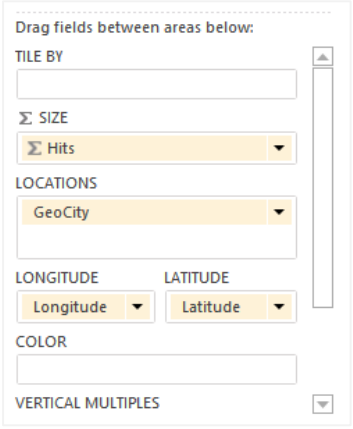



5. Switch the visualization to **Map**.

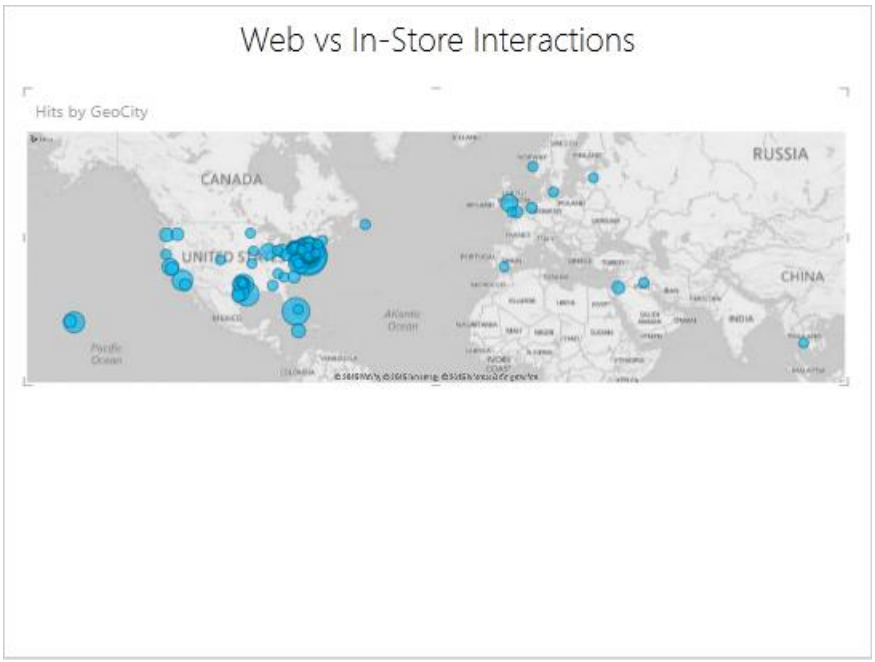



6. Switch the visualization to **Map**.

7. Review the Layout area, and notice that fields have been assigned to different drop zones. There is no need change this configuration.




8. Resize the map based on the following diagram.

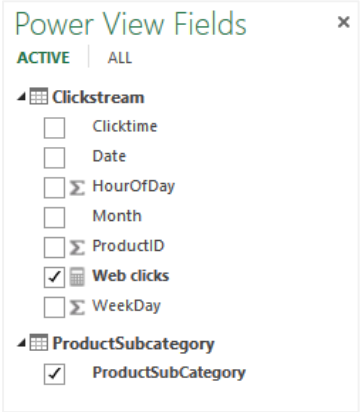



9. Remove the automatic title, and add a text box to annotate the map as **Web Hits by Geographic Location**.

10. To create a column chart, click a blank area of the report canvas.

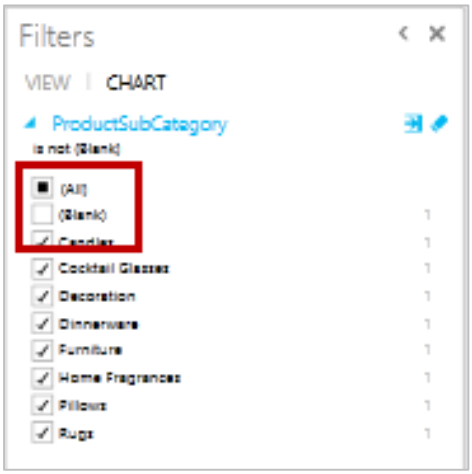
11. In the **Power View Fields** pane, expand the **Clickstream** table, and then check the **Web Clicks** field.

