

# Getting Started with Power BI Embedding

**Setup Time:** 60 minutes

**Lab Folder:** C:\Student\Modules\01\_GettingStarted\Lab

**Overview:** This lab begins with step-by-step instructions to create a new Office 365 trial tenant to serve as a Power BI development environment. After that, you will create and test your first Visual Studio project that embeds Power BI resources including reports, dashboards and the Q&A experience. Along the way, you will leverage the Power BI Embedding Onboarding Experience which assists you by registering an Azure application in your Office 365 tenant and by creating an app workspace in Power BI and populating it with content. Once you have prepared your environment with the Power BI Embedding Onboarding Experience, you will create a new ASP.NET web application in Visual Studio and to write all the code required to embed a report, a dashboard and the Q&A experience on a custom web page.

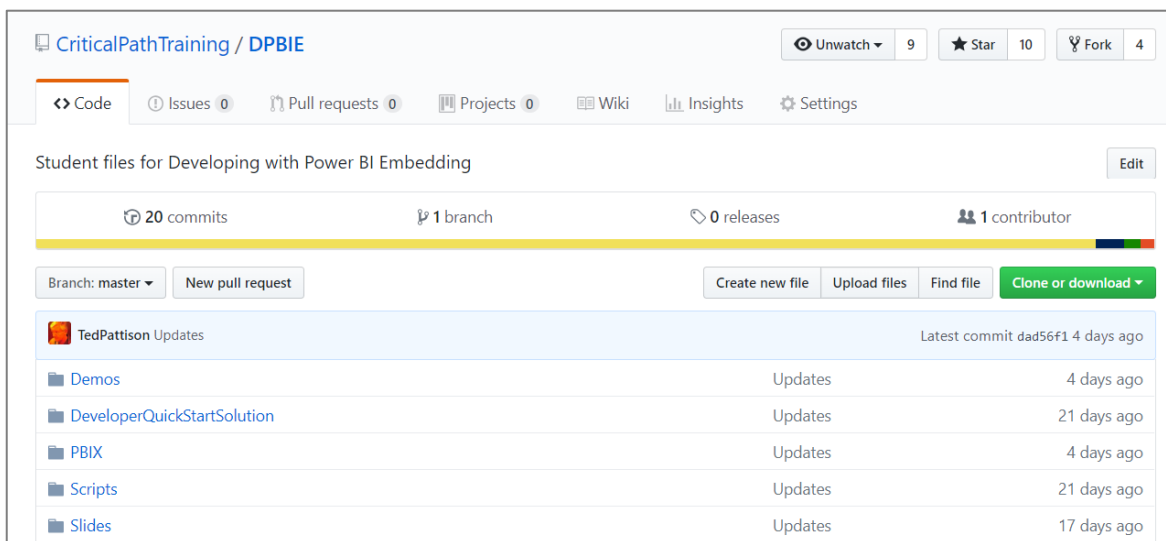
## Exercise 1: Download a Local Copy of the Student Lab Files

In this exercise, you will use the GIT utility to download a local copy of the student files from the **DPBIE** repository in GitHub. Note that this exercise assumes that GIT has already been installed on your PC as discussed in the setup guide for this course.

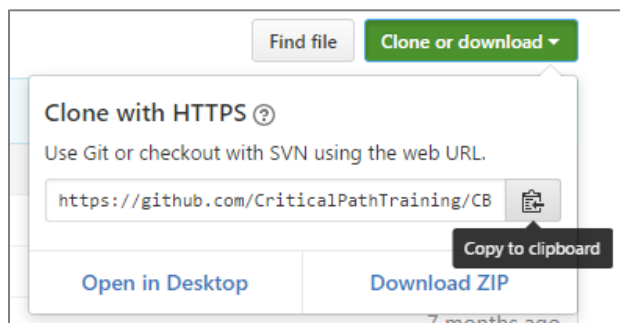
1. Launch a browser and navigate to the GitHub repository for this course at the following URL.

<https://github.com/CriticalPathTraining/DPBIE>

2. You should see the home page for the repository as shown in the following screenshot.



3. Copy the URL to clone the repository.
  - a) On the home page of the **DPBIE** repository, click the green **Clone or download** dropdown menu.
  - b) Click the **Copy to clipboard** button to copy the URL for cloning to the Windows clipboard.



4. Use GIT to clone the **DPBIE** repository.

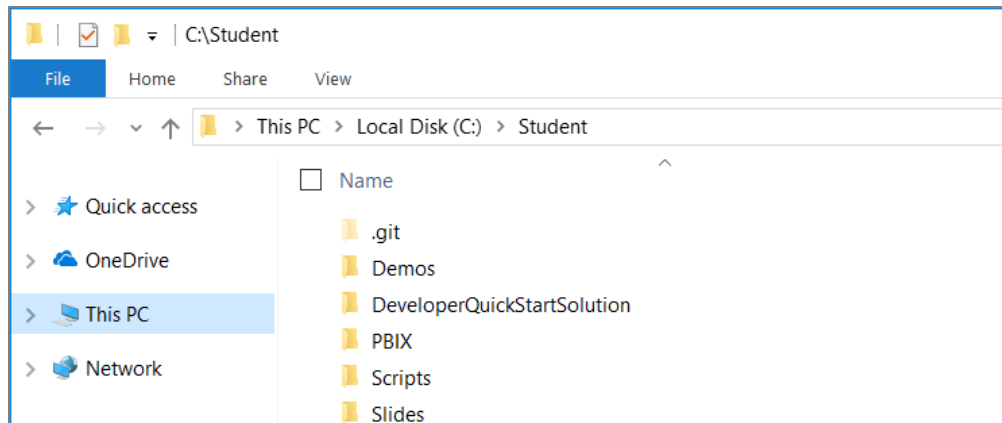
- Open up a Windows PowerShell command prompt.
- Type in and execute the following **git** command to download the student files to a local folder named **C:\Student**. Note that you copied the URL to github.com in the previous step and you can paste it from the Windows clipboard instead of typing it it.

```
git clone https://github.com/CriticalPathTraining/DPBIE.git C:\Student
```

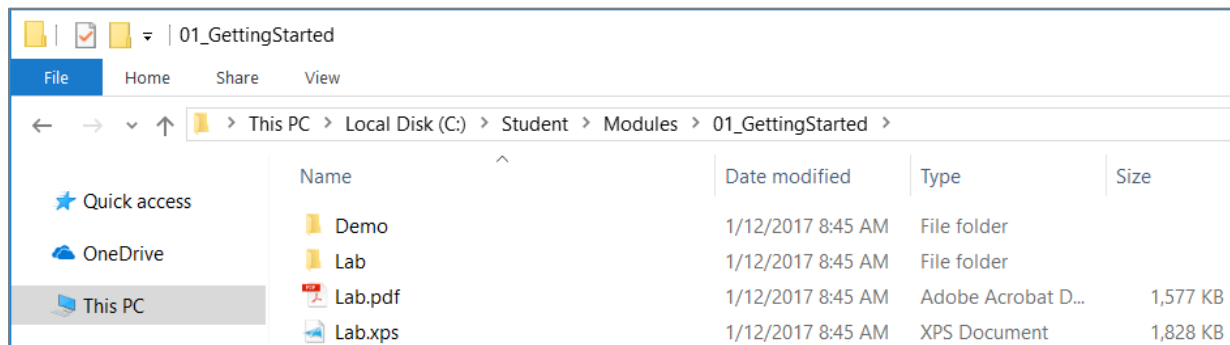
- When the **git clone** command runs, it will create a local copy of the repository on your local machine in the **C:\Student** folder.

```
Administrator: Windows PowerShell
PS C:\> git clone https://github.com/CriticalPathTraining/DPBIE.git C:\Student
Cloning into 'C:\Student'...
remote: Enumerating objects: 527, done.
remote: Counting objects: 100% (527/527), done.
remote: Compressing objects: 100% (383/383), done.
remote: Total 709 (delta 173), reused 469 (delta 117), pack-reused 182 eceiving objects: 96% (681/709), 89.04 MiB | 9.07 MiB/s
Receiving objects: 100% (709/709), 91.38 MiB | 9.44 MiB/s, done.
Resolving deltas: 100% (221/221), done.
PS C:\>
```

- When the **git clone** command completes, open Windows Explorer and examine the **Student** folder. You should be able to see the **Student** folder has child folders named **Extras**, **Modules** and **Scripts**.



- Drill into the **Modules** folder and look in the folder inside named **01\_GettingStarted**.



You can see that the **01\_GettingStarted** folder contains two child folders named **Demo** and **Lab**.

## Exercise 2 - Create an Office 365 Trial Tenant

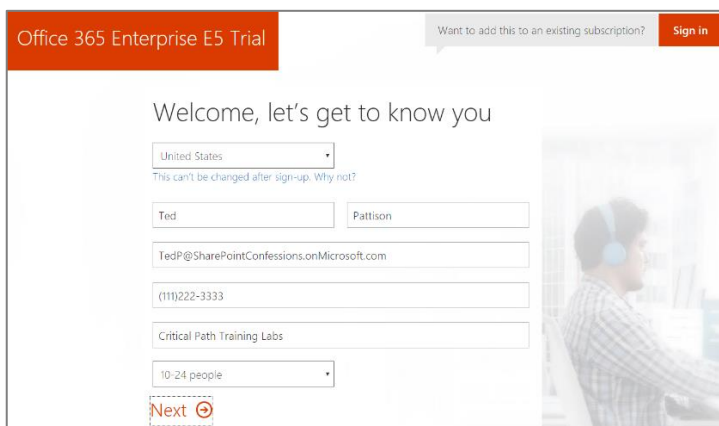
In the first exercise you will create a new Office 365 trial tenant. As you work through the sign up process for this free trial, you will be asked to provide a user name and a password for an Azure AD user account that will be configured as the tenant Global administrator. You will log in with this account when developing and testing applications that use Power BI embedding. However, it's a good practice that you also test your applications with standard user Azure AD accounts that have no administrative permissions. The trial tenant that you are going to create will allow you to create up to 25 user accounts with Office 365 E5 subscriptions. Remember that any user with an Office 365 E5 subscription is automatically assigned a Power BI Pro license as well.

1. Navigate to the Office 365 trial sign up page using an Incognito browser window.
  - a) Launch the Chrome browser.
  - b) Using the dropdown menu in the upper right, select the command to open a **New incognito window**.
  - c) Copy and paste the following URL into the address bar of the incognito window to navigate to the signup page.

<https://go.microsoft.com/fwlink/p/?LinkID=698279&culture=en-US&country=US>

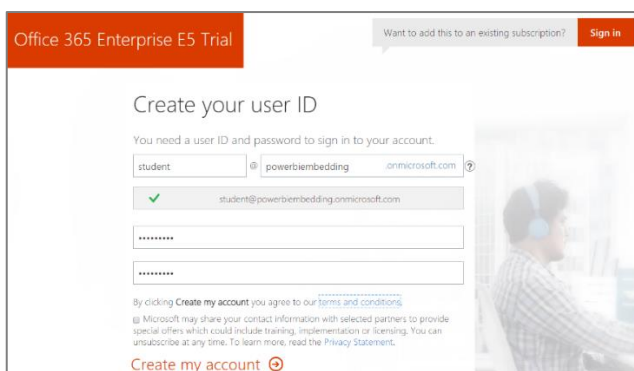
It's not always necessary to sign up for an Office 365 trial account using an incognito window. However, most errors that occur when attempting to sign up for a new trial account are caused by user-specific browser settings such as cached credentials from another Office 365 account. The solution to overcoming errors when signing up for an Office 365 trial account is using an incognito window.

2. Fill out the form with your personal information and click **Next**.



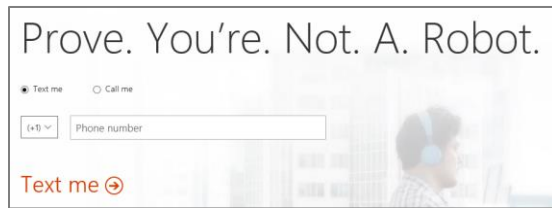
The information you provide on the next page of the signup process will be used to name your new Office 365 tenant.

3. On the **Create your user ID** page...
  - a) Enter a user name
  - b) Enter a unique company name (*you might have to try a few before you get one that's unique*)
  - c) Enter a password that you will remember.

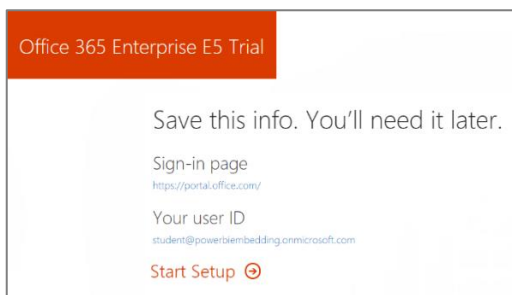


Note that the company name you enter on this page will be used to create the domain name for your new Office 365 trial tenant. For example, if you were to enter a company name of **powerbiembedding**, it would result in the creation of a new Office 365 tenant within a domain of **powerbiembedding.onmicrosoft.com**. The user name you enter will be used to create the first user account which will be given administrative rights within the Office trial tenant. If you enter a user name of **Student**, then the email address as well as user principal name for this account will be **student@powerbiembedding.onmicrosoft.com**.

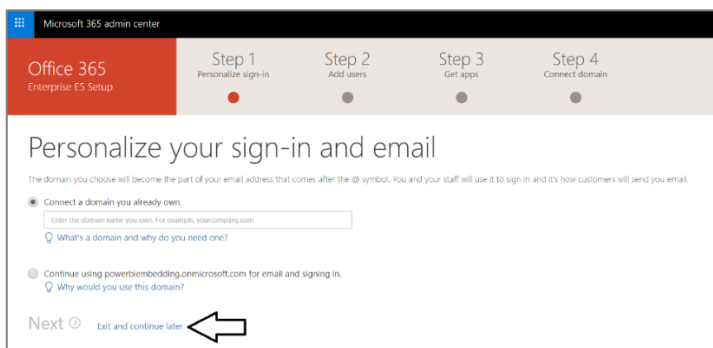
4. Click **Next** to continue to step 3.
5. Complete the validation form in step 3 by proving you are not a robot.
  - a) Select the **Text me** option and provide the number of your mobile phone.
  - b) When you go through this process, a Microsoft service will send you a text message that contains an access code.
  - c) You retrieve the access code from your mobile device and use it to complete the validation process.



6. Once you have completed the validation process, click the **You're ready to go...** link to navigate to the portal welcome page for your new Office 365 trial tenant. Note that you should already be logged on using the user account that was created during the signup process.



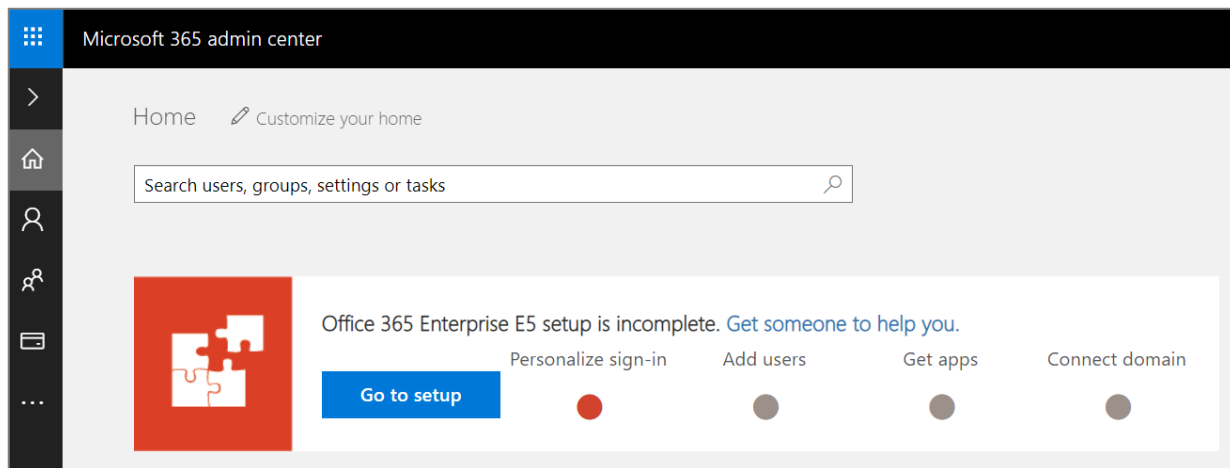
7. If you are prompted with the **Personalize your sign-in and email**, click the **Exit and continue later** link at the bottom of the page.



At this point, you have already created your new Office 365 tenant which can support creating up to 25 user accounts with Office 365 Enterprise E5 trial licenses. Note that some Office 365 services within your new Office 365 tenant such as the Microsoft 365 admin center, PowerApps, Flow and Power BI can be accessed immediately. Other services in your Office 365 tenant such as SharePoint Online, OneDrive for Business and Outlook will not be ready immediately and can take some time to provision.

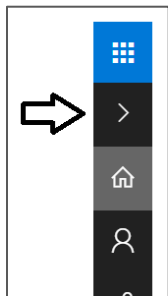
There is no more need to run the browser in incognito mode anymore because it's only required to get through the signup process. You can now return to using a standard browser window. However, it's always a good thing to check to see who you are logged in as because sometimes the browser may log you on using a different Office 365 account you have instead of your new trial account.

8. At this point, you should be located on the home page of the **Microsoft 365 admin center**.

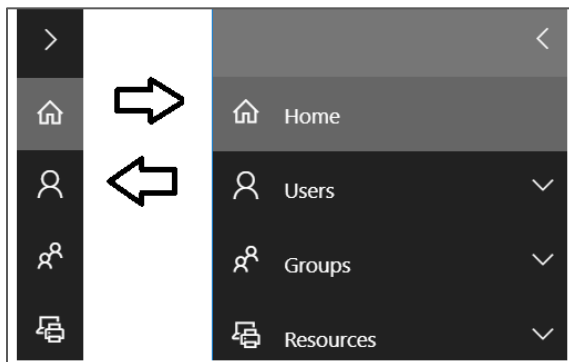


9. Inspect the set of Active Users in the current tenancy.

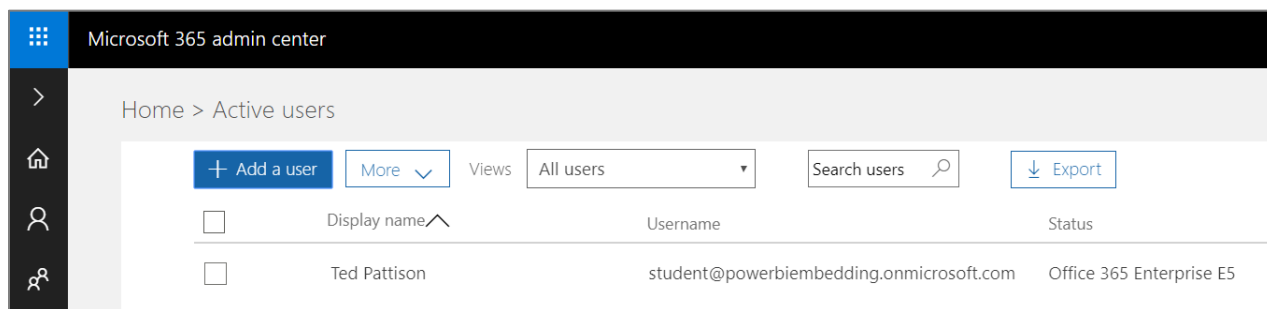
- a) Locate the top **Menu** button for the left navigation menu. It's the second button from the top with the arrow icon which sits just beneath the Office 365 App Launcher menu button.



- b) Click the top **Menu** button several times and see how it toggles the left navigation between a collapsed and expanded mode.

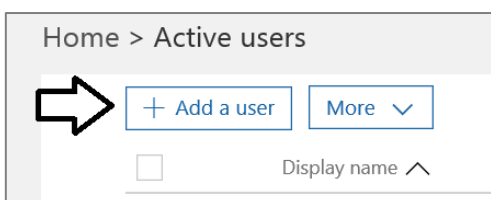


- c) Once the **Active Users** page is displayed, you should be able to verify that the user account you are currently logged on as is the only user account that exists in the current tenancy. Remember that this account has been set up as a Global Administrator to the tenant because it is the account that was used when creating the tenant.



10. Create a new user account.

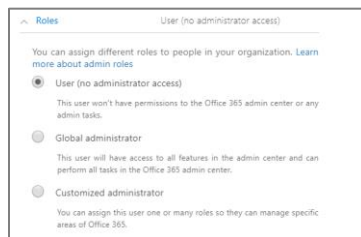
- a) On the **Active Users** page, click the button **Add a user** button to create a new user account



- b) Fill in the **Create new user account** form with information for a new user account. When creating this account, you can use any name you would like. These lab instructions will demonstrate this by creating a user account for a person named **James Bond** with a user name and email of **JamesB@powerbiembedding.onmicrosoft.com**.

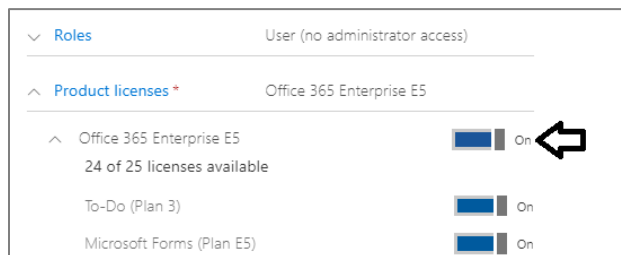
- c) Expand **Password** section under **Contact Information** section.
- Select the option for **Let me create the password**.
  - Enter a password of **pass@word1** into the textboxes labeled **Password** and **Retype Password**.
  - Uncheck the checkbox for the option labeled **Make this user change their password when they first sign in**.

- d) Expand the roles section. You do not need to change anything in this section, although you should note that this new user account will be created as a standard user account without any administrator access or privileges.

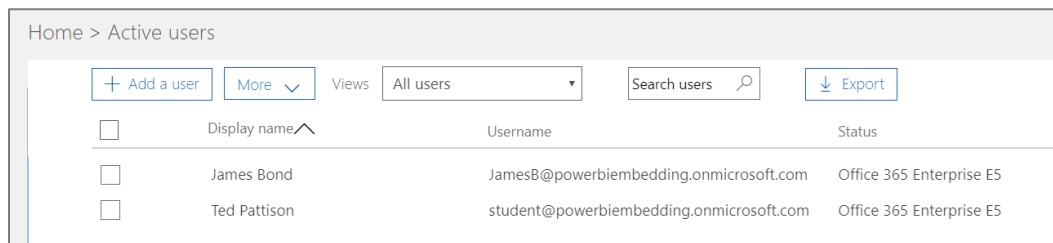


Note that the new account is usually assigned a trial license for **Office 365 Enterprise E5** plan. However, it's a good practice to check and make sure the new user has been assigned a license for **Office 365 Enterprise E5** which includes the **Power BI Pro** license.

- e) In the **Product licenses** section, make sure the **Office 365 Enterprise E5** license is set to **On**.



- f) Click the **Save** button at the bottom of the new user form to create the new user account.  
g) When you see the **User was added** message, click **Send email and close** to dismiss the **Add new user** task pane.  
h) Verify that the new user account has been created and is displayed along with your primary user account.



Now you have a secondary user account that does not have any administrative permissions. It's important that you test applications which use first-party embedding with standard user accounts to ensure your application doesn't require users with special permissions.

### Exercise 3: Create New Azure AD User Accounts using a PowerShell Script

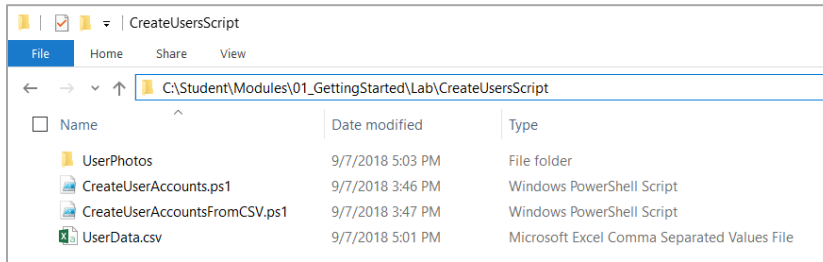
In this exercise, you will use the Azure AD PowerShell module to verify connectivity to your Office 365 tenant and to create a few new user accounts in your new Active Directory tenant..

11. Open and review the PowerShell script named **CreateUserAccountsFromCSV.ps1**.

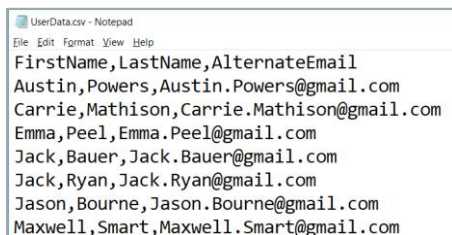
a) Using Windows Explorer, open the folder at the following location.

**C:\Student\Modules\01\_GettingStarted\Lab\CreateUsersScript**

b) You should see several files including **UserData.csv** and **CreateUserAccountsFromCSV.ps1**.

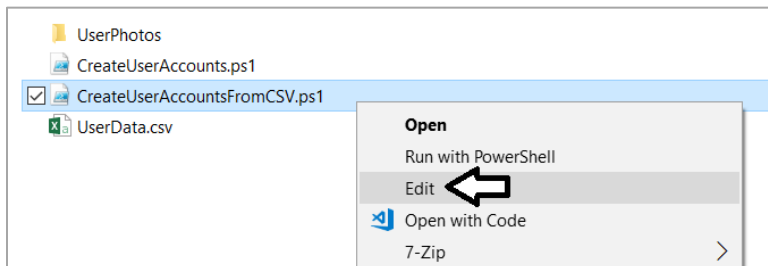


c) Open **UserData.csv** file in Notepad and examine the data inside which is formatted in a CSV format.

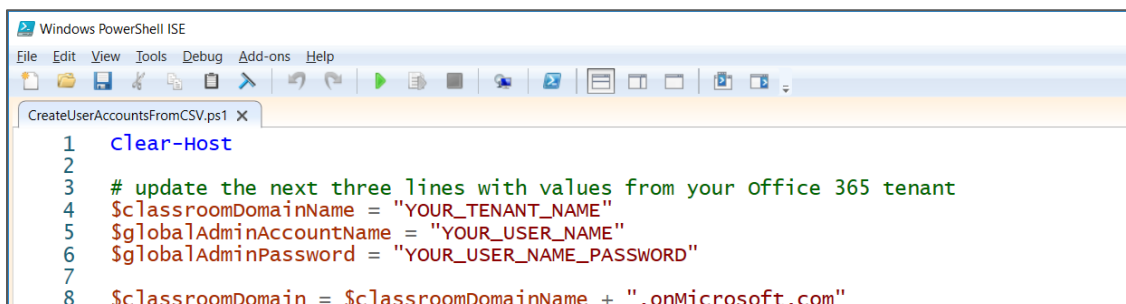


d) Close **UserData.csv** without saving any changes.

e) Right click on the file named **CreateUserAccountsFromCSV.ps1** and click Edit to open the file in the PowerShell ISE.



f) Take a moment to walk through the code in this PowerShell script.





- g) As you can see, the script creates new Azure AD user accounts using the **New-AzureADUser** cmdlet.

```
$password = "pass@word1"
$passwordProfile = New-Object -TypeName Microsoft.Open.AzureAD.Model.PasswordProfile
$passwordProfile.Password = $password
$passwordProfile.EnforceChangePasswordPolicy = $false
$passwordProfile.ForceChangePasswordNextLogin = $false

$secureStringPassword = ConvertTo-SecureString -String "pass@word1" -AsPlainText -Force

# Create new user account
$newUser = New-AzureADUser `
    -DisplayName $displayName `
    -GivenName $firstName `
    -Surname $lastName `
    -MailNickname $mailNickname `
    -PasswordProfile $passwordProfile `
    -PasswordPolicies "DisablePasswordExpiration, DisableStrongPassword" `
    -UserPrincipalName $userPrincipalName `
    -UsageLocation "US" `
    -AccountEnabled $True
```

Note that any user account created with this script will have a password of **pass@word1**.

- h) Move to the top of the script and edit the script to include the details for your tenant name, user account and password.