12. Expand the **ProductSubcategory** table, and then check the **ProductSubCategory** field.



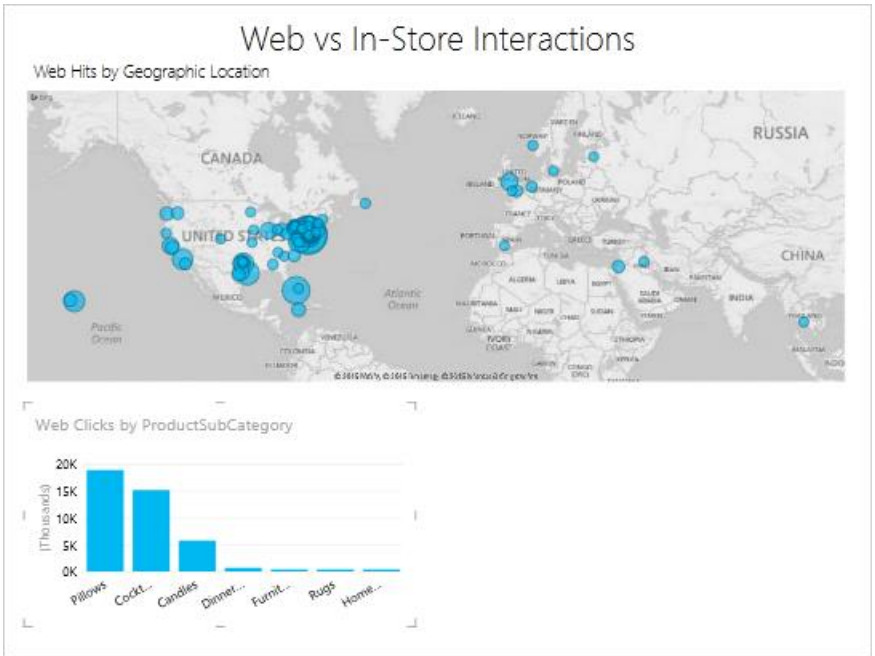

13. Switch the visualization to the **Stacked Column** chart.

14. Filter the column chart to remove blank product subcategories.




15. Sort the chart by descending web clicks.

16. Resize the chart based on the following diagram.

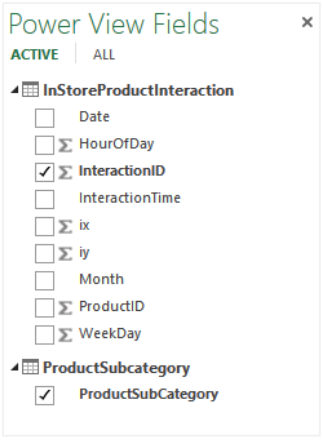



17. Remove the automatic title, and add a text box to annotate the map as **Web Clicks**.

18. To create a line chart, click a blank area of the report canvas.

19. In the **Power View Fields** pane, expand the **InStoreInteractions** table, and then check the **InteractionID** field.

20. In the **ProductSubcategory** table, check the **ProductSubCategory** field.

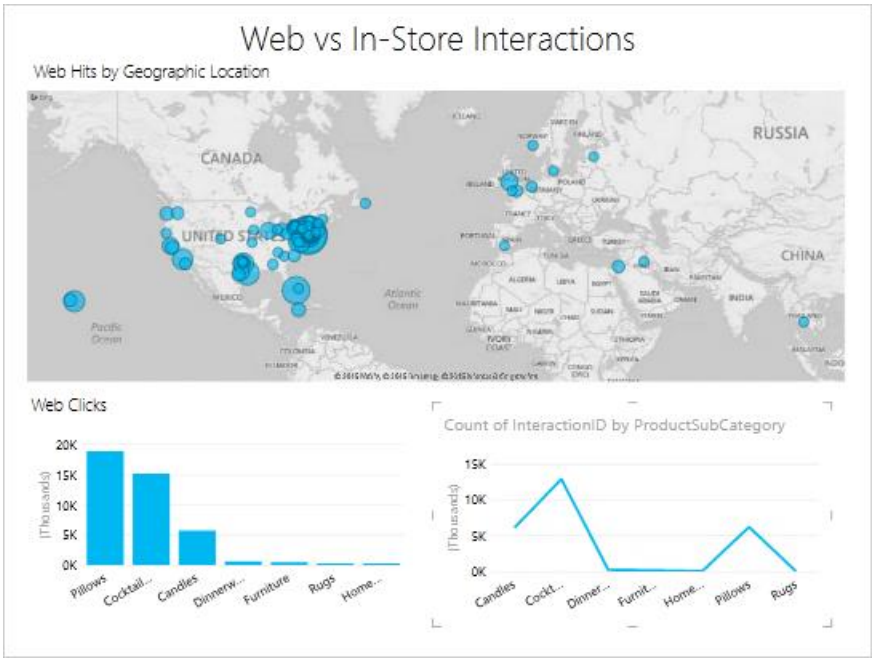



21. To count interaction IDs (rather than the sum of Interaction IDs), in the Layout area, click the dropdown arrow for **InteractionID** field, and then select **Count (Non Blank)**.

22. Switch the visualization to the **Line** chart.

23. Filter the chart to remove blank subcategories.

24. Resize the chart based on the following diagram.

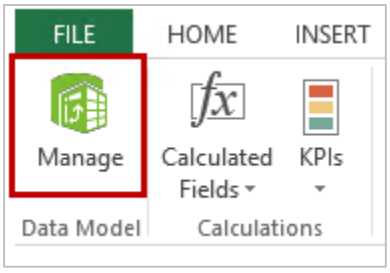



25. Remove the automatic title, and add a text box to annotate the map as **In-Store Interactions**.

### *Configuring the Data Model Images*

In this task, you will configure the Power Pivot data model to support images in Power View reports.

15. On the **PowerPivot** ribbon, click **Manage**.

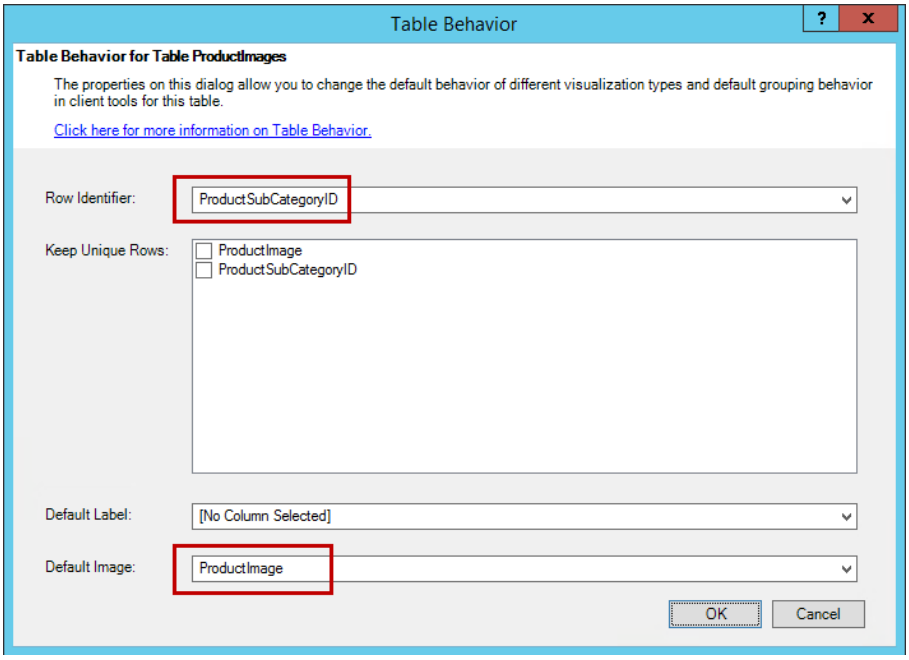



16. When the PowerPivot window opens, if necessary, maximize the window.

17. Select the **ProductImages** table.


18. On the **Advanced** ribbon, from inside the **Reporting Properties** group, click **Table Behavior**.

19. In the **Table Behavior** window, configure the following properties.

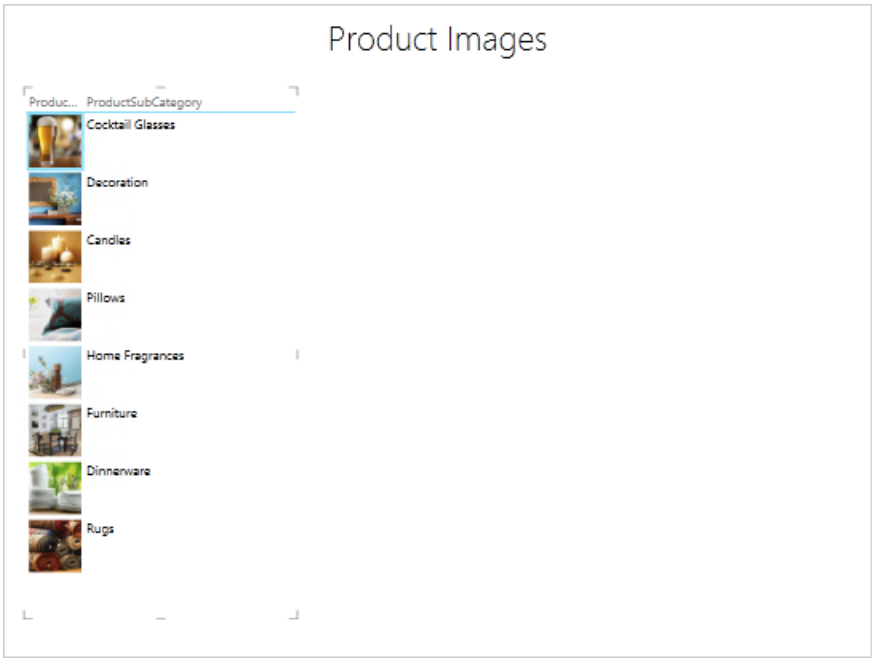



20. Click **OK**.

### *Creating Report 4: Product Images*

In this task, you will create the **Product Images** report.