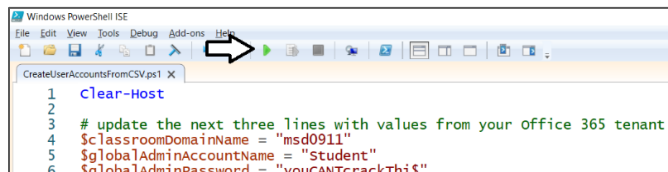
```
# update the next three lines with values from your office 365 tenant
$classroomDomainName = "msd0911"
$globalAdminAccountName = "Student"
$globalAdminPassword = "youCANTcrackThi$"
```

- i) Save your changes to **CreateUserAccountsFromCSV.ps1**.

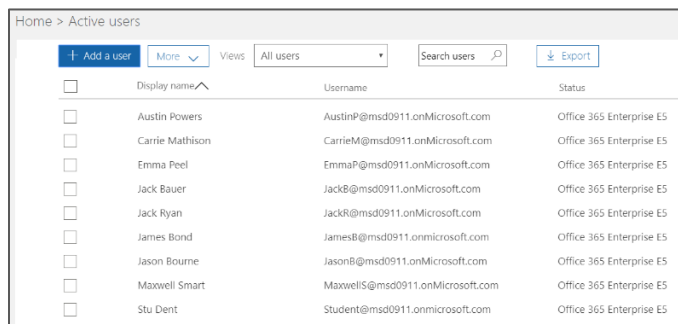
In the next step you will execute the PowerShell script which means you must have the ability to run PowerShell scripts on your Windows PC. If you are not able to run PowerShell scripts, you might need to open a PowerShell prompt as Administrator and then execute the **Set-ExecutionPolicy Bypass** command.

12. Run the PowerShell script named **CreateUserAccountsFromCSV.ps1** to create new user accounts in your new AD tenant.

- a) Inside the Windows PowerShell ISE, click the green arrow button on the toolbar to execute the script.



- b) Once the script executes, return to the **Active users** view in Office 365 admin center to verify new users have been created.

A screenshot of the Office 365 Admin Center 'Active users' view. The page title is 'Home > Active users'. There are buttons for 'Add a user', 'More', 'Views', 'All users', 'Search users', and 'Export'. Below the buttons is a table with columns for 'Display name', 'Username', and 'Status'. The table lists ten users, each with a checkbox in the first column.

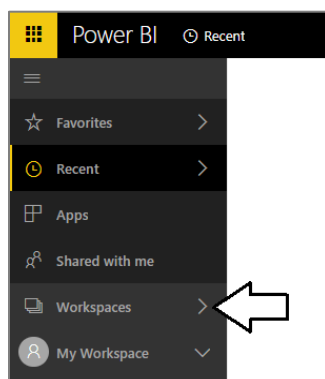
	Display name	Username	Status
<input type="checkbox"/>	Austin Powers	AustinP@msd0911.onmicrosoft.com	Office 365 Enterprise E5
<input type="checkbox"/>	Carrie Mathison	CarrieM@msd0911.onmicrosoft.com	Office 365 Enterprise E5
<input type="checkbox"/>	Emma Peel	EmmaP@msd0911.onmicrosoft.com	Office 365 Enterprise E5
<input type="checkbox"/>	Jack Bauer	JackB@msd0911.onmicrosoft.com	Office 365 Enterprise E5
<input type="checkbox"/>	Jack Ryan	JackR@msd0911.onmicrosoft.com	Office 365 Enterprise E5
<input type="checkbox"/>	James Bond	JamesB@msd0911.onmicrosoft.com	Office 365 Enterprise E5
<input type="checkbox"/>	Jason Bourne	JasonB@msd0911.onmicrosoft.com	Office 365 Enterprise E5
<input type="checkbox"/>	Maxwell Smart	MaxwellS@msd0911.onmicrosoft.com	Office 365 Enterprise E5
<input type="checkbox"/>	Stu Dent	Student@msd0911.onmicrosoft.com	Office 365 Enterprise E5

Note, there are user photos in the folder at **C:\Student\Modules\01\_GettingStarted\Lab\CreateUsersScript\UserPhotos** if you want to upload photos for each of these users. Uploading user photos is not required so we leave this as an optional exercise for the reader.

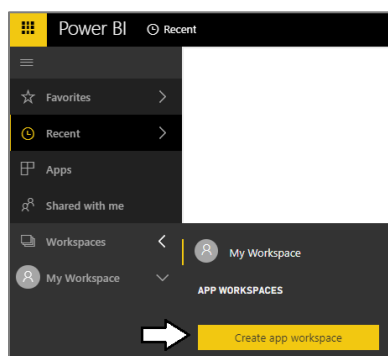
## Exercise 4: Create New App Workspaces for a Custom Solution

In this exercise, you will create a new dashboard using the dataset and report you created in early labs using Power BI Desktop.

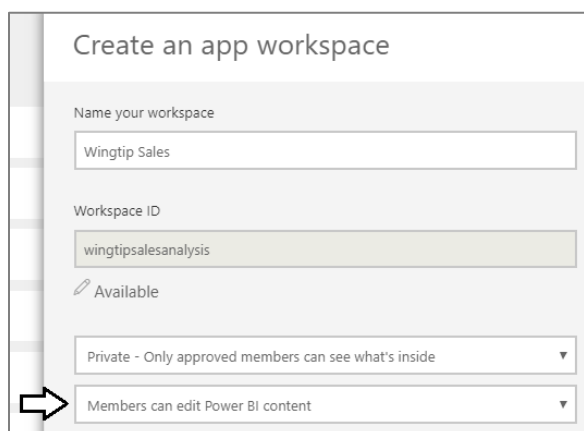
1. Make sure you are logged into the Power BI service with your primary user account
  - a) Verify that you are running in the context of your personal workspace which is named **My Workspace**.
2. Create a new app workspace named **Wingtip Sales**.
  - a) Click the **Workspace** flyout menu in the left navigation.



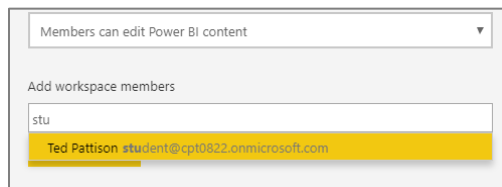
- b) Click the **Create app workspace** button to display the **Create an app workspace** dialog.



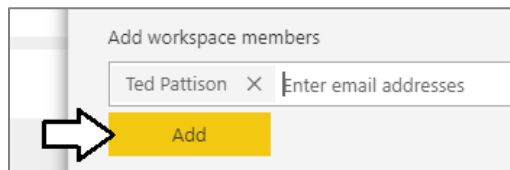
- c) In the **Create an app workspace** pane, enter a new group name of **Wingtip Sales**.
- d) Note that by default, a new group has a setting of **Members can edit Power BI content**. Leave this setting with its default value since you are creating a new group workspace for team development.



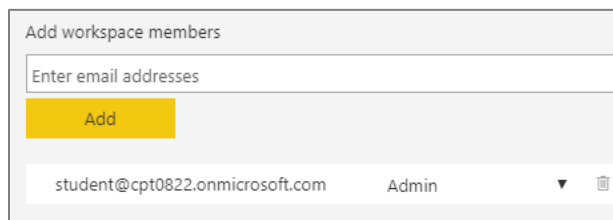
- e) In the **Add workspace members** section, add in the email address for your primary Office 365 account.



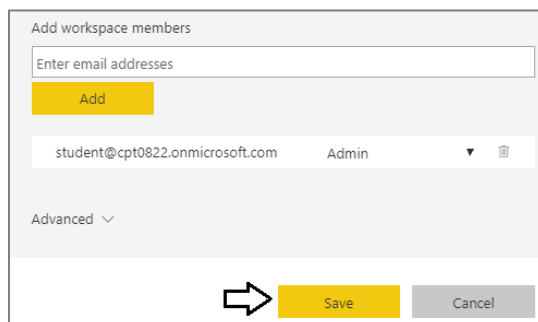
- f) Once your account name has been resolved, click **Add** to add your account as a member of the new group workspace.



- g) Modify the account to be an **Admin** instead of a standard **Member**.



- h) Click the **Save** button to create the new group workspace named **Wingtip Sales Analysis**.



- i) When you click **Save**, the Power BI service should create the new app workspace and then switch your current Power BI session to be running within the context of this new group workspace.

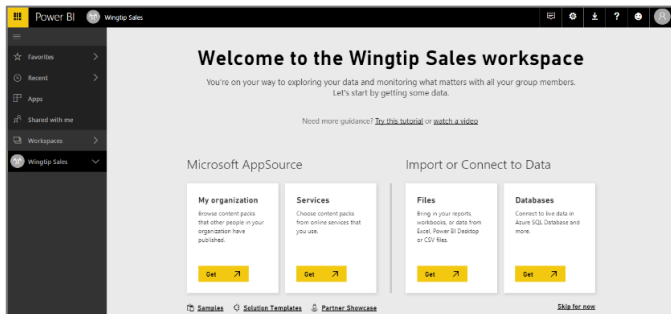


Now you have created the foundation for managing the lifecycle of Power BI dashboards and reports where they can be created and tested in an app workspace and then pushed out into production with an app that is published from the app workspace.

## Exercise 5: Publish a Power BI Desktop Project to the Wingtip Sales App Workspace

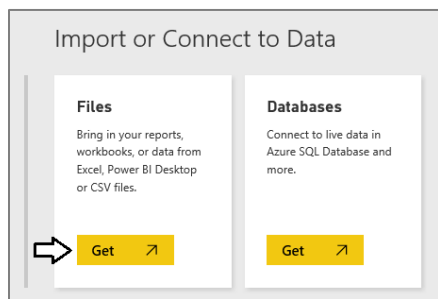
In this exercise, you add content to the Wingtip Sales app workspace by uploading the PBIX file for the Wingtip Sales Analysis project you created in early labs using Power BI Desktop.

3. Navigate to the **Wingtip Sales** app workspace that you created in the previous exercise. This workspace should currently display the standard Welcome page because it does not yet contain any datasets, reports or dashboards.

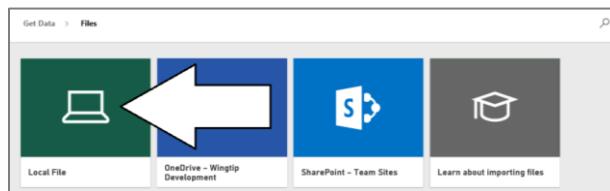


4. Import the **Wingtip Sales Analysis.pbix** project into the **Wingtip Sales** app workspace.

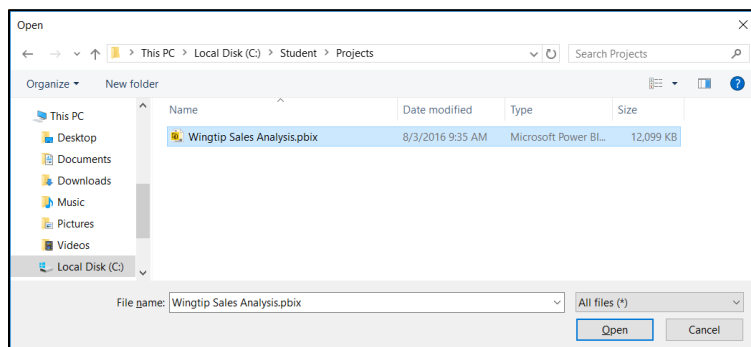
- a) On the Welcome page, click the **Get** button in the **Files** section.



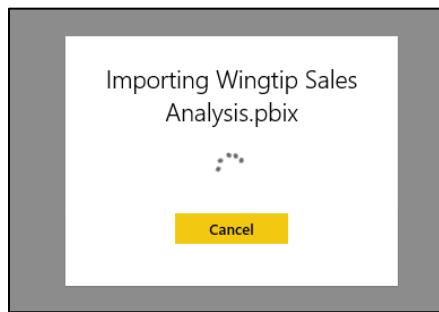
- b) On the **Get Data > Files** page, click the **Local File** button to display the Windows **Open** file dialog.



- c) In the Windows **Open** file dialog, select the project file at **c:\Student\Projects\Wingtip Sales Analysis.pbix** and click **Open**.



- d) Wait while the Power BI service uploads the PBIX files and imports its assets into the **Wingtip Development** group workspace

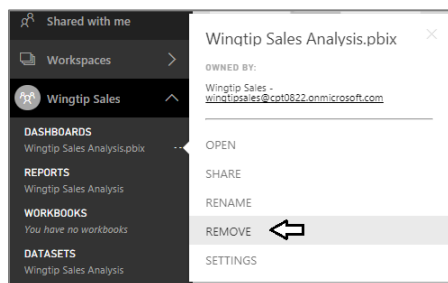


- e) Once the import process completes, you should see a new dataset, a new report and a new dashboard in the left nav menu.

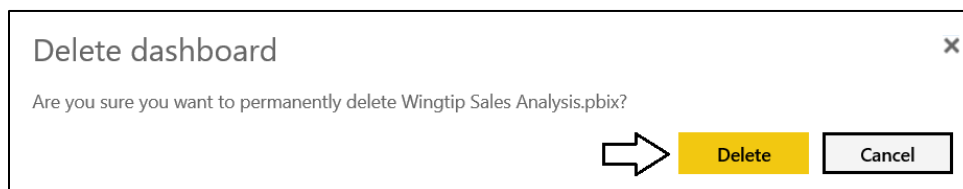


5. Remove the dashboard that was created during the import process.

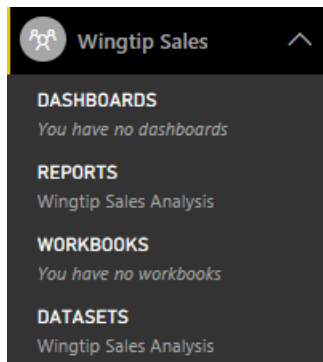
- a) Dropdown the flyout menu for the **Wingtip Sales Analysis.pbix** dashboard and click the **REMOVE** menu command.



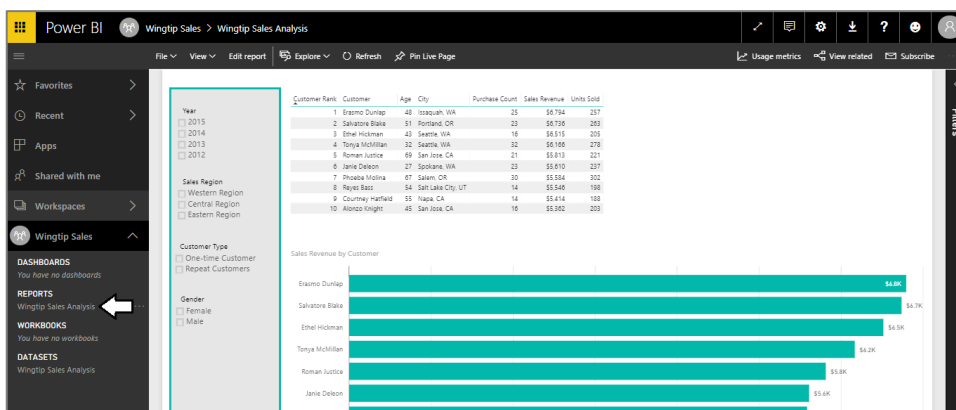
- b) Confirm that you want to delete the dashboard by clicking the **Delete** button the **Delete dashboard** dialog.



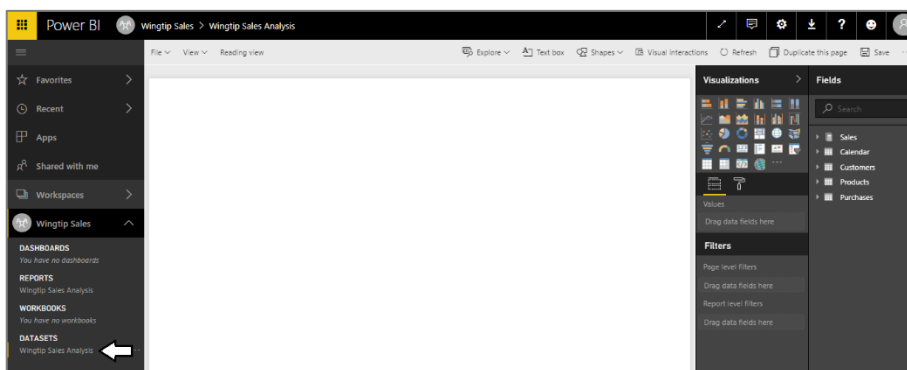
- c) You should be able to confirm that the dashboard has been removed.



6. Click on the report named **Wingtip Sales Analysis** in the **Reports** section. Examine the pages in the report and verify that these are the same report pages that you have been designing over the last several labs.



7. Click on the dataset named **Wingtip Sales Analysis** in the **Datasets** section. The Power BI service responds by displaying a new report that allows you to begin adding visuals.



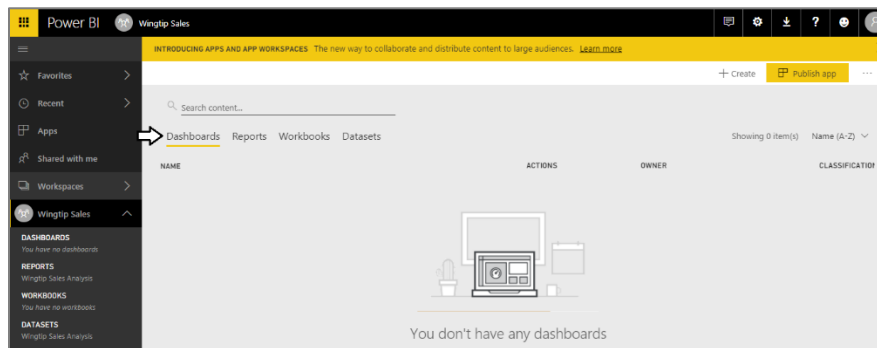
When you navigate to a dataset in the Power BI service, it provides a different experience compared to when in Power BI Desktop. That's because Power BI Desktop allows you to customize and extend a dataset while the browser-based experience of the Power BI service only allows you to consume datasets but not to modify them. Given the fact that a dataset is a read-only object, the Power BI service responds to user's request to navigate to a dataset by opening a new report and showing the **Fields** list for that dataset.

## Exercise 6: Create and Design the Product Sales Dashboard

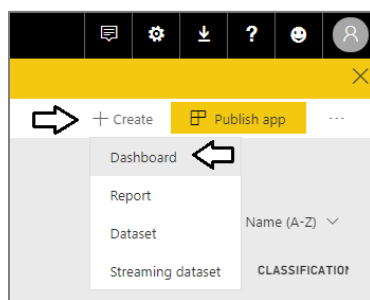
In this exercise you will create a new dashboard using the dataset and report you created in the **Wingtip Sale Analysis** project.

8. Create the **Wingtip Sales Analysis** dashboard.
- a) Ensure you are running in the context of the **Wingtip Sales** app workspace.

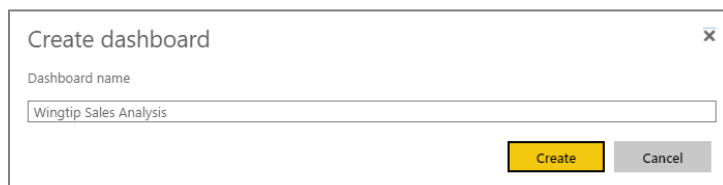
- b) Examine the **Dashboards** tab for this app workspace. It should be empty.



- c) Click the **Create** dropdown menu button at the top right and click **Dashboard** to create a new dashboard.



- d) Type in a new dashboard name of **Wingtip Sales Analysis** and click **Create**.



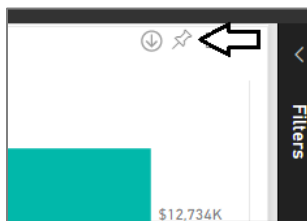
- e) At this point, you have now created a new dashboard which is initially empty of tiles.



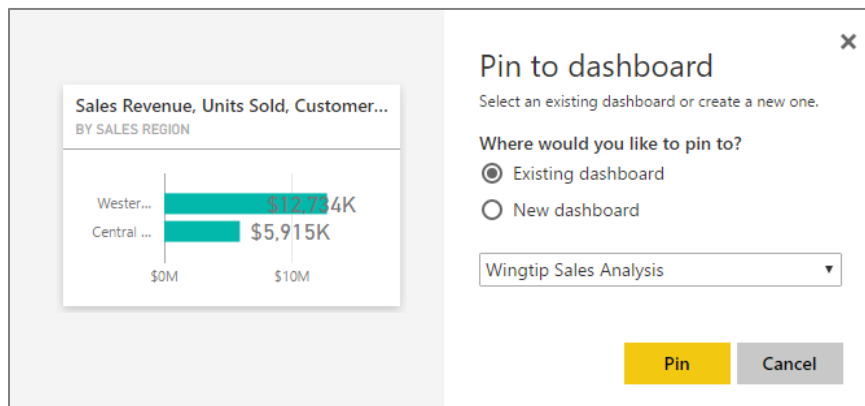
9. Pin a report visual to create a new dashboard tile.
- Click on the report named **Wingtip Sales Analysis** in the **Reports** section of the left navigation.
  - Navigate to the **Customer Geography Drilldown** page using the page navigation menu at the bottom of the report.



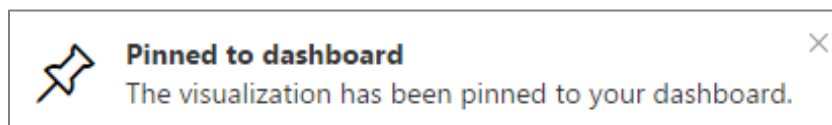
- c) Hover the mouse over the top right corner of the bar chart visual on the **Customer Geography Drilldown** page.
- d) Click on the button with the thumbtack icon in the top right corner of the bar chart visual.



- e) In the **Pin to dashboard** dialog, click the **Pin** button to create a new dashboard tile from the report visual.



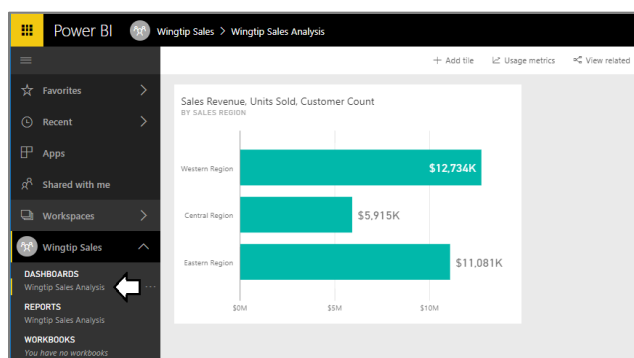
- f) The Power BI service acknowledges the creation of the new dashboard tile with a **Pinned to dashboard** notification.



You will see the a **Pinned to dashboard** notification several more times during this lab. You can simply dismiss it each time you see it.

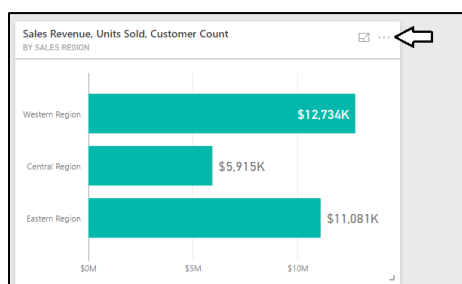
10. Inspect the new tile you've created on the **Wingtip Sales Analysis** dashboard.
  - a) Click on the **Wingtip Sales Analysis** dashboard in the left navigation.
  - b) You should see a new tile that has been created from the report visual you just pinned to the dashboard.



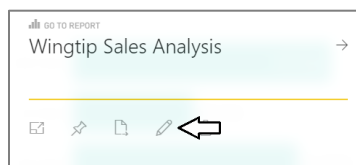


11. Update the **Title** property and the **Subtitle** property of the new dashboard tile.

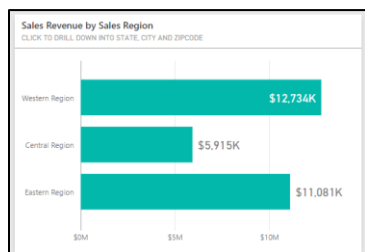
- a) Hover the mouse of the top right corner of the dashboard tile and click the ellipse (...) menu.



- b) On the tile's menu page, click on the button with the pen icon to navigate to the **Tile details** page.



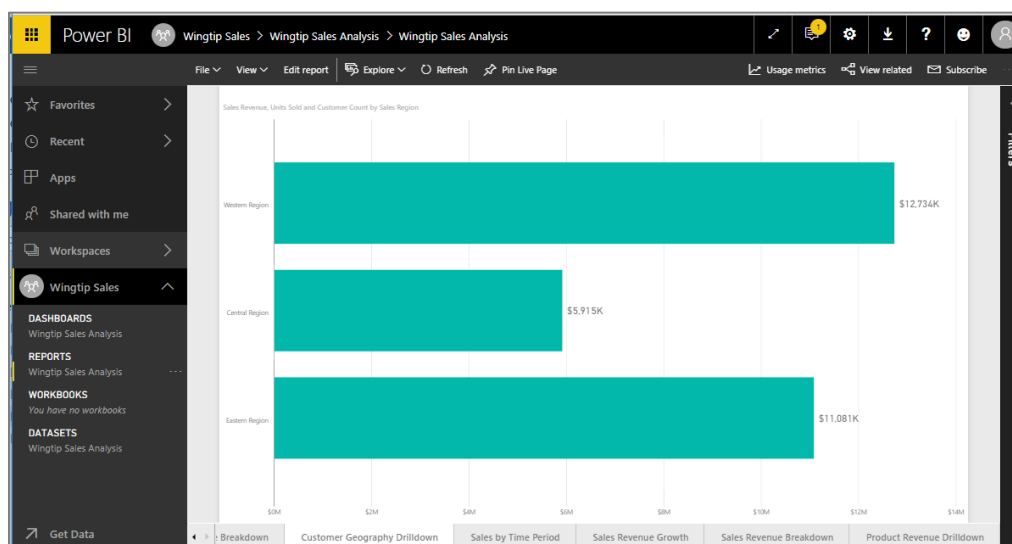
- c) On the **Tile details** page, update the tile **Title** property to **Sales Revenue by Sales Region**.  
d) Update the tile **Subtitle** property to **Click to drill down into state, city and zipcode**.  
e) Click the **Apply** button at the bottom of the **Tile details** page to save your changes to the title and subtitle.  
f) Verify the dashboard tile now displays the new title and subtitle.



Remember that dashboard tiles can be used for navigation. When a user clicks on a dashboard tile created from a visual in a report, the user is redirected to underlying report page which hosts that visual.

12. Click on the dashboard tile to navigate to a report for further drill down.

- a) Click on the dashboard tile to navigate to the page in the **Wingtip Sales Analysis** with the bar chart visual.



- b) Hover the mouse over the top right corner of the bar chart visual to display its menu buttons.

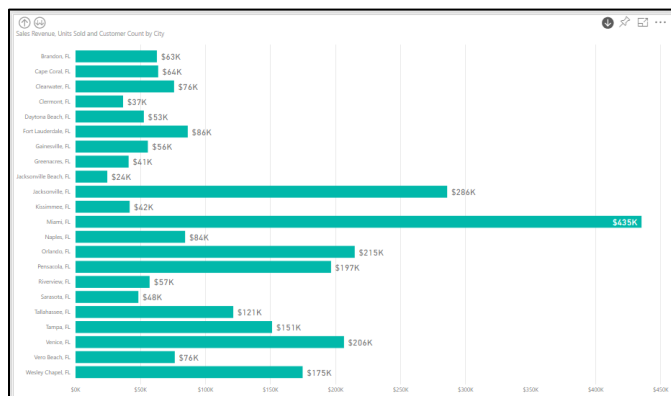


- c) Click on the **Drilldown** to enable drill down mode for this report page.



It is unfortunate but the Power BI platform does not currently save the drilldown mode setting when you save a report. That means you must enable drilldown mode each time you want to drill down into a greater level of detail.