1. Switch to the Excel workbook.
2. When prompted with the warning that the data model has changed, click **OK**.
3. Insert a new Power View report.
4. Rename the report title to **Product Images**.
5. Rename the report tab to **Product Images**.
6. In the **Power View Fields** pane, expand the **ProductImages** table, and then check the **ProductImage** field.
7. In the **ProductSubcategory** table, check the **ProductSubCategory** field.
8. Filter the table to remove blank subcategories.
9. Resize the table based on the following diagram.



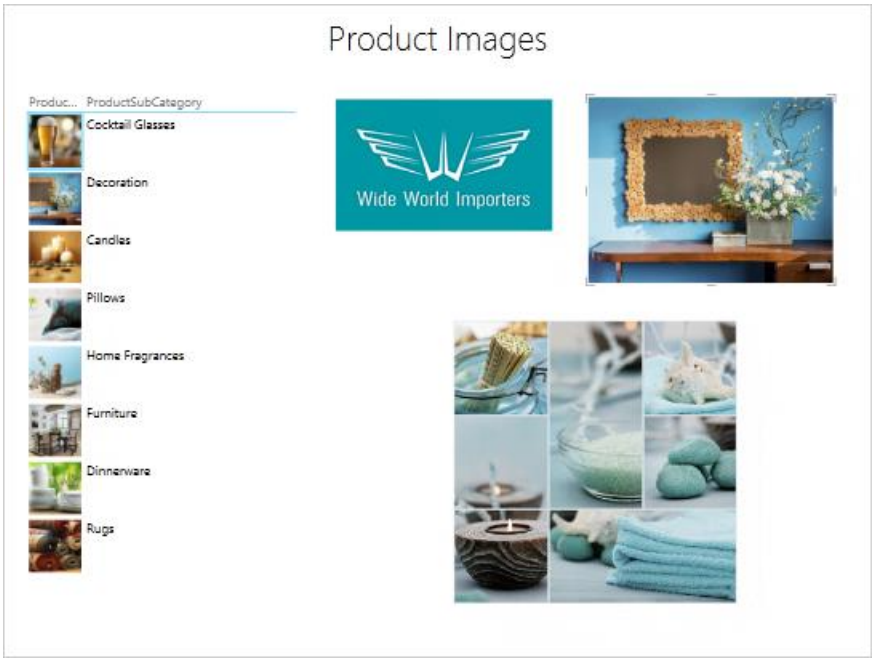

10. To add stand-alone images, on the **Power View** ribbon, from inside the **Insert** group, click **Picture**.

11. In the **Open** window, navigate to the folder with the assets for the lbas.

12. Select the **Wide World Importers Logo.png** file, and then click **Open**.

13. Add the **Bath Products.png** and **Home Decor.png** pictures also.

14. Reposition the pictures based on the following diagram.




### *Finishing Up*

In this task, you will save and close the workbook.

1. To remove the redundant worksheet, right-click the **Sheet2** worksheet (first in the sheet collection), and then select **Delete**.

2. When prompted to confirm the deletion, click **Delete**.

3. To save the workbook, on the backstage view, click **Save**.

4. To close Excel, click the **X** button at the top right corner.

In this lab, you have created four Power View reports and explored the different visualizations, filtering and interactivity capabilities.

# 5. Using Power BI on your iPhone/iPad

## Using Power BI on your iPhone/iPad

In this module, you will download and install the Power BI app to your mobile device (iPhone). You will connect to a dashboard that we introduced in a previous lab and use the app on your phone to explore the dashboard. You will annotate and share visualizations. Finally, you will set alerts and received notifications on your mobile device. You will learn:

1. Install the Power Bi App on your iPhone
2. Explore a Power BI dashboard on your iPhone
3. Annotate and share visualizations
4. Set alerts and receive notifications on your iPhone

### *Using Power BI on your iPhone*

In this exercise, you will extend the Power BI dashboard created in earlier modules with additional data to enable the analysis of sales per capita.