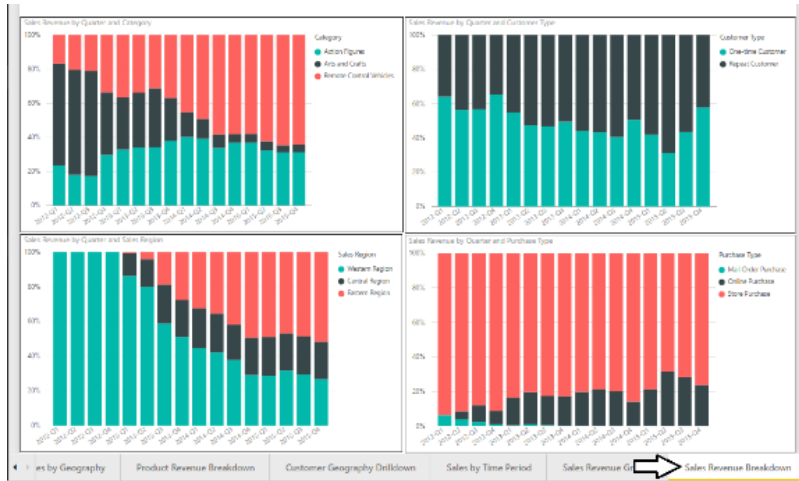
- d) Click on the bar of the **Eastern Region** to see the sales revenue breakdown of the states in that sales region.  
e) Click on the bar for **FL** to see the sales revenue breakdown of the cities in Florida.



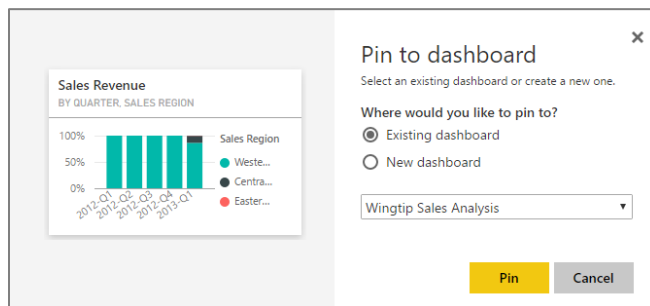
The purpose of the last few steps has been to emphasize the general relationship between dashboard and reports in the Power BI platform. Dashboard are generally used to show high-level detail and reports are designed to complement dashboards by giving users an opportunity to drill down into a much greater level of detail and specificity when desired.

13. Pin two more report visuals to create new dashboard tiles.

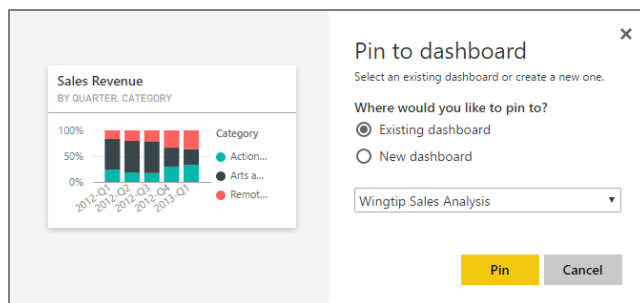
- Click on the report named **Wingtip Sales Analysis** in the **Reports** section of the left navigation.
- Navigate to the **Sales Revenue Breakdown** page using the page navigation menu at the bottom of the report.



- Pin the visual in the bottom left corner of the page by clicking the thumbtack icon in the top right corner.
- Click the **Pin** button when you see the **Pin to dashboard** dialog.

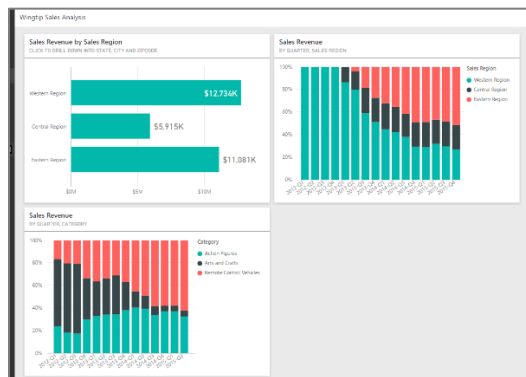


- Pin the visual in the top left corner of the page by clicking the thumbtack icon in the top right corner.
- Click the **Pin** button when you see the **Pin to dashboard** dialog.

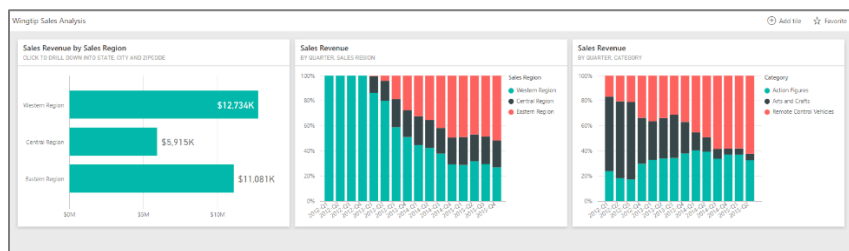


14. Inspect and reposition the two new tiles you've created on the **Wingtip Sales Analysis** dashboard.

- Click on the **Wingtip Sales Analysis** dashboard in the left navigation.
- You should see the two new tiles in addition to the other tile you created earlier.

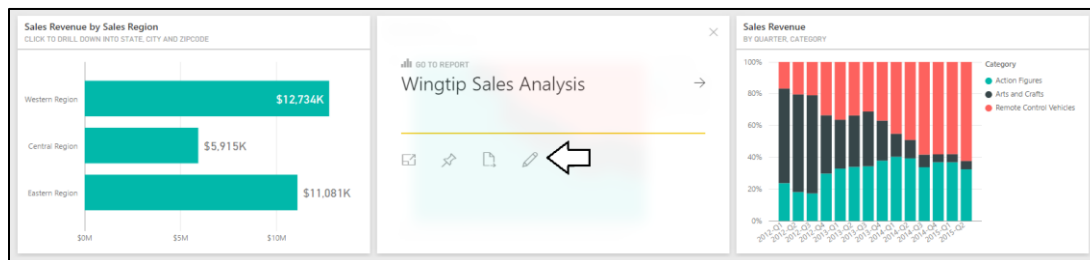


- c) Use the mouse to move the third tile so it sits to the right of the other two tiles.

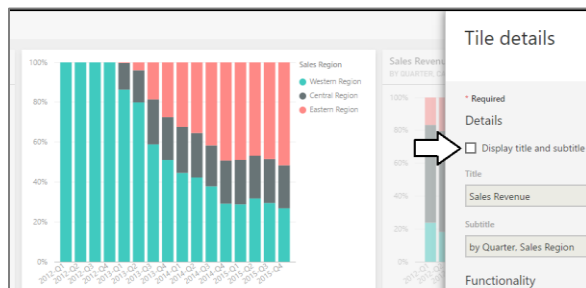


15. Modify the two new tiles so that they do not display a title or subtitle.

- a) Hover the mouse of the top right corner of the middle dashboard tile and click the ellipse (...) menu.  
b) On the tile properties view, click the button with the pen icon to navigate to the **Title details** page.



- c) On the **Title details** page, uncheck the **Display title and subtitle** checkbox and then click the **Apply** button.

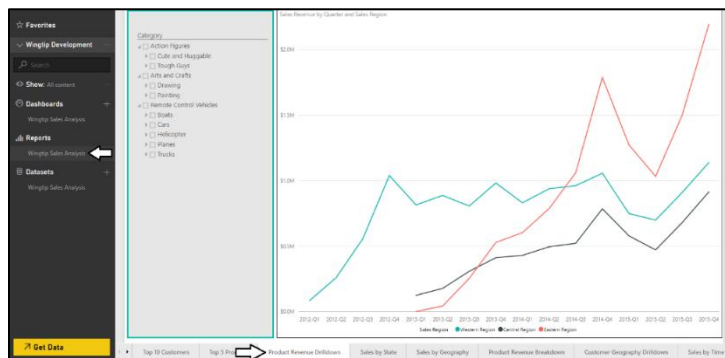


- d) Follow the same steps to hide the title and subtitle for the tile on the right.  
e) At this point, the two new titles should be displaying without a title or a subtitle.

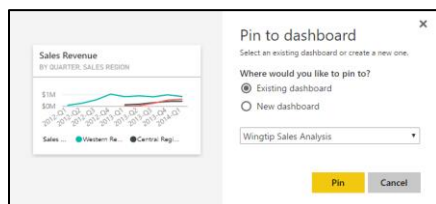


16. Pin another report visual to create a fourth dashboard tile.

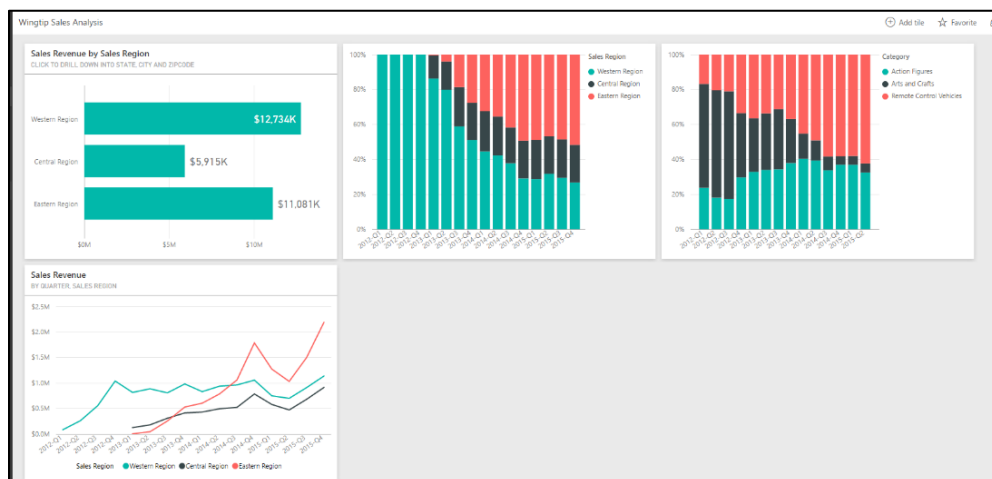
- Click on the report named **Wingtip Sales Analysis** in the **Reports** section of the left navigation.
- Navigate to the **Product Revenue Drilldown** page using the page navigation menu at the bottom of the report.



- Pin the line chart visual by clicking the thumbtack icon in the top right corner.
- Click the **Pin** button when you see the **Pin to dashboard** dialog.



- Navigate to the **Wingtip Sales Analysis** dashboard to see the new line chart tile you have just created.



- Navigate to the **Tile details** page for the new tile.

- g) Update the tile's **Title** property to **Quarterly Sales Revenue by Sales Region**.
- h) Update the tile's **Subtitle** property to **Click to drill down into category, subcategory and product**.

Tile details

\* Required

Details

☒ Display title and subtitle

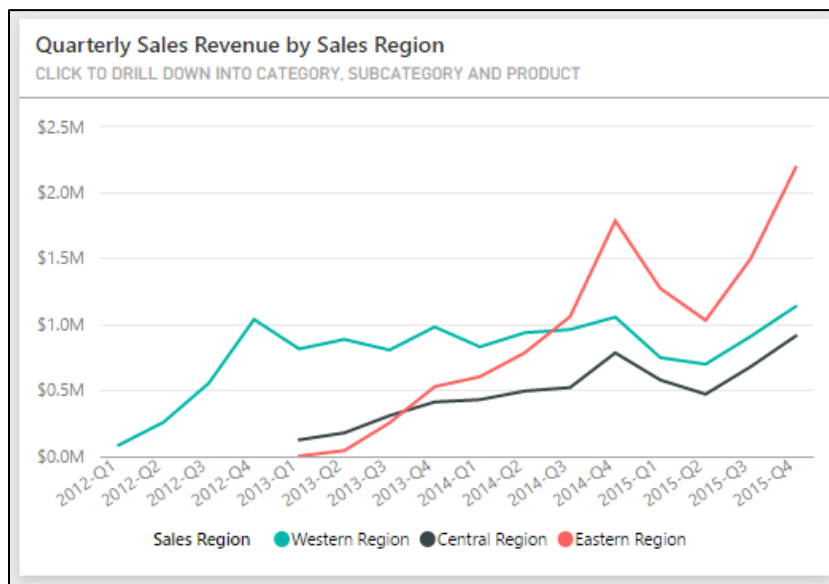
Title

Quarterly Sales Revenue by Sales Region

Subtitle

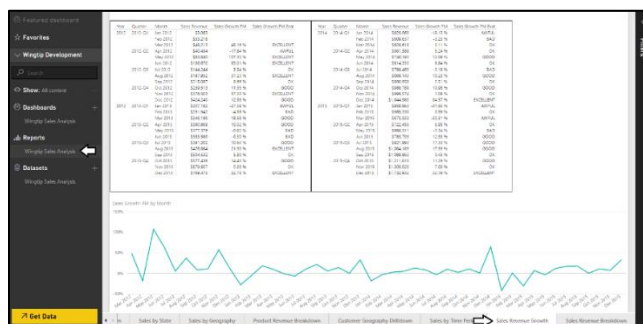
Click to drill down into category, subcategory and product

- i) Verify that the tile has been updated with your changes to the title and subtitle.

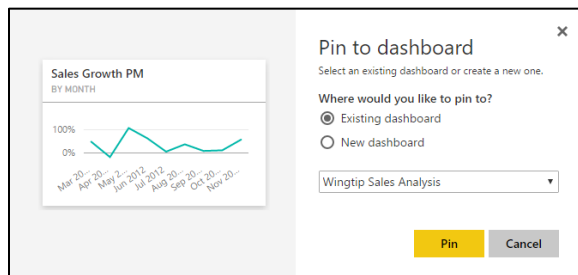


17. Pin another report visual to create a fifth dashboard tile.

- a) Click on the report named **Wingtip Sales Analysis** in the **Reports** section of the left navigation.
- b) Navigate to the **Sales Revenue Growth** page using the page navigation menu at the bottom of the report.



- c) Pin the line chart visual at the bottom of the page by clicking the thumbtack icon in the top right corner.
- d) Click the **Pin** button when you see the **Pin to dashboard** dialog.



- e) Navigate to the **Wingtip Sales Analysis** dashboard to see the new line chart tile you have just created.



- f) Navigate to the **Tile details** page for the new tile.  
g) Update the tile's **Title** property to **Sales Growth from Previous Month**.  
h) Update the tile's **Subtitle** property to **Click to see Monthly Sales Growth detail**.

Tile details

Required

Details

☒ Display title and subtitle

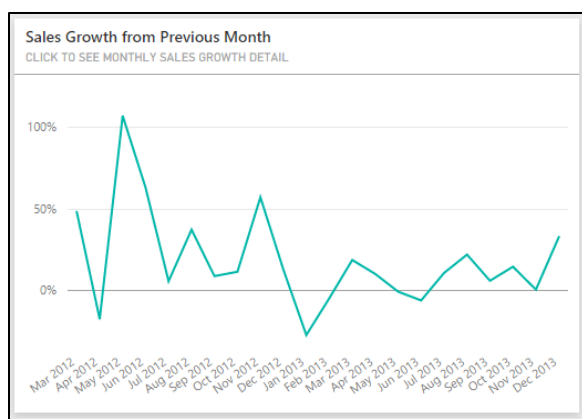
Title

Sales Growth from Previous Month

Subtitle

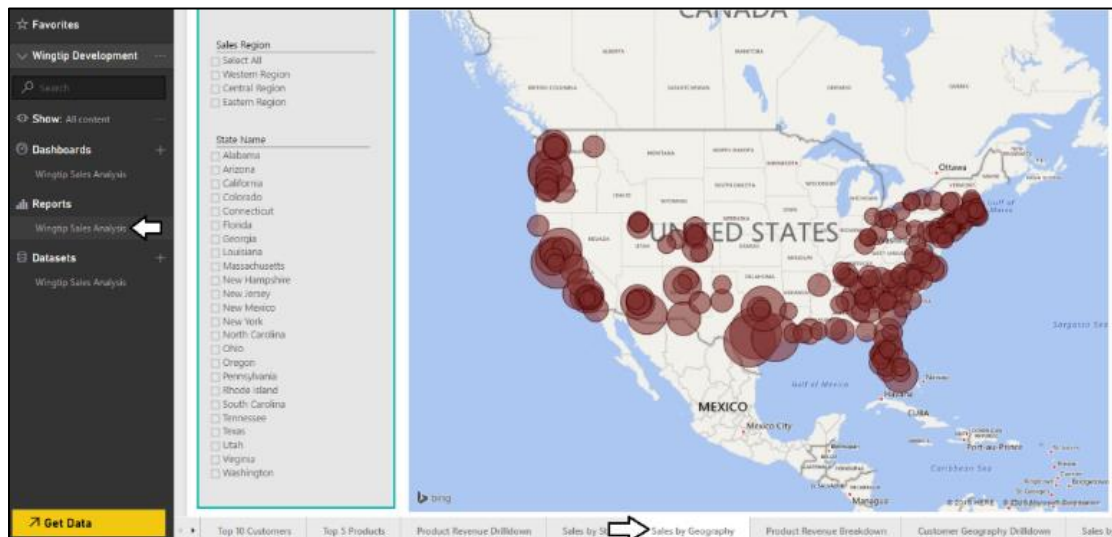
Click to see Monthly Sales Growth detail

- i) Click **Apply** on the Tile details page to see your changes applied to the line chart tile.

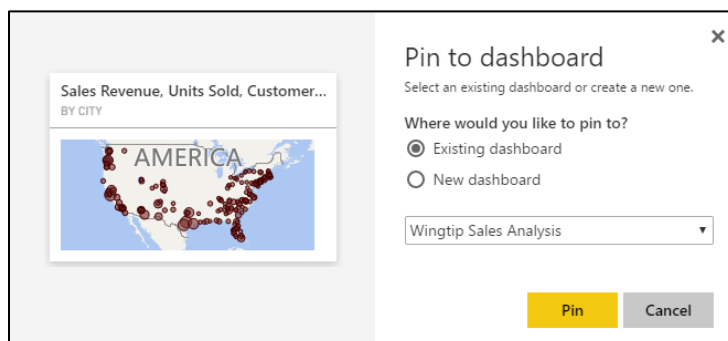


18. Pin another report visual to create a sixth dashboard tile.

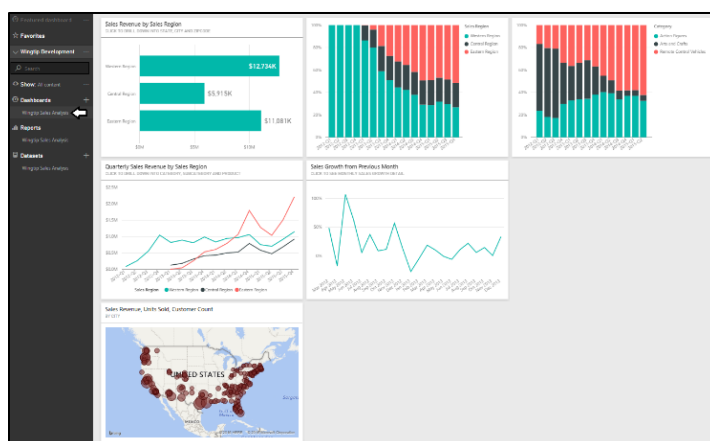
- Click on the report named **Wingtip Sales Analysis** in the **Reports** section of the left navigation.
- Navigate to the **Sales by Geography** page using the page navigation menu at the bottom of the report.



- Pin the map visual by clicking the thumbtack icon in the top right corner.
- Click the **Pin** button when you see the **Pin to dashboard** dialog.



- Navigate to the **Wingtip Sales Analysis** dashboard to see the new line chart tile you have just created.



- Use the mouse to move the tile with map visual to the end of the second row.





- g) Navigate to the **Tile details** page for the new tile with the map.
- h) Update the tile's **Title** property to **Sales Revenue by Geography**.
- i) Update the tile's **Subtitle** property to **Click to drill down into sales region and state**.

Tile details

\* Required

Details

☒ Display title and subtitle

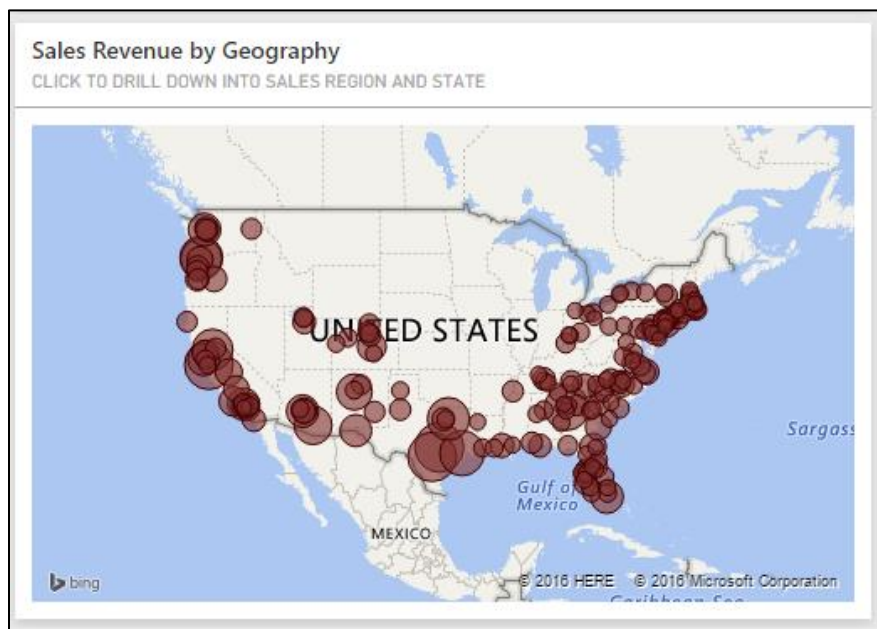
Title

Sales Revenue by Geography

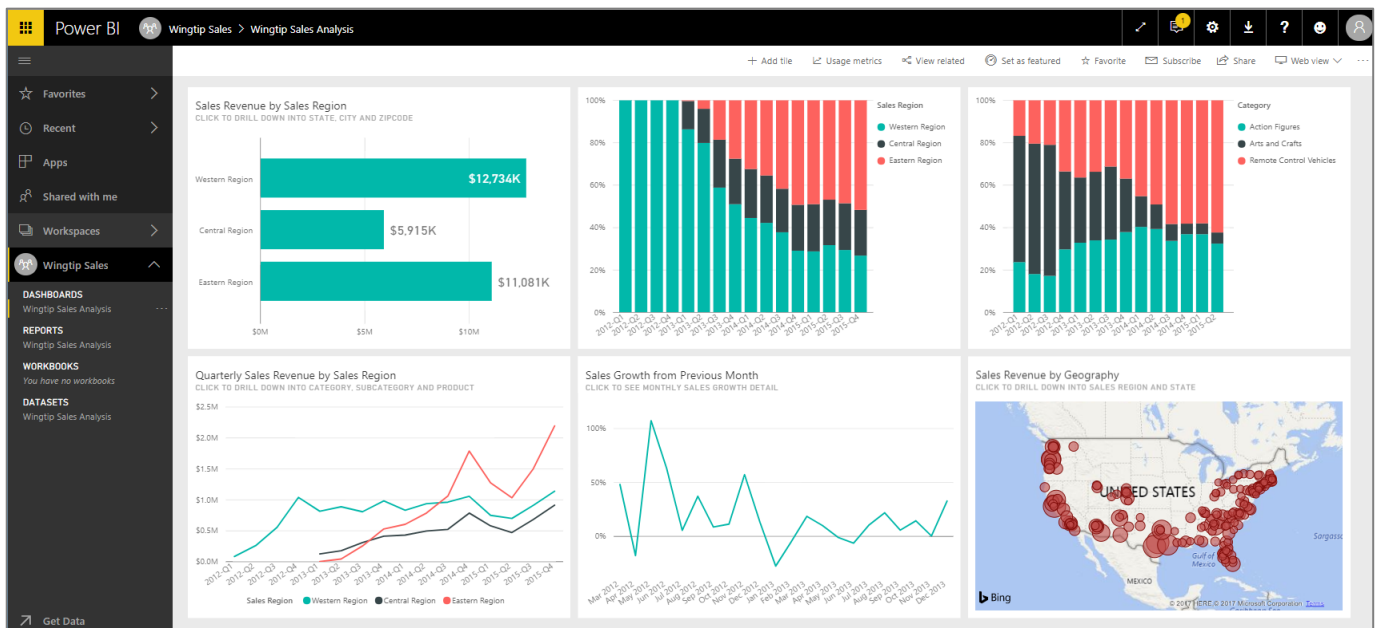
Subtitle

Click to drill down into sales region and state

- j) Click **Apply** on the Tile details page to see your changes applied to the tile's title and subtitle.



19. At this point, you have finished building the **Wingtip Sales Analysis** dashboard.

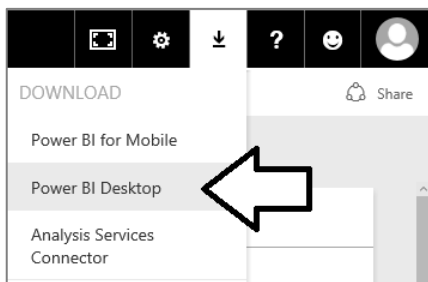


Now that you have created a dashboard, the next step is to make it accessible to other users within your Office 365 tenancy. You will make this dashboard available to other users by publishing the current app workspace as a Power BI app.

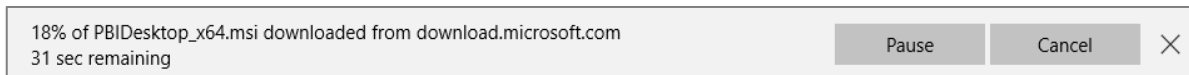
## Exercise 7: Getting Started with Power BI Desktop

In this exercise, you will first download and install Power BI Desktop if you have not already done so. Note that if Power BI desktop is already installed on your student workstation, you can skip ahead in this exercise to step 12.

20. Using the browser, navigate to the landing page of the Power BI service at <https://app.powerbi.com>.
21. On the top right of the Power BI service window, drop down the **Downloads** menu and click the **Power BI Desktop** menu command to begin the download of the installation file.



22. Wait for the MSI file to download.



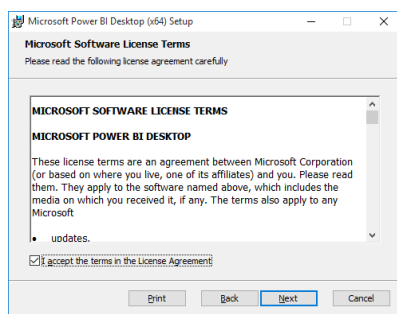
23. Once the file has downloaded, click the **Run** button to begin the installation of Power BI Desktop.



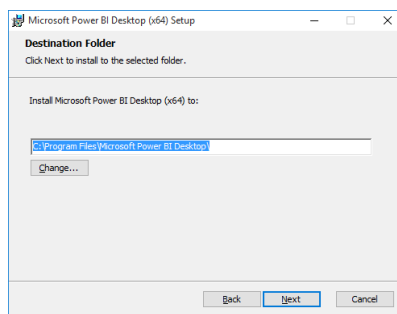
24. When you see the Welcome screen, click **Next** to continue with the installation.



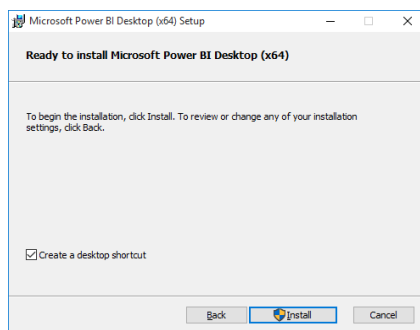
25. Click the checkbox to accept the license agreement and click **Next**.



26. Accept the default location for the installation and click **Next**.



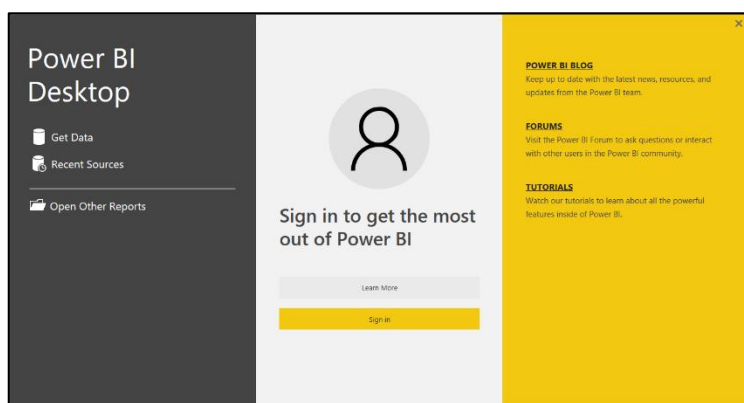
27. On the next screen, click **Install**.