### *Download and Install the Power BI App from the App Store*

1. Open the **App Store** app on your iPhone and search for **Power BI**.


2. **Open**, then **Install** the **Power BI** app on your phone.

### *Sign In to Your Power BI Dashboard*

1. Open the **Power BI** app then select **Log In**


2. **Sign In** with your organizational ID. This is the same ID that you previously used to sign in to your dashboard.

### *Explore your Power BI Dashboard*

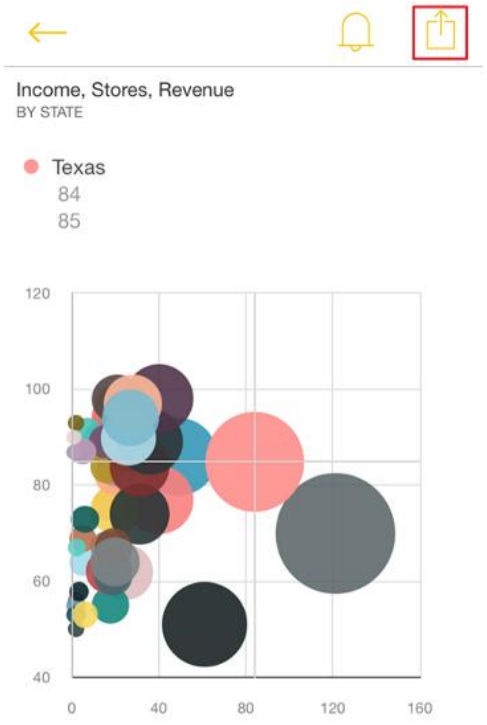
1. Tap the **Dashboards** icon at the bottom of the app.


2. **Scroll left** and **right** to select a dashboard

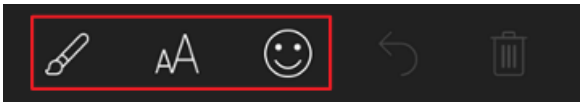
3. **Scroll up** and **down** to see different visualizations on your dashboard

4. Tap on a tile for an expanded view and to further explore a visualization

5. Select the **snapshot** icon.



6. In the bottom toolbar, select the **pencil**, **text** or **smiley** icon to annotate your snapshot.



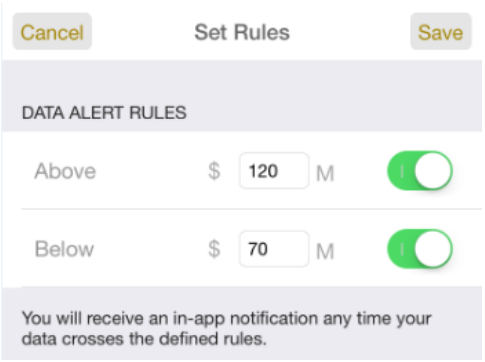
7. Select the **Cancel** button to exit the annotation mode.

### *Set up Data Alerts*

8. Tap a number tile on your dashboard to open it.

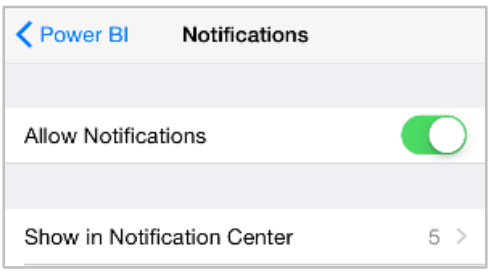
9. Tap the **bell** icon to set an alert.


10. Type numbers to receive alerts **Above** or **Below** the specified values, or both.

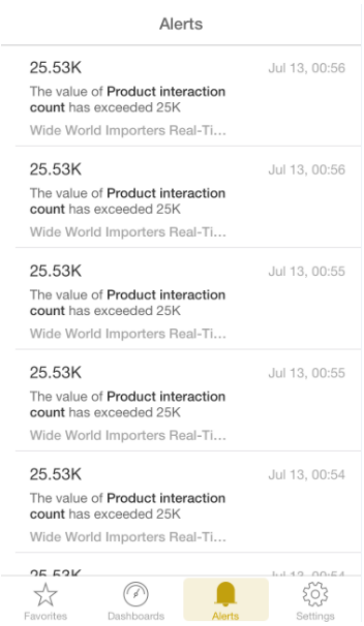



11. Tap **Save**.

12. You can control notifications for Power BI app by going to **Settings**, then **Notification Center** on your iPhone.




13. Go to the **Alerts** menu to view your alerts.




## *Summary*

In this lab, you installed the Power BI App on your iPhone and used the app to explore a Power BI dashboard. You used the app to annotate and share visualizations and you configured alerts to received notifications from your dashboard.

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