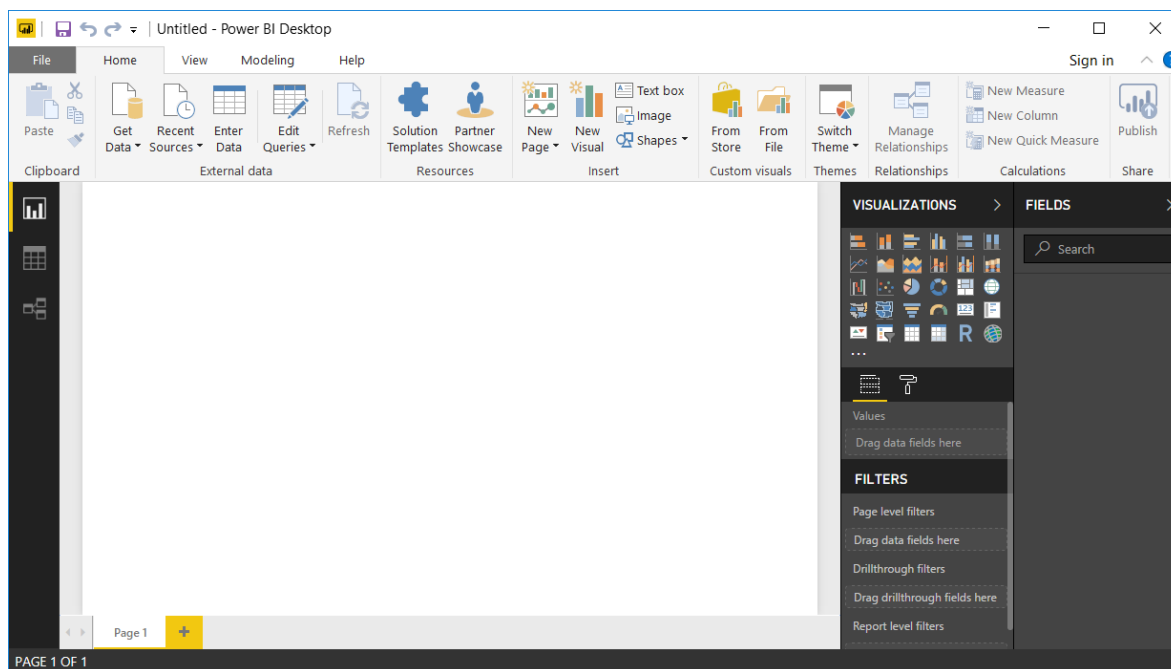
28. When you see the **Completed the Microsoft Power BI Desktop Setup Wizard** screen, click **Finish** to launch Power BI Desktop.



29. When Power BI Desktop launches for the first time, it displays a Welcome screen as shown in the following desktop. Click the (X) button in the upper right corner to close this window.



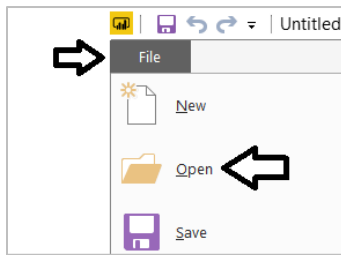
30. At this point, you should have Power BI Desktop running with a new, unsaved project as shown in the following screenshot.



You can start this exercise here if Power BI Desktop was already installed.

31. Open the Power BI Desktop project file named **Lab01.pbix**.

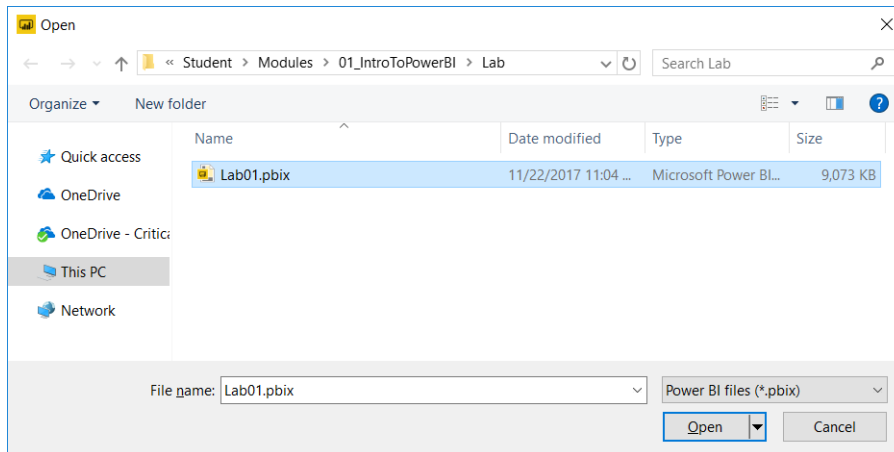
- a) Select the **File > Open** command from within Power BI Desktop.



- b) Locate the PBIX file located at the following path.

**C:\Student\Modules\01\_IntroToPowerBI\Lab\Lab01.pbix**

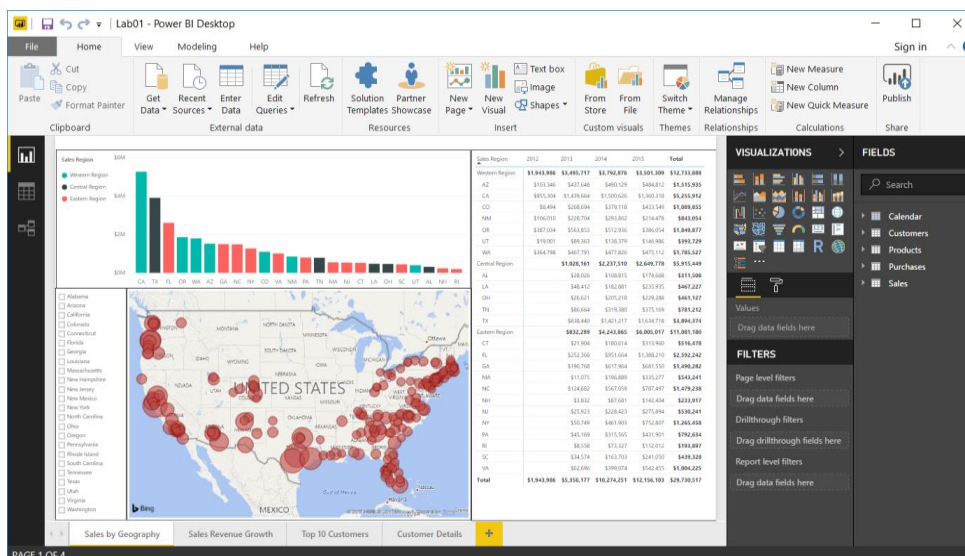
- c) Open **Lab01.pbix** to load this project into Power BI Desktop.



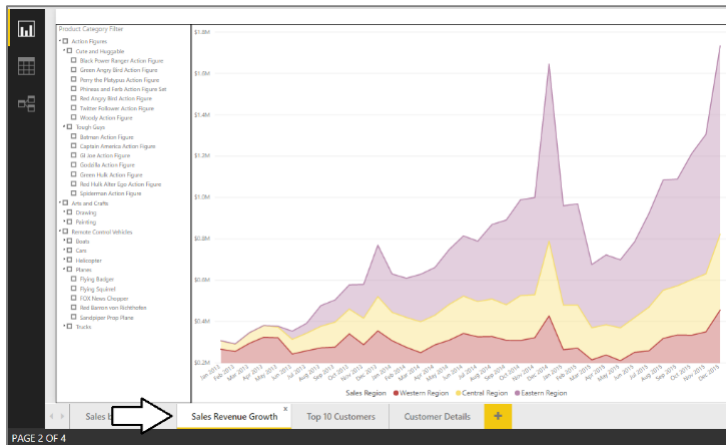
The project should now be open in Power BI desktop.

32. Inspect the contents of the Power BI Desktop project named **Lab01.pbix**.

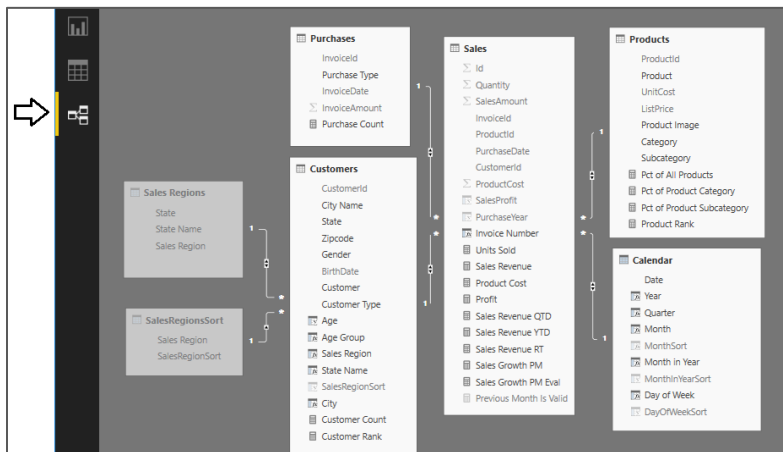
- a) Inspect the report that has been created inside this project. You should see if provides four pages.



- b) Using the navigation tabs at the bottom of the report, move from page to page to inspect each page in the report.



- c) Click on the Relationship view button in the left navigation to see the tables included in data model and their relationships.



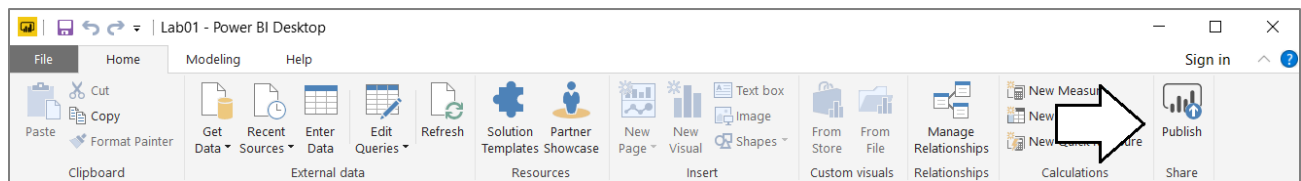
- d) Click on the Data view button in the left navigation to see a tabular view of the data inside the project's data model. Note that you can select a table in the FIELDS list on the right to see the data in that table.

ProductId	Product	UnitCost	ListPrice	Product Image	Category
1	Batman Action Figure	\$6.85	\$14.95	http://c.besresources.blob.core.windows.net/images/WP0001.jpg	Action Figures
2	Captain America Action Figure	\$7.05	\$12.95	http://c.besresources.blob.core.windows.net/images/WP0002.jpg	Action Figures
3	GI Joe Action Figure	\$6.10	\$14.95	http://c.besresources.blob.core.windows.net/images/WP0003.jpg	Action Figures
4	Green Hulk Action Figure	\$2.85	\$9.95	http://c.besresources.blob.core.windows.net/images/WP0004.jpg	Action Figures
5	Red Hulk Alter Ego Action Figure	\$2.85	\$9.95	http://c.besresources.blob.core.windows.net/images/WP0005.jpg	Action Figures
6	Godzilla Action Figure	\$14.25	\$19.95	http://c.besresources.blob.core.windows.net/images/WP0006.jpg	Action Figures
7	Perry the Platypus Action Figure	\$12.00	\$21.95	http://c.besresources.blob.core.windows.net/images/WP0007.jpg	Action Figures
8	Green Angry Bird Action Figure	\$2.10	\$4.95	http://c.besresources.blob.core.windows.net/images/WP0008.jpg	Action Figures
9	Red Angry Bird Action Figure	\$2.10	\$14.95	http://c.besresources.blob.core.windows.net/images/WP0009.jpg	Action Figures
10	Phineas and Ferb Action Figure Set	\$12.25	\$19.95	http://c.besresources.blob.core.windows.net/images/WP0010.jpg	Action Figures
11	Black Power Ranger Action Figure	\$6.15	\$7.50	http://c.besresources.blob.core.windows.net/images/WP0011.jpg	Action Figures
12	Woody Action Figure	\$7.10	\$9.95	http://c.besresources.blob.core.windows.net/images/WP0012.jpg	Action Figures
13	Soldierman Action Figure	\$10.40	\$12.95	http://c.besresources.blob.core.windows.net/images/WP0013.jpg	Action Figures
14	Twitter Follower Action Figure	\$0.08	\$1.00	http://c.besresources.blob.core.windows.net/images/WP0014.jpg	Action Figures
15	Crayola Crayon Set	\$2.20	\$2.49	http://c.besresources.blob.core.windows.net/images/WP0015.jpg	Arts and Craft
16	Sponge Bob Coloring Book	\$0.85	\$2.99	http://c.besresources.blob.core.windows.net/images/WP0016.jpg	Arts and Craft
17	Easel with Supply Trays	\$12.10	\$49.99	http://c.besresources.blob.core.windows.net/images/WP0017.jpg	Arts and Craft
18	Create O' Crayons	\$10.50	\$14.95	http://c.besresources.blob.core.windows.net/images/WP0018.jpg	Arts and Craft
19	Etch A Sketch	\$7.25	\$12.95	http://c.besresources.blob.core.windows.net/images/WP0019.jpg	Arts and Craft
20	Green Hornet	\$18.25	\$24.95	http://c.besresources.blob.core.windows.net/images/WP0020.jpg	Remote Contr
21	Red Wacky Stud Bumper	\$12.40	\$24.95	http://c.besresources.blob.core.windows.net/images/WP0021.jpg	Remote Contr
22	Red Stomper Bully	\$21.50	\$29.95	http://c.besresources.blob.core.windows.net/images/WP0022.jpg	Remote Contr
23	Green Stomper Bully	\$14.50	\$24.95	http://c.besresources.blob.core.windows.net/images/WP0023.jpg	Remote Contr
24	Indy Race Car	\$12.00	\$19.95	http://c.besresources.blob.core.windows.net/images/WP0024.jpg	Remote Contr
25	TurboBoost Speedster	\$12.50	\$32.95	http://c.besresources.blob.core.windows.net/images/WP0025.jpg	Remote Contr

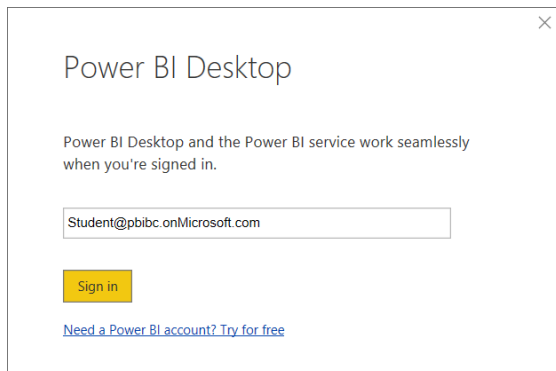
You do not need to make any changes to the Power BI Desktop project named **Lab01.pbix**. The purpose of this lab is for you to open an existing project that has already been completed and then to publish it to your personal workspace.

33. Publish the **Lab01.pbix** project to the Power BI Service.

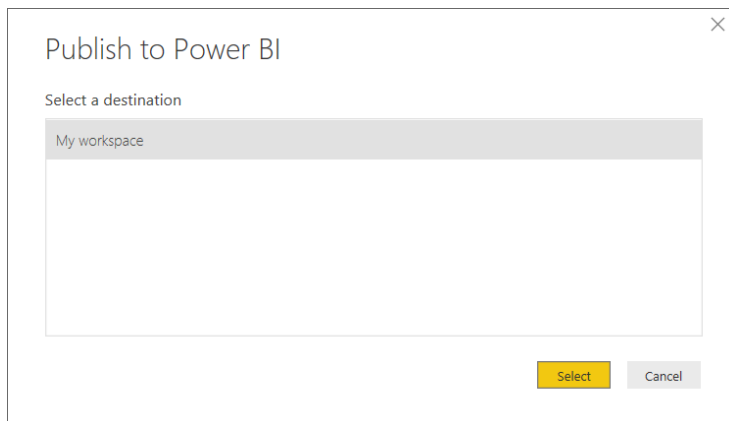
- a) Navigate to the **Home** tab in the ribbon and click the **Publish** button on the far right-hand side.



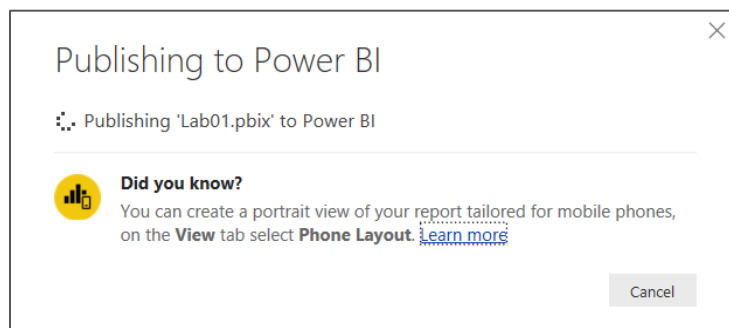
- b) When prompted with the **Sign in to Power BI** dialog, click the **Sign In** button



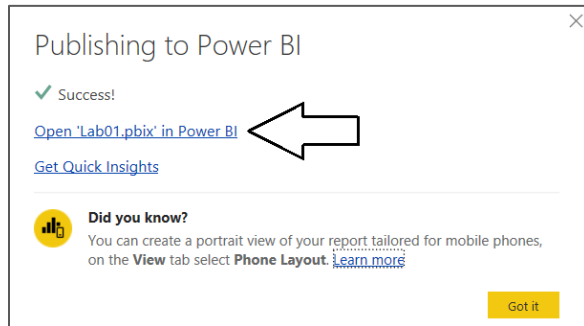
- c) When prompted for your password, sign into the Power BI service.  
d) When Power BI Desktop prompts you with the **Publish to Power BI** dialog, select **My workspace** and then click **Select**.



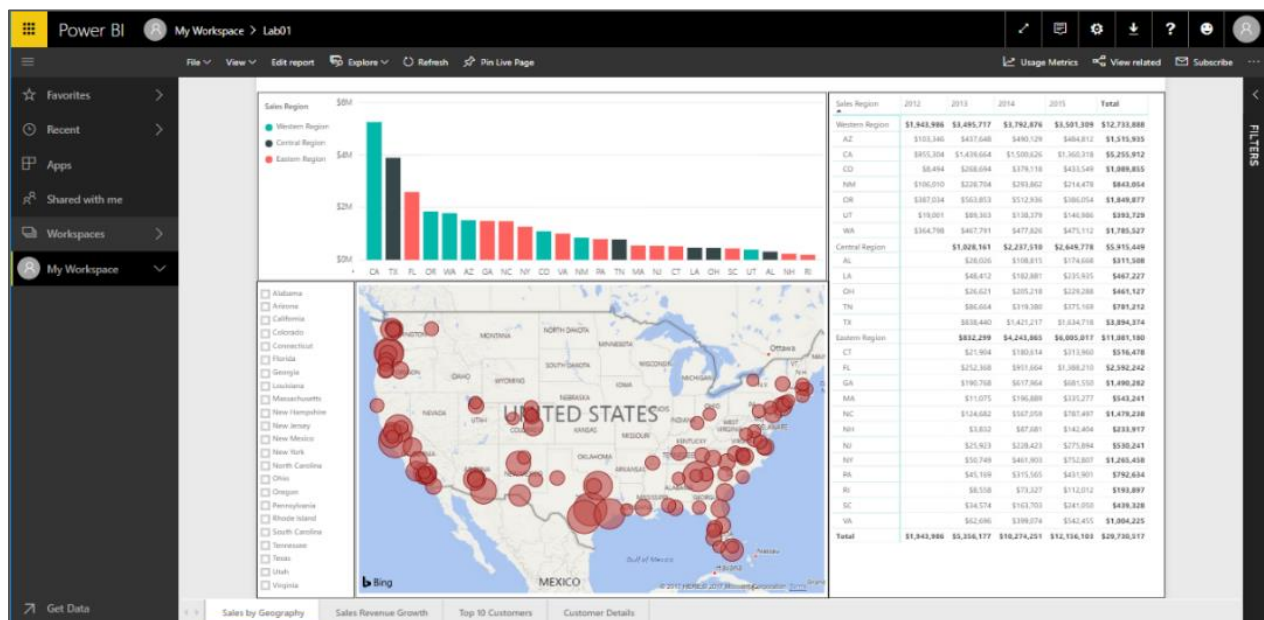
- e) Power BI Desktop will display the **Publishing to Power BI** dialog as the publishing process begins.



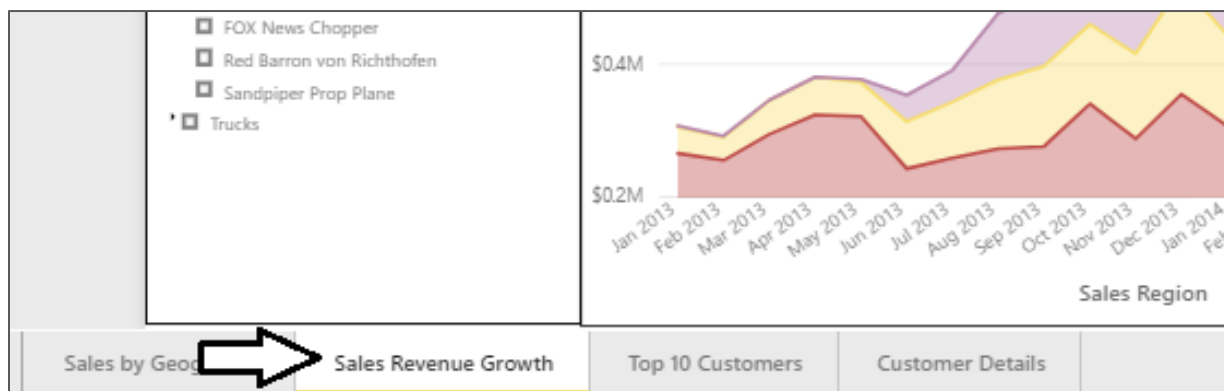
- f) Once the publishing process has completed, the **Publishing to Power BI** dialog will display a success message and provide you with a link to **Open Lab01.pbix in Power BI**. Click on that link to navigate to the Power BI service using the browser.



- g) You should now be able to see the **Sales by Month** page of the report you just created.



- h) Click on the **Sales by State** link at the bottom of the screen to see the second page of the report.

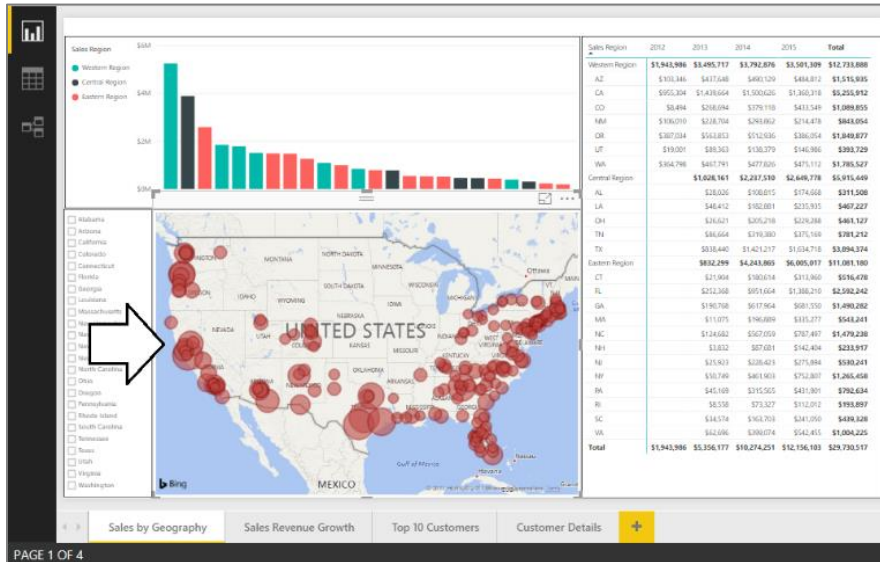


You have now successfully published a PBIX project using Power BI Desktop. But what happens when you want to make a change to a report after it has been published? It's very easy because you can make changes to your Power BI Desktop project and republish it on top a previous version of the same project that has already been published.

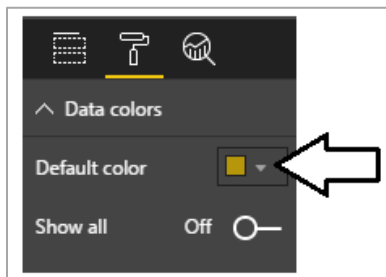


34. Change the type of the visual that displays sales revenue by month and purchase type.

- Return back to Power BI Desktop and make sure you are in report view for the project named **Lab01.pbix**.
- Return to the **Sales by Geography** page.
- Select the **Map** visual.



- Update the **Default color** property in the **Data colors** section in the **Format pane** to change the color of the bubbles from red to a different color such as yellow or purple.



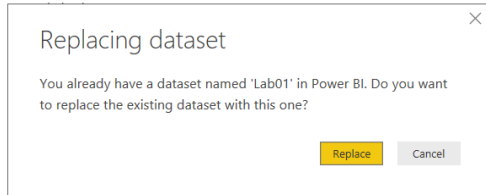
- Verify that the bubbles in the Map visual are now a different color than red.



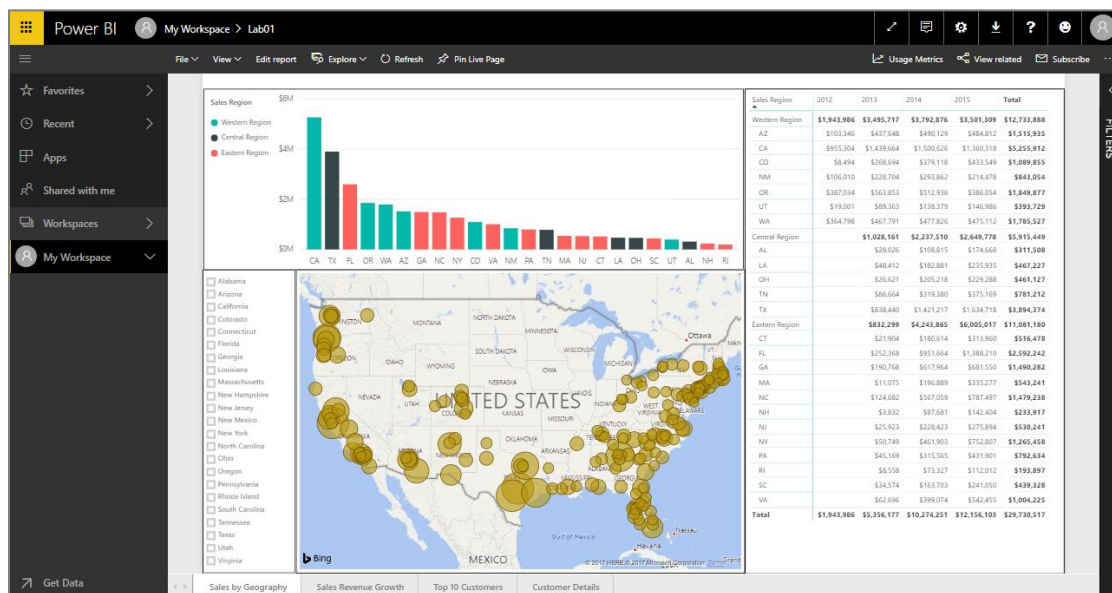
- Save your changes to **Lab01.pbix**.

35. Republish the project to the Power BI service.

- Click the **Publish** button on the far right-hand side of the **Home** tab in the ribbon.
- When Power BI Desktop prompts you with the **Publish to Power BI** dialog, select **My workspace** and then click **Select**.
- When prompted with the **Replacing dataset** dialog, click **Replace** to begin the publishing process.



- Once the publishing process has completed, inspect the published report in the Power BI service using the browser. Verify that the bubble color within the Map visual has been updated.



Congratulations, you have now finished this lab. If you finish early before other student and you still have extra time, experiment by clicking the **Edit report** button in the browser and seeing how you can continue to modify the pages of the report after the report has been published to the Power BI service. Note that any changes you make to the report through the browser will be overwritten if you republish the report with Power BI Desktop